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PREFACE

Intellectbase International Consortium (IIC) is a professional and academic organization dedicated to advancing and encouraging quantitative and qualitative, including hybrid and triangulation, research practices. This volume contains articles presented at the Fall 2011 conference in Atlanta, GA – USA from October 13-15, 2011.

The conference provides an open forum for Academics, Scientists, Researchers, Engineers and Practitioners from a wide range of research disciplines. It is the eighteenth (18) Volume produced in a unique, peer-reviewed intellectual perspectives and multi-disciplinary foundation format (See back cover of the proceedings).

Intellectbase International Consortium is responsible for publishing innovative and refereed research work on the following hard and soft systems related themes – Business, Education, Science, Technology, Multimedia, Arts, Political and Social (BESTMAPS). The scope of the proceeding (International Handbook of Academic Research & Teaching) is: literature reviews, data collection and analysis, methodology selection, data evaluation, research design and development, hypothesis-based creativity and reliable data interpretation.

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To accomplish research collaboration, knowledge sharing and transfer, Intellectbase is dedicated to publishing a range of refereed academic Journals, book chapters and conference proceedings, as well as sponsoring several annual academic conferences globally.

Senior, Middle and Junior level scholars are invited to participate and contribute one or several article(s) to the Intellectbase International conferences. Intellectbase welcomes and encourages the active participation of all researchers seeking to broaden their horizons and share experiences on new research challenges, research findings and state-of-the-art solutions.

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- Build and stimulate intellectual interrelationships among individuals and institutions who have interest in the research discipline.
- Promote the collaboration of a diverse group of intellectuals and professionals worldwide.
- Bring together researchers, practitioners, academicians, and scientists across research disciplines globally - Australia, Europe, Africa, North America, South America and Asia.
- Support governmental, organizational and professional research that will enhance the overall knowledge, innovation and creativity.
- Present resources and incentives to existing and new-coming scholars who are or planning to become effective researchers or experts in a global research setting.
- Promote and publish professional and scholarly journals, handbook, book chapters and other forms of refereed publications in diversified research disciplines.
- Plan, organize, promote, and present educational prospects - conferences, workshops, colloquiums, conventions — for global researchers.
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# TABLE OF CONTENT

## LIST OF AUTHORS

A Student Centered Model for Analyzing Real Estate Investment Return & Risk using Algorithmic Discounted Cash Flow Pro Forma Simulation Analysis

*Richard A. Lee* ........................................................................................................ 1

An Analysis of College Students’ Credit Card Usage

*Manimoy Paul, James Nolan and Andrea Smith-Hunter* ............................................. 20

Human Capital as an Economic Development Tool in the Rural vs. Non-Rural South

*Bethany Parker Mullin* .................................................................................................. 31

The Relationship of Personal Credit Behavior to Organizational Behavior

*Louis F. Jourdan* ........................................................................................................ 45

Objectivity Theory of Good Governance

*Jan Mohammad* ........................................................................................................... 50

Scanner Wars: Why Use a Self-Checkout Line when Cashiers are More Efficient?

*Jim Mirabella and Mohamad Sepehri* ........................................................................ 55

Today’s Indispensable B2B Sales Relationship Drivers

*J. D. Williams and Matt Sims* ........................................................................................ 60

A Study on the Contemporary Risen Issues in the Mergers and Acquisitions: Strategy of the Mexican Business Leaders

*José G. Vargas-Hernández and Mohammad Reza Noruzi* ........................................ 74

Economic Instability and Fraud Loss: A Decade of Uncertainty

*Kim James, Robyn Hulsart and Dana Cummings* ....................................................... 81

The Improvement Project Priority Determination in Lean Six Sigma A Grey Model Based on Entropy Power Theory

*Lihong Zhang and Jiaqing Yang* .................................................................................. 92

Critical Factors to Facilitate Cooperative Learning in IT Development Teams

*Rajesh Aggarwal, Jong-Sung Lee and Rahul Paul* ....................................................... 105

The Decrease in the Velocity of Money in the United States: Some Possible Causes and Some Implications

*Harrison C. Hartman* .................................................................................................. 112

Sales Neophytes Struggle in Today’s B2B Business

*J. D. Williams* ........................................................................................................... 121

An Examination of the Interaction of Public and Private Long Term Care Insurance: Paradox and Policy

*Kimberly S. Davey and Tom J. Sanders* ...................................................................... 141

Competency Cluster Validation: An Empirical Study

*Jeffery Stevens, Festus Onyegbula and Maurice Eugene Dawson Jr.* ...................... 147

Workplace Insecurity in the New Economic System: Role of HRM and HR Process Revisited

*Kumudinei Dissanayake* .............................................................................................. 156

Coping Effectiveness: Differential Predictions for Plateaued Employees

*Carrie S. Hurst and Kenneth Kungu* ........................................................................... 164

Relational Aggression: A Precursor to Workplace Bullying?

*Phillip L. Davidson* .................................................................................................... 169

## LIST OF INSTITUTIONS, STATES AND COUNTRIES

VIII

## SECTION 1: BUSINESS & MANAGEMENT

1. Algo...
The Influence of Workplace Facilities and Social Support on Lactating Working Mothers’ Involvement at Work  
Abigail Opoku Mensah .................................................................................................................. 177

Importance of Establishing Clear Link between CSF and KPI in Construction  
Bita Seyfi and Pooria Rashvand .................................................................................................. 178

Accounting Majors and Professional Ethics: A Survey  
Siriyama Kanthi Herath and Laksitha Maheshi Herath ............................................................... 179

Market Value Implications of Business Communication  
Uma Sridharan .................................................................................................................................. 180

Importance of the Strategic & Operation Plans Under the State Cooperative Agreement  
Maurice Eugene Dawson Jr., James Truesdale and Joshua Robinson ........................................... 181

Impact of SAS 99 on organizations  
Nhoj-Trebor Steede ...................................................................................................................... 182

Reactions of European Financial Markets to the US Financial Crisis  
Hong Rim and Robert Setaputra .................................................................................................... 183

Revenue Recognition: A Literature Review  
Tristian Gee ...................................................................................................................................... 187

Exploring the Relationship Between Customer Satisfaction and Customer Loyalty in the Ghanaian Telecom Industry  
Gloria K. Q. Agyapong .................................................................................................................. 188

Reporting Equity  
Ghannelle Johnson .......................................................................................................................... 189
SECTION 2: SCIENCE & TECHNOLOGY

Integrating Dynamic Posters & Compact Information Systems to Improve Researcher Productivity
LeeRoy Bronner and Onyeka Nwaogu

A Batman Approach to Software Project Management
Eva Sager and Hisham M. Haddad

The Fundamental Law Network
Otis D. Williams

An $\alpha$-Cut Approach for Fuzzy Product
R. Hassanzadeh, I. Mahdavi, N. Mahdavi-Amiri, H. Shafiean and A. Tajdin

Glitz, Glamour and Sustainable Design
Dan May

Melatonin Fluid and AIDS
Otis D. Williams

Recurrent Anterior Cruciate Ligament Injury in a Female High School Multi-Sport Athlete: A Case Report
Jonathan Ratliff and Yvette Bolen

Virtual Worlds for Limited Prototyping, Testing, and Training of Health Information Technology Systems
Maurice Eugene Dawson Jr.

An Anthropomorphic Perspective in Homology Theory
Brett A. Sims

Walking the Talk: Embedding Sustainable Development into Every Day Practice
William Emanuel and James Hunter

Importance of Emerging Technologies in Society for Futuring & Innovation
Imad Al Saeed

The Multi-Facility Competitive Location-Allocation Problem with $\text{M/M/k}$ Queue, Based on the Maximum Capture Problem with Price Model
Mojtaba Hasanpour, Iraj Mahdavi and Esmaile Khorram

Leveraging Virtual Worlds for Event Planning
Daniel Sampson and Maurice Eugene Dawson Jr.

Emerging Need for Cyber Security in Sub-Saharan Africa
Augustine Dike and Maurice Eugene Dawson Jr.
SECTION 3: EDUCATION, SOCIAL & ADMINISTRATION

Ethics, Academic Integrity, and New Technology
John Mankelwicz, Robert Kitahara and Frederick Westfall ................................................................. 252

A Culture for Success
Carolyn Russell, Isabelle Warren, Charlotte Minnick and Yvette Richardson ........................................ 263

Process Consulting and Intervention Case Study at Collin County Community College
Negar Sohaee .................................................................................................................................................. 276

Graphical Representations for Introductory Statistics Education
Lin Ge .......................................................................................................................................................... 289

Creativity’s Role in the Success of College of Business Students: An Empirical Study
Doreen Sams, Michael Hersh, Shannon O’Keefe, Emily Scarboro, Zachary Tuman and Lauren White ........... 299

An Analysis of the Corporate Assessment of Marketable Skills in the Computer Information Systems Continuum
Donald Caputo .................................................................................................................................................. 305

“Involve Me and I Will Learn”
Reza Varjavand ............................................................................................................................................ 312

Academic Engagement Ratings and Instructional Preferences: Comparing Behavioral, Cognitive, and Emotional Engagement among Three School-Age Student Cohorts
Tonya Conner ................................................................................................................................................ 318

Working With Minority Parents and Their Children With Disabilities: Are Parents Satisfied?
Lawrence K. Ametepee, Beatrice Adera, Susan Abu and Garcia Farquharson ............................................. 329

The Global Imperative: Preparing this Generation for an Interconnected World
Rodney Davis .................................................................................................................................................... 334

The Future of Doctoral Education for Educational Administrators in Leadership and Critical Thinking
Darrell Norman Burrell, Emad Rahim, Khuram Hussain, Maurice Dawson, Jr. and Aikyna Finch .................. 343

Reducing Juvenile Delinquency
Sloan T. Letman III, Alison Duggins, Janell Bryant, Shirley Chuo and Jack Aschkenazi ................................. 349

Co Relationship between Commercial Bail Bond Industry and Tennessee Jail Populations
Chinyere Ogbonna McGruder, Eric Martin and John A. Taylor II ................................................................. 353

A Comparison of Special Education Laws in Ghana and the United States
Samad M. Dimbie ............................................................................................................................................ 370

A Research Exploration of Financial Literacy Education for African American and Latino American High School Students
Darryl W. Williams, Brian C. Grizzell and Darrell Norman Burrell ............................................................... 380

Development of a Small Learning Community for African American and Latino Boys: A Case Study
Darrell L. Groves ............................................................................................................................................ 389

An Interdisciplinary Analysis of the Book, Black Greek-Letter Organizations 20: New Directions in the Study of African American Fraternities and Sororities
Darrell Norman Burrell ........................................................................................................................................ 393

The Use of Football Metaphors among Ghanaian Tertiary Students Before and After Examination
Eric Opoku Mensah ........................................................................................................................................... 395

Seniors for Society
Carol Shepherd .................................................................................................................................................. 396

Accounting Education – A Review of Changing Nature
Simone Watson .................................................................................................................................................. 398
Effective Multidisciplinary Active Learning Techniques for Freshmen Polytechnic Students
Adeel Khalid, Bernice Nuifer-Halten, Jennifer Vandenbussche, Donna Colebeck, Mir Atiquallah,
Sonia Toson and Craig A. Chin ................................................................. 399

Revisiting Brown versus Board of Education: 57 Years Later
Chinyere Ogbonna McGruder ................................................................. 405

The Need for Technology in the School Physical Education Setting
Wendy Cowan and Yvette Bolen ............................................................ 410

Determining Equality for California Out of School Time Programs: A Review of California’s
Out of School Time Program Standards
Carl B. Featherston III .............................................................................. 412

Assess or Perish: Fulfilling Learning Outcomes Assessment in Higher Education, a Case
Study of Direct Measures of Assessment
Kingsley O. Harbor .................................................................................... 415

Sustainable Leadership Skills Acquired by Cross Cultural Education
Dustin Bessette ............................................................................................ 416

Florida Superintendents Perceptions of Online Teacher Education Courses and Programs
Neil T. Faulk and Veronikha Caceres Faulk ................................................. 417

Middle School Infractions Decrease with the Implementation of an Aggressive Anti-
Bullying Initiative – P.R.E.S.S.
Jackie Hester, Yvette Bolen, Bruce Thomas, Beth McCulloch Vinson and Ben Heatherly .............. 418

Using Virtual Worlds to Teach Event Planning
Maurice Eugene Dawson Jr., Darrell Norman Burrell and Daniel Sampson .................................. 421

Voyeurism in Jamaica: Performance Gender & Control
Karen Carpenter ......................................................................................... 423

Organizational Change and Prosecutorial Misconduct
Wesley E. Phillips Jr. .................................................................................. 424

Emerging Technologies as a Degree Option
Imad Al Saeed ............................................................................................. 425
SECTION 1

BUSINESS & MANAGEMENT

A Student Centered Model for Analyzing Real Estate Investment Return & Risk using Algorithmic Discounted Cash Flow Pro Forma Simulation Analysis
Richard A. Lee

An Analysis of College Students’ Credit Card Usage
Manimoy Paul, James Nolan and Andrea Smith-Hunter

Human Capital as an Economic Development Tool in the Rural vs. Non-Rural South
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Jim Mirabella and Mohammad Sepehri

Today’s Indispensable B2B Sales Relationship Drivers
J. D. Williams and Matt Sims

A Study on the Contemporary Risen Issues in the Mergers and Acquisitions: Strategy of the Mexican Business Leaders
José G. Vargas-Hernández and Mohammad Reza Noruzi

Economic Instability and Fraud Loss: A Decade of Uncertainty
Kim James, Robyn Hulsart and Dana Cummings

The Improvement Project Priority Determination in Lean Six Sigma A Grey Model Based on Entropy Power Theory
Lihong Zhang and Jiqing Yang

Critical Factors to Facilitate Cooperative Learning in IT Development Teams
Rajesh Aggarwal, Jong-Sung Lee and Rahul Paul

The Decrease in the Velocity of Money in the United States: Some Possible Causes and Some Implications
Harrison C. Hartman

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J. D. Williams

An Examination of the Interaction of Public and Private Long Term Care Insurance: Paradox and Policy
Kimberly S. Davey and Tom J. Sanders

Competency Cluster Validation: An Empirical Study
Jeffrey Stevens, Festus Onyegbule and Maurice Eugene Dawson Jr.

Workplace Insecurity in the New Economic System: Role of HRM and HR Process Revisited
Kumudini Dissanayake

Coping Effectiveness: Differential Predictions for Plateaued Employees
Carrie S. Hurst and Kenneth Kungu

Relational Aggression: A Precursor to Workplace Bullying?
Philip L. Davidson

The Influence of Workplace Facilities and Social Support on Lactating Working Mothers’ Involvement at Work
Abigail Opoku Mensah

Importance of Establishing Clear Link between CSF and KPI in Construction
Bita Sayfi and Poonia Rastvard

Accounting Majors and Professional Ethics: A Survey
Sriyama Kanthi Herath and Lakshma Maheshi Herath

Market Value Implications of Business Communication
Upma Sridharan

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Maurice Eugene Dawson Jr., James Truesdale and Joshua Robinson

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Ntso-Trebor Steede

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A STUDENT CENTERED MODEL FOR ANALYZING REAL ESTATE INVESTMENT RETURN & RISK USING ALGORITHMIC DISCOUNTED CASH FLOW PRO FORMA SIMULATION ANALYSIS

Richard A. Lee
Barton College, USA

ABSTRACT

Simulation analysis of ex ante real estate investment returns can provide greater insights into real estate investment risks. Many real estate professionals fail to utilize risk-based metrics when valuing real estate properties, even after the benefits of representing returns as a range of probability-based outcomes have been widely publicized. The model created and described in this paper addresses these concerns by utilizing a subjective discrete probability model strategically positioned between manual “what-if” analysis and more advanced Monte Carlo simulation. It is envisioned that such a program will help stimulate a more deliberate discussion and understanding of real estate return volatility within the classroom, thus serving as a platform that encourages the adoption of more advanced risk analytics in the real estate profession.

Keywords: Simulation, Real Estate, Pro Forma, Discounted Cash Flows, Probabilistic Modeling, Point Estimates, Subjective Probability Distributions, Monte Carlo Simulation.

INTRODUCTION

Over the last forty years, numerous studies (Phyrr, 1973; Woffard, 1978; Keliher & Mahoney, 2000; Weaver & Michelson, 2004) have emerged highlighting the benefits of simulation analysis of ex ante discounted cash flow (DCF) real estate investment returns. Although academic literature espouses these benefits, little progress has occurred to actually incorporate probabilistic modeling into professional real estate investing. A recent study by Edward, Farragher and Savage (2008) finds that only 55% of professional real estate investors use any form of quantitative risk analysis when evaluating real estate investments. Of the techniques most frequently cited were manual scenario and sensitivity analysis at 44% and 39% respectively. Their findings show that more advanced techniques, such as Monte Carlo simulation, were almost nonexistent in usage at only 2%. Early research by Stephen Pyhrr (1973) revealed the many problems encountered by investors when using probabilistic simulation of real estate returns. Phyrr noted the difficulties in understanding the interdependences and distributions of the input parameters as being a major obstacle along with the ability of real estate investors to interpret the data. A review of the recent literature reveals similar issues still persist today.

Evaluating ex ante real estate investment returns requires both qualitative and quantitative analysis during the decision making process (Amidu, 2011). Indeed, the heterogeneous nature of real estate markets makes it difficult to compare data across different market and submarket segments. Often the analyst is dependent on subjective judgment of single point estimates and minimal equivalent comparisons. Developing objective probabilistic risk assessments in such environments is difficult; however, the emergence of real estate data providers and affordable computing devices has addressed some of the technological impediments. From a classroom perspective, students are now quite familiar with standard spreadsheet functionality and online data resources.

In an attempt to bridge the divide between simple manual “what if” analysis and more advanced probabilistic simulation of investment returns, this paper describes a model based on subjective discrete probability distributions of equity returns (ROE) and holding period internal rates of return (IRR) for evaluating real estate investments. Instead of relying on manually generated point estimate measures, the model incorporates an algorithmic process to produce a 3x3 and 2x2 array of ex ante probability-based outcomes. Thirty-two user controlled real estate parameters serve as inputs for the model. Seven of the 32 parameters are dynamic variables and used directly by the simulation algorithm; they include rental income, equity risk premium, capital expenditure rate, operational expenditure rate, property growth rate, debt rate and loan-to-value (LTV) ratio. A coefficient of variation is calculated and graphed for each unique combination of variables allowing users to assess the risk versus reward tradeoff as the variables change.

The model is created primarily as a teaching tool to assist students in understanding and incorporating risk metrics during the valuation of real estate investments. To use the tool, a basic background in real estate principles and statistics is needed, similar to that found in most real estate investment courses at the undergraduate or graduate level. The remainder of the
paper is organized into several sections including an overview of relevant literature, a general description of the model and individual components, a brief discussion on the deterministic equations used to generate outputs, and a description of the simulation process and corresponding probabilistic metrics, tables and graphs.

OVERVIEW OF RELEVANT LITERATURE

Simulation of real estate return and risk analysis using discounted cash flow (DCF) valuation dates from the late 1960s and continues today. Pioneers such as Graaskamp (1969), Pharr (1973) and Woffard (1978) were instrumental in producing much of the initial research in the field. A historical review of the literature reveals that although technology advancements have alleviated much of the initial impediments to widespread adoption, real estate investors still limit their use of probabilistic analysis when evaluating real estate investments (Farragher & Savage, 2008). One major limitation appears to be a lack of statistical knowledge and training needed by the analyst to conduct such analysis.

Stephen Pyhrr (1973) was one of the first researchers to study real estate return simulation and risk during the late 1960’s. Very few, if any, real estate investment decision makers were utilizing computerized decision support systems (DSS) during this time. Pyhrr advocated that better alternatives were available than the subjective approaches being practiced, which he stated included “hunches, intuition, judgment and instinct” (Pyhrr, 1973, p.48). Computer technology was at its infancy and simulations required access to a mainframe computer. Likewise, obtaining the data needed for the simulation was cost prohibitive. Fortunately, many of the computing obstacles faced by Pyhrr have been addressed today.

Pyhrr noted that one of the more complex issues regarding simulation of real estate cash flows involved the uncertainties of the underlying input parameters. Multiple input variables with varying degrees of correlated and uncorrelated probability distributions all contributed to return risk. To generate an accurate model, probability distributions for each parameterized factor had to be known in advance. As the author notes, determining these distributions required a skilled market analyst capable of producing the underlying demographic and market-specific data needed to make such measurements. The analyst also needed to be skilled in the various mainframe tools used to generate the parameterized distributions. For most practitioners of the time, such requirements limited the level of discussion needed to grasp these more advanced techniques.

Through the late 70’s and early 80’s computerized decision support system (DSS) continued to advance, especially those focused on financial modeling. Woffard’s (1978) work called Computerized Real Estate Appraisal System or CREAS, addressed some of the concerns during that time, such as single point DCF valuation estimates used by real estate appraisers. Continuing earlier technological advancements in DCF modeling by Graaskamp (1969) and Pyhrr (1973), Woffard’s 32-variable model allowed appraisers to use computerized models to simulate market-based appraisals using probabilistic inputs. Although successful in its overall objective, Woffard acknowledged that input parameter distributions inherently reflect the subjective views of the appraiser. The outcome of such modeling culminated in a range of possible valuation metrics reflecting the appraiser’s perception of the market.

Mitchell (1993) advocated that the appraisal process should incorporate the use of spreadsheet analysis in the generation of DCF valuations. He argued that simply relying on single point estimates using direct capitalization was dated and failed to reflect the true range of possible market values. He noted that almost all college graduates had some experience with spreadsheets and leveraging this knowledge into the appraisal process would benefit the profession. Although Mitchell didn’t totally advocate dropping direct capitalization techniques, he acknowledged that the advances in technology and its widespread adoption were a compelling justification for greater usage of income analysis through spreadsheet DCF based modeling.

Nagard, Wayne, Razarie and Christopher (1999) proposed that subjective or qualitative DCF probability distributions in real estate appraisals were a better approach than single point-price opinions. To validate their concern, they created a continuous probability distribution model and case study to support their argument. The authors, all practicing commercial real estate appraisers, stressed the importance of including probability based ranges when valuing properties. They also acknowledged that input parameter distributions would be subjective and reflect the varying views and judgment of the appraiser; however, they argued this should not prevent the appraiser or investor from using what they described as probability curves to express the perceived odds surrounding market and sub-market price opinions.

Keilher and Mahoney (2000) created a DCF cash flow modeling tool to assist analysts when valuing property using three distinctive approaches: deterministic point estimates, sensitivity analysis, and probabilistic modeling. They intended to show

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1 Direct capitalization uses only a single year’s net income, or the average of several years, and a market defined capitalization rate.
how more advanced Monte Carlo simulation (MCS) techniques could improve point estimate modeling and reveal risk when appraising real estate assets. The authors compare and contrast single point estimates and subjective manual what-if analysis with MCS-based analysis. They note that manually performing the permutations for each combination of input parameters using what-if analysis was time consuming and impractical. They argued that computing power was now inexpensive and the emergence of commercial simulation software, e.g., @Risk and Crystal Ball, allowed real estate investors to overcome the shortcomings of single point estimated DCF models. Although the merits of proper MCS usage were becoming well documented in the academic world, the authors acknowledged the perplexing real world garbage-in-garbage-out (GIGO) problem of selecting the proper inputs parameters and their distributions.

Weaver and Michelson (2004) created a simple Excel based model that used discounted cash flow point estimates to produce a plus or minus range of internal rate of return (IRR) equity values. Similar to the research in conducted in this paper, they produced a two dimensional matrix of cash flow and reversion values using heuristic probability distributions around a proposed IRR point estimate. They also incorporated a non-parametric example that allowed the analyst to vary assumptions from the most likely scenario. The model was intended to show students the associated risk when forecasting periodic cash flows and terminal values. By simplifying the view to only year-end cash flows and a reversion value, the authors were able to focus the discussion of risk on the most basic elements. However, real world situations rarely allow for such simplification, especially for longer investment horizons.

Baroni, Barthelemy and Mckrane (2005) created a cash flow model that deviated from the more traditional DCF-based models. Using geometric Brownian processes for rental income and reversion price, the authors concluded that MCS complemented the more classical point-estimate DCF approaches to real estate valuations. However, as with earlier studies, the use of more advanced statistical measures and probability theory required a higher foundation in mathematics by the typical appraiser or real estate investor.

Hoesli, Jani and Bender (2006) incorporated a variation of the traditional DCF analysis by using the Adjusted Present Value valuation technique (Myers, 1974) on 30 Swiss properties. Their research focused on several DCF limitations, such as determining the present value of the reversion price, variations in the discount rate risk premium over the holding period and the absence of risk metrics in single point values using traditional DCF analysis. They found that Monte Carlo simulations of parameter values provided estimates similar to those generated by hedonic models of the same Swiss real estate properties. Specific parameters found to affect value using sensitivity analysis were long-term interest rates, as part of the discount rate calculation, and the growth rate used to determine the property’s terminal value. The authors noted, as had earlier studies, that probabilistic simulation results depended heavily on the quality of input parameter estimates and that limited statistical knowledge by the end user prohibited usage of the technique.

One of the more recent research endeavors to investigate the use of pro forma DCF analysis and simulation was produced by Foster and Lee (2009). The authors reviewed multiple real estate development projects in the New England area from 2001-2007 and compared ex post returns to proposed ex ante returns. They found that realized ex post returns were approximately 12% lower than predicted ex ante returns. To test their hypothesis of whether the spread between ex post and ex ante returns could be reduced using Monte Carlo simulation, the authors recreated ex ante pro forma returns using MCS. They found that MCS was beneficial in uncovering sensitive input parameter assumptions, such as the timing of cash flows and hard or soft construction estimates. However, this required the developer to define input probability distributions for each non-deterministic parameter across a myriad of market and submarket situations, which ultimately limited practical usage of the technique. Indeed, the authors’ survey of development participants found that 70% of the respondents had very limited knowledge of simulation, and of that percentage, none had actually used it as an add-on to more traditional DCF valuation analysis, such as sensitivity and scenario analysis.

Farragher and Savage (2008) conducted a recent survey of real estate institutional and private investors to determine what types of decision-making processes they used when making real estate investment decisions. Out of the 180 investment officers replying to the survey, only 55% of the institutional investors and 53% of the private investors considered any type of risk assessment when analyzing investment deals. The most frequently used techniques included sensitivity analysis, scenario analysis, breakeven analysis and debt coverage ratios. The findings showed that only 2% of investors used probabilistic techniques, such as Monte Carlo simulations in their analysis. Metrics used in making investment decisions included first year or going-in measures of equity before tax cash flows (cash-on-cash), equity dividend rate, and overall holding period metrics.

\footnote{In retrospect, this is the primary reason they chose to simplify the discussion to only year-end cash flow and a single reversion value. The authors avoid the discussion of risks associated with multiple input parameters and the difficult realization of validating the data’s integrity.}

\footnote{The authors use Paris France real estate indexes for pricing datasets.}
including internal rate of return (IRR) and net present value (NPV). The authors compared their results to a similar study conducted in 1996 by Farragher and Kleiman. The comparisons revealed little had changed in the investment decision process since that time. The authors noted the obvious need for real estate investment companies to more fully assess quantitative risk in the decision making process. Such observations should translate into analytical tools and courses that facilitate the learning and decision processes related to modeling and risk analysis.

LITERATURE REVIEW OF EXISTING COMMERCIAL REAL ESTATE SOFTWARE PACKAGES

A complete literature review would be incomplete without some discussion of commercially available real estate investment programs. Many vendors exist in this space and the following discussion summarizes the attributes of several major providers. Argus Valuation DCF™ is probably the most widely used program in academia and used extensively by commercial real estate analysts and appraisers. Argus provides an extensive suite of tools including property cash flow analysis, investment valuation metrics, leasing analysis, rent rolls, executive dashboards, reports, import and export interface functionality, risk analysis and much more. One appealing attribute of the program is its ability to analyze real estate assets at the portfolio level. Such capabilities allow the analyst to run micro or macro sensitivity analysis over the entire real estate portfolio. Many commercial programs lack this portfolio aggregation capability. Other software providers offer similar functionality, yet not as extensive as Argus. A sample of several common programs include: planEASE, Yardi, RealData, REALBENCH, CREmodel, Investment Analyst, and REIWISE4.

Each of the aforementioned commercial applications provides superior advantages over simple manual calculator point estimates. However, the cost to run such programs is a concern for most students in undergraduate real estate investment courses. With prices ranging from $350-$3,500 per seat for a temporary license, an argument can be made that a simple Excel Visual Basic model, vertically aligned to address real estate valuation, would be more practical and cost efficient. Likewise, the ability to assess return risk is absent from all the packages. Appendix A lists each company along with a hyperlink to the company’s website.

Several major themes are apparent from reviewing the available literature. (1) Spreadsheet pro forma analysis and the use of discounted cash flow techniques are widely used in real estate investment valuations; (2) risk assessment of real estate investments requires both quantitative and qualitative analysis; (3) quantitative modeling will never fully displace decisions based on sound fundamental, yet possibly subjective, business rationales; (4) and, a lack of advanced statistical training by real estate investors, along with heterogeneous real estate markets and minimal modeling tools, makes more advanced probabilistic risk analysis less viable. Given these documented observations, the model designed, constructed and explained in this paper addresses these concerns. The primary venue for the tool aligns closely with users or students in an introductory real estate investment course.

MODEL DESCRIPTION AND DESIGN

This section describes the model created to address the concerns revealed in the literature review. First, the overall model framework and layout are explained; second, a deterministic mathematical representation of the model is developed and discussed; third, a simple working example is provided throughout the discussion to explain how the model incorporates multiple user supplied real estate parameters and variables and produces risk versus reward estimates for going-in return on equity (ROE) and holding period internal rate of returns (IRR). A final discussion is provided to show how Monte Carlo simulation can be eventually incorporated into the model, albeit with all the added complications and requirements presented in the literature review.5

The model allows students to simulate and test multiple real estate investment assumptions while varying the range of the input variable combinations, such as rent, operational expenses, debt and equity-risk premiums. The number of algorithmically controlled input variables is limited to only three, while all remaining model parameters are held constant during the simulation process. Meredith, Shafer & Turbin (2002) stress the rationale for keeping model variables, whenever possible, to a minimal number and to those critical to the application. This is especially true for models built around simulation analysis of multiple inputs. As more parameters are added, the garbage-in garbage-out (GIGO) issue becomes a self fulfilling process. Figure 1 provides a high level layout of the model.

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4 Many of these software applications run on top of Excel and have Excel or Visual Basic code base.
5 As we will discuss later, and as noted in the literature review, Monte Carlo simulation requires considerable understanding of inter-variable relationships and correlations between the modeling inputs.
Figure 1: Model Layout

Using the input screen, users can insert or select all real estate parameters or variables used in the modeling process. Appendix D provides a graphical view of the input screen along with each possible variable and parameter, while Appendix B lists and defines each parameter and variable separately. To distinguish parameters from variables, dark cells denote variable inputs that can change during the simulation process, and yellow cells represent parameter inputs. Parameters are held constant during each simulation process while dynamic variables change based on the user’s desired range for the variable. In order to minimize model complexity, the number of algorithmically controlled dynamic variables is limited to only three out of the possible seven available. Dynamic variables include: rental income, property price, capital expenditures, operating expenditures, loan-to-value (LTV), debt rate and equity-risk premium. For example, the user may select a combination of rental income, debt rate and LTV as the three dynamic variables. Each would serve as the designated dynamic inputs for the simulation process. The operational semantics and how each variable impacts the model will be explained in the ROE-simulation screen below.

Second tier model screens consist of pro-forma income statement, pro-forma cash flow statement, mortgage schedule, operational expenditures and capital expenditures. The pro forma income and cash flow statements generate traditional real estate metrics such as gross rental income, vacancy rates, expense reimbursements, effective gross income, operating expenses, net operating income (NOI), taxes, and equity return before/after taxes over a user specified annualized holding period. Ex Ante discounted cash flow (DCF) estimates for IRR, NPV and modified internal rate of return (MIRR) are also generated in the cash flow pro forma.

Capital (CAPx) and operational (OPx) screens allow the user to specify year-over-year capital and operating expenditures. Although per-period growth rates for OPx and CAPx can be specified directly in the input screen, unique fixed and variable expenditure estimates can be inserted directly into each individual schedule providing a more granular view of property expenditures. For example, operational and capital expenditures may be a key consideration when purchasing an older property that requires considerable rehabbing costs.

The mortgage screen provides a mortgage and amortization schedule based on the user supplied inputs of loan amount, loan term, and interest rate. Generated outputs include: annual breakouts for per-period interest and principle payments; cumulative interest and principle payments; total annual and monthly payments; and the holding period mortgage constant. The mortgage schedule is standardized for 10-year periods; however, users can override the holding period for shorter or longer term limits.

Aggregating the results from the intermediate screens, the last tier of screens consist of financial real estate valuation metrics, reversion estimates, simulated risk verses reward results and a future module for Monte Carlo simulation results. Deterministic point estimate valuations include those currently found in many popular investment texts (Brueggeman and Fisher, 2011)

---

6 Since the model is based on Excel, other metrics can be easily added by the instructor or user.
7 Appendix ___ provides a list of all financial real estate metrics used in the model.
8 Excel for calculating the mortgage constant: PMT(rate,nper,pv,fv,type) where pv=-1, fv=0.
A Student Centered Model for Analyzing Real Estate Investment Return & Risk using Algorithmic Discounted Cash Flow Pro Forma Simulation Analysis

(Geltner, Miller, Clayton and Eichholtz, 2007). Specific point estimates include gross rent multiplier (GRM), net operating income multiplier (NOI), capitalization rate (Cap Rate), net-rent ratio, property free cash flow, before and after tax cash-on-cash return, debt coverage ratio, tax coverage ratio, loan-to-value ratio, rental cash flow per square foot and renter’s cost per square foot.

To incorporate the possibility of a property sale before the end of the holding period, a terminal value or reversion screen allows users to test different property holding periods. This functionality allows students to quickly assess alternative income and terminal value DCF return scenarios. Cash-on-cash calculations are made net of all debt-balance payoffs and capital gains taxes. Indeed, one of the key features allows the student to analyze various IRS requirements for capital gains and depreciation recapture taxes.

DERIVATION OF MODEL OUTPUTS

Before examining the simulation design, this section provides a brief description and derivation of the deterministic equation incorporated into the model\(^9\). The primary model equations are highlighted and intermediate point estimate equations can be found in Appendix E. Many real estate investment texts (Brueggeman and Fisher, 2011), (Geltner, Miller, Clayton and Eichholtz, 2007), (Ling and Archer, 2010) describe similar DCF-based measures in their analysis of real estate valuation; here, we focus primarily on equity after-tax cash flow (EATCF) estimates, while further reading is left to the many texts available on the market. The per-period equity after-tax cash flow (EATCF\(_t\)), sometimes referred to as the equity investor’s bottom line, can be written as:

\[
EATCF_t = [GR_t - VAC_t - ExpR_t - OPx_t - PrVL_t(\sigma) - DS_t] (1 - Tx) \tag{1}
\]

where

\[
\begin{align*}
EATCF_t & = \text{Annual after tax cash flow to the equity investor at time } t \\
GR_t & = \text{Gross rental income per year at time } t \\
PrVL_t & = \text{Property value at time } t \\
VAC_t & = \text{Vacancy rates at time } t \\
ExpR_t & = \text{Annual expense reimbursements at time } t \\
OPx_t & = \text{Annual fixed and variable operating expenses at time } t \\
\sigma & = \text{Annual capital expenditure rate} \\
DS_t & = \text{Annual debt service at time } t^{10} \\
Tx & = \text{Equity Investor’s Income Tax Rate}
\end{align*}
\]

If for each subsequent period, we model a user supplied compounding growth rate for rents, operating expenses and a per-period allocation to capital expenditures, the EATCF equation for each subsequent year now becomes:

\[
EATCF_{t=2,3,4,\ldots,n} = [GR_{t-1}(1 + \lambda) - VAC_t - ExpR_t - OPx_{t-1}(1 + \rho) - PrVL_t(\sigma) - DS_t] (1 - Tx) \tag{2}
\]

where

\[
\begin{align*}
\lambda & = \text{Percentage annual increase or decrease in rents} \\
\rho & = \text{Percentage annual increase or decrease in operating expenses} \\
\sigma & = \text{Percentage annual capital expenditure rate}
\end{align*}
\]

At the end of the holding period, time \(T\), we assume the property is sold and the terminal or reversion value for the property becomes:

\[
\text{Terminal Value}_T = PrP(1 + g)^T - SE - MG_T - Captx_T \tag{3}
\]

\(^9\) For the sake of simplicity and brevity, only the primary model equations are shown and discussed. Details for each intermediate parameter or variable (input and output) can be found in Appendix C.

\(^{10}\) See appendix ___ for the debt service equation.
where

\[
\text{Terminal Value}_T = \text{The terminal value of the property when sold at the end of the holding period, } T \\
PrP = \text{Initial, } t=0, \text{ price paid for the property} \\
T = \text{Holding period for the property} \\
SE = \text{One time selling expenses, e.g., broker and legal fees, etc.} \\
g = \text{Annual growth or decline for the property value} \\
MG_T = \text{Mortgage balance on the property at period } T \\
\text{CAPTx}_T = \text{Tax on accumulated depreciation and capital gains at period } T
\]

With the model valuation estimates now defined for year-over-year ex-ante equity cash flows and terminal value, the equity net present value (EATCFNPV) estimate of all cash flows can be calculated over the holding period as follows:

\[
\text{EATCFNPV}_{\text{ex-ante}} = \sum_{t=1}^{T} \left[ \left( \frac{[\text{Ct} - (1+\lambda) - \text{MG}_T - \text{CAPTx}_T - \text{MG}_T - \text{SE}]}{[1+(r_f+\rho_p)]^t} \right) + \text{PrP}(1+\rho_p)^{-T} \cdot \text{MG}_T - \text{CAPTx}_T - [(1 - \text{LTV}) \text{PrP}] \right]
\]

\[
(4)
\]

where

\[
\text{EATCFNPV} = \text{Net present value of all annualized cash flows and terminal cash flow} \\
r_f = \text{Blended risk free treasury rate of 10-year bonds} \\
\rho_p = \text{Property equity risk premium} \\
\text{LTV} = \text{Going-in loan to value ratio} \\
\text{PrP} = \text{Price paid for the property}
\]

The ex ante risk free rate of return \(r_f\) and a risk premium \(\rho_p\) above the risk free rate are combined to create an overall ex ante discount rate \((r_f + \rho_p)\). Users can adjust the combination of rates to reflect the required IRR from the investment. For example, blended 10-year US Treasury Bond rates could be used as the risk free rate over ten-year holding periods, and a risk premium could reflect attributes unique to each property such as demographic or physical conditions, e.g., age, location, size or tenant demand. To that end, discovering the required IRR for a property implies some degree of subjective judgment and relies on the experience, knowledge and skills of the individual real-estate investor (Ling & Archer, 2010).

It should be noted in this instance, the risk premium can be selected as a dynamic variable; thus, if selected, the user can specify a risk premium range with discrete probability estimates for each quintile. Again, the choice of dynamic variables is user specified and limited to only three for each modeling scenario.

**Simulation Process**

This section describes the return on equity (ROE) simulation screen and how it generates the risk verses return tradeoffs for the three dynamic input variables and parameter constants. To achieve this objective, a 3x3 array of IRR point estimates stores the results. The simulation algorithm retrieves the specified dynamic variables and cycles through each variable’s user-selected range. Using our running example, the user selects rent, debt rate and LTV as the three dynamic variables for simulation. The model’s algorithm uses the remaining input parameters and preexisting pro forma statement screens and iterates through each combination of dynamic variables creating a 3x3 array of equity IRR point estimates for the holding period. A graphical visualization of the simulation process is shown in Figure 2 and Appendix I provides an actual view of the user’s screen with accompanying outputs.
Each equity IRR estimate represents a unique combination of going-in pro forma rental income, debt rate and LTV totaling to 210 IRR point estimates around a user supplied range for each dynamic variable. To minimize functional complexity, the first variable from the three chosen is assigned a discrete probability distribution. Using our example, if the user selects rent as the first chosen dynamic variable in the selection, rental income is broken into quintiles with the median quintile serving as the user’s most likely rent estimate. The user is allowed to assign probability and rent range percentages above and below the estimate for each rental quintile.

Note that the model does not attempt to predict the numerous inter-correlations and relationships among variables during the forecasted holding period. It is well documented (Pyhrr, 1973; Wofford, 1978; Weaver & Michelson, 2003; Farragher & Savage, 2008) that such details are difficult to accurately estimate, especially for students in an introductory real estate investing course. Instead, qualitative information can be used that reflects the user’s specific real estate market and sub market dataset.

To further visualize the tradeoff between IRR return and risk, the model calculates and displays the IRR’s coefficient of variation\textsuperscript{11} for each range variable. For example, using the previous dynamic variable selection of rents, debt rate and LTV, a coefficient of variation would be calculated for each unique combination of debt and LTV across the rent range and probabilities for those rents. In this case, the user could easily visualize how changes in going-in financial leverage, or LTV, impact equity IRR returns, along with the associated standard deviation (risk) around such changes. A typical simulation run for such a scenario is shown in Figure 3.

\textsuperscript{11} The coefficient of variation is defined as the ratio of standard deviation over the expected mean return.
Figure 3: IRR Coefficient of Variation Risk to Reward Tradeoff

The going-in cash-on-cash return or the equity investors’ after-tax cash flow return (EATCF ROE) is a fundamental real estate investment metric; the model produces an additional $2\times2$ matrix of first year EATCF ROE point estimates for the first two selected dynamic variables. Similar to the IRR holding period array, the $2\times2$ matrix uses the first year operating results and produces simulated ex ante, going-in equity return for each combination of variable inputs. Again using our initial scenario of rent and debt rate, the model would use the first year pro forma results and produce a $2\times2$ matrix of EATCF ROE returns for each combination of debt rate across the selected rent range. This tabular output provides an initial going-in view of investor equity return across alternative mortgage financing scenarios. This is especially useful if the equity investor is using significant financial leverage accompanied with a variable rate mortgage. Students can easily visualize the impact of interest rate adjustments, and more importantly, how such adjustments impact the equity investor’s return. As with the $3\times3$ array, tabular and graphical displays show details for each debt and rent combination.

MONTE CARLO SIMULATION & CONTINUOUS PROBABILITY DISTRIBUTIONS

It is obvious from early literature the benefit of incorporating Monte Carlo simulation into real estate investment decisions, at least from an academic viewpoint; however, practical implementation of the technique varies widely across the real estate industry (Farragher & Savage, 2008; Kelliher & Mahoney, 2000). Such variations are understandable given the controlled environment of the academician and the constantly changing world of the practitioner. The following discussion extends our discrete probability model and describes how Monte Carlo (MCS) simulation, if used incorrectly, produces widely different results based on varying input parameter assumptions.

Point estimates calculations with accompanying probability distributions provide greater insight into return estimate volatility than do simple point estimates alone. However, MCS provides even greater ex ante return volatility visibility. MCS allows the user to simultaneously select multiple input parameters, assign a continuous probability distribution to each parameter and examine thousands of possible outcomes with a probability distribution around the most likely outcome. Several commercially available programs, such as @Risk and Crystal Ball, easily integrate into MS Excel making software usage trivial. The more pertinent issue, however, is the statistical knowledge needed by the student to correctly utilize the tool (Weaver and Michelson, 2003, 2004)

To illustrate the possible confusion of selecting appropriate probability distributions and correlations among inputs, we continue our earlier example and use rent and capital expenditures as dynamic-variable inputs into the model. Instead of using our resident (programmed) discrete simulation algorithm, we now swap the dynamic variables into the Excel add-in program @Risk. Before starting the simulation, unique probability distributions must be assigned to each variable; for this instance, we select a continuous triangular distribution for both variables. Next, assume rent and capital expenditure rates are negatively correlated, $r (498) = -.6$, $p < .1$. This assumption is based on a priori that older properties may require higher capital

---

12 Triangular distributions use a minimal, most likely and maximum probability distribution, similar to a worse case, most likely case best case “what-if” scenario. Thus many analysts may find such distributions a good starting point for assigning probability inputs.
expenditures but generate lower annual rental income. After setting the input variable distributions and correlations, 500 simulated iterations are run producing parametric and nonparametric statistical data for the simulation. The EATCF_{NPV} results and descriptive statistics are shown in figure 4.1.

Now assume for the same example, rent and capital expenditures follow a uniform distribution with no correlation between the variables. Running the simulation and holding all other parameters the same as with the triangular simulation, results in the EATCF_{NPV} values shown in figure 4.2

Results from the two simulations reveal very different outcomes. The standard deviation for EATCF_{NPV} using a triangular set of distributions resulted in a dispersion of $14,501, while the standard deviation for the uniform distributions with non-correlated dynamic variables resulted in a dispersion of $3,221. Also, the simulation using triangular distributions showed that 5% of the time, EATCF_{NPV} was below -$4,384, while the uniform distribution had a minimum EATCF_{NPV} of $12,169. Clearly, this simple analogy highlights the importance of properly selecting input parameter distributions, their interdependencies and correlations. It also appears to validate the concerns highlighted from the review of literature regarding the same problem. Selecting the wrong modeling inputs provides no more accuracy than a naïve model based on subjective rationale, yet renders the illusion of possibly being more accurate.

CONCLUSIONS

The simulation model described in this paper enables students to assess real estate investment return outcomes using several approaches, including individual pro forma based point estimates and simulated point estimates with accompanying probabilistic ranges. By utilizing a student-friendly Excel based architecture, users can easily transition from point estimate calculations to more difficult concepts such as the probabilistic outcomes. Limiting the number of possible simulation variables to seven minimizes model complexity and allows users to focus uniquely on a manageable set of real estate related variables. As students become comfortable with simple discrete probabilistic simulation analysis, more advanced parameterized Monte Carlo simulation analysis can be introduced. Prerequisites for using the model include a basic foundation in real estate finance, such as those similarly found in many undergraduate real estate investment courses.

Existing literature reveals that professionals seldom use more than simple scenario “what-if” analysis when making real estate investment decisions (Farragher and Savage, 2008). The literature also reveals that many real estate investors are unfamiliar with more advanced techniques such as Monte Carlo simulation (Foster & Lee, 2009). Combine these issues with the fact that real estate markets are highly segmented requiring considerable data extraction costs, and it is easy to understand why more advanced risk analysis has been sparingly used by professionals. Fortunately, companies such as CoStar®, LoopNet®, CoreLogic® and REIS now provide centralized data repositories covering numerous real estate market and submarket locations. Such access mitigates many of the cost concerns. These companies are also leveraging the emergence of cloud repositories and cheap end-user devices to make data access even cheaper. Indeed, the technological limitations confronted by Pyhrr (1973) during his initial research into DSS support for real estate investment volatility now seem trivial.

The model presented in this paper fits nicely between simple static pro forma statement analysis and more advanced Monte Carlo simulation. It is envisioned that such a program will help stimulate a more deliberate discussion and understanding of real estate return volatility within the classroom, thus serving as platform that encourages the adoption of more advanced risk analytics in the real estate profession. More importantly, the model is absolutely free from the instructor’s website:
http://home.barton.edu/odrive/rlee/realestate_modeling. Future extensions include additional functionally to assist students in bridging the gap between simple simulated “what-if” analysis and Monte Carlo simulation.

For more information, or to obtain a copy, please feel free to contact the author at rlee@barton.edu.

REFERENCES


### Commercial Real Estate Valuation Software Vendors

<table>
<thead>
<tr>
<th>Software Vendor</th>
<th>Web Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>CREModel</td>
<td><a href="http://www.cremodel.com/?gclid=C1nQvLLnjaUCFRBL2godhGLcPA">http://www.cremodel.com/?gclid=C1nQvLLnjaUCFRBL2godhGLcPA</a></td>
</tr>
<tr>
<td>REALBENCH</td>
<td><a href="http://www.realbench.net/">http://www.realbench.net/</a></td>
</tr>
</tbody>
</table>
## APPENDIX B

### Model Input Parameters and Dynamic Variables

<table>
<thead>
<tr>
<th>Inputs Parameters (User Defined)</th>
<th>Input Derivation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross Rent (GR)</strong></td>
<td>The initial going-in rent for the property</td>
</tr>
<tr>
<td><strong>Property Price (P)</strong></td>
<td>Price paid for the property</td>
</tr>
<tr>
<td><strong>Vacancy Rate (VR)</strong></td>
<td>The annual percentage vacancy rate for the property</td>
</tr>
<tr>
<td><strong>Building Appraised Property Tax Value</strong></td>
<td>Taxing municipally appraised tax value for the property structure</td>
</tr>
<tr>
<td><strong>Land Appraised Value</strong></td>
<td>Taxing municipally appraised value of land</td>
</tr>
<tr>
<td><strong>Property Tax Rate</strong></td>
<td>Tax rate per $100 assessed on the property</td>
</tr>
<tr>
<td><strong>Rental Growth (Decline) Rate</strong></td>
<td>The implied or assumed ex-ante growth rate of rental income</td>
</tr>
<tr>
<td><strong>Property Growth (Decline) Rate</strong></td>
<td>The implied or assumed ex-ante property appreciation rate (or decrease)</td>
</tr>
<tr>
<td><strong>Years Depreciation</strong></td>
<td>Number of years the property is depreciated on a straight-line basis</td>
</tr>
<tr>
<td><strong>Going in yearly Insurance Premium</strong></td>
<td>The annual property insurance premium(s) on the property</td>
</tr>
<tr>
<td><strong>Yearly Insurance Premium Rate increase (decline)</strong></td>
<td>Annual increase or decrease in insurance premiums</td>
</tr>
<tr>
<td><strong>Annual Debt Service (DS)</strong></td>
<td>Annual debt service = [ M = \frac{P \times ((1 + rd)^n - 1)}{1 - (1 + rd)^n} ] where ( P ) = principle amount, ( rd ) is the per-period interest rate and ( n ) is the number of periods</td>
</tr>
<tr>
<td><strong>Going in Loan-to-Value Ratio (LTV)</strong></td>
<td>The user specified ratio of debt to value</td>
</tr>
<tr>
<td><strong>Rate of Debt (rd)</strong></td>
<td>The user specified cost of debt</td>
</tr>
<tr>
<td><strong>Capital Expenditure Rate per year</strong></td>
<td>The user specified annual rate of capital expenditures as a percentage of property value</td>
</tr>
<tr>
<td><strong>Long Term Capital Gains Tax Rate</strong></td>
<td>Investor’s unique long term capital gains tax rate as specified by IRS guidelines</td>
</tr>
<tr>
<td><strong>Short Term Capital Gains Tax Rate</strong></td>
<td>Investor’s unique short term capital gains tax rate as specified by IRS guidelines</td>
</tr>
<tr>
<td><strong>Ordinary Income Tax Rate</strong></td>
<td>Investor’s ordinary income tax rate as specified by IRS guidelines</td>
</tr>
<tr>
<td><strong>Reinvestment Rate (MIRR)</strong></td>
<td>Modified internal rate of return</td>
</tr>
<tr>
<td><strong>Risk free of 10-Year T-bonds</strong></td>
<td>( rf = \text{risk free rate on equivalent holding period Treasury Securities} )</td>
</tr>
<tr>
<td><strong>Equity risk Premium</strong></td>
<td>( rp = \text{equity risk premium above the investor’s risk free rate (rf)} )</td>
</tr>
</tbody>
</table>
## APPENDIX C

### Model Output Point Estimates & Derivations

<table>
<thead>
<tr>
<th>Point Estimate</th>
<th>Derivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Operating Income (NOI)</td>
<td>NOI = net rental revenue – total expenses</td>
</tr>
<tr>
<td>Capitalization Rate</td>
<td>NOI / Equity Investment</td>
</tr>
<tr>
<td>Property Before Tax Cash Flow (PBTCF)</td>
<td>PBTCF = Property Free Cash Flow = NOI – Capital Expenses</td>
</tr>
<tr>
<td>Equity Before Tax Cash Flow (EBTCF)</td>
<td>EBTCF = PBTCF – Debt Service</td>
</tr>
<tr>
<td>Equity After Tax Cash Flow (EATCF)</td>
<td>EATCF = EBTCF – Equity Investor Taxes</td>
</tr>
<tr>
<td>Cash-on-Cash Return before tax</td>
<td>EATCF / Equity Investment</td>
</tr>
<tr>
<td>Cash-on-Cash Return after tax</td>
<td>EATCF / Equity Investment</td>
</tr>
<tr>
<td>Equity Net Present Value (NPV\textsubscript{equity})</td>
<td>NPV\textsubscript{equity} = (Sum of per-period EATCFs + Net Reversion) discounted at risk free rate (rf) plus risk premium (rp)</td>
</tr>
<tr>
<td>Coefficient of Variation (CoV)</td>
<td>CoV = (Weighted Average Standard Deviation of IRR\textsubscript{equity}) / Weighted Average IRR\textsubscript{equity}Return</td>
</tr>
<tr>
<td>Equity Internal Rate of Return</td>
<td>IRR that sets NPV = 0</td>
</tr>
<tr>
<td>Equity Modified Internal Rate of Return</td>
<td>$\text{MIRR} = \frac{\sum \text{PV of positive cash flows at equity reinvestment rate}}{\sum \text{PV of negative cash flows at equity cost of capital}} - 1$</td>
</tr>
<tr>
<td>Debt Coverage Ratio</td>
<td>NOI / Debt Service</td>
</tr>
<tr>
<td>Debt &amp; Tax Coverage Ratio</td>
<td>(NOI + Property Tax) / (Debt Service + Property Tax)</td>
</tr>
<tr>
<td>Loan to Value Ratio (LTV)</td>
<td>Mortgage Balance / Property Value</td>
</tr>
<tr>
<td>Gross Rent Multiplier (GRM)</td>
<td>Property Price / Rental Revenue</td>
</tr>
<tr>
<td>Net Operating Income Multiplier (NOI Multiplier)</td>
<td>Property Price / NOI</td>
</tr>
<tr>
<td>Equity cash flow per Sq. ft.</td>
<td>EATCF / Property Square Footage</td>
</tr>
<tr>
<td>Renter’s Cost per Square Foot</td>
<td>Net Rental Revenue / Property Square Footage</td>
</tr>
</tbody>
</table>

---

13 All metrics are on an annualized basis.
## APPENDIX D

### Model Input Screen

<table>
<thead>
<tr>
<th>Property Data</th>
<th>Current Date</th>
<th>5/1/2011</th>
<th>5/15/2015</th>
<th>Lot Size</th>
<th>Acreage</th>
<th>Holding Period (yrs)</th>
<th>$/Ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Square Footage (ft)</td>
<td>13,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Rentable Value</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at Rev (yrs)</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Vacant Rent (Vacant Rent Rate)</td>
<td>PG (1.5%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Management Fee Rate</td>
<td>3%</td>
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<td></td>
<td></td>
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<td>Tax Appraisal Value</td>
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<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Input Data</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
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</thead>
<tbody>
<tr>
<td>Total (Sale) Property Price</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Price</td>
<td>$1,350,000.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Land (Appraised Value)</td>
<td>$300,000.00</td>
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<td></td>
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<td></td>
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<tr>
<td>Initial Property Taxes</td>
<td>$196,000.00</td>
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<td></td>
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<tr>
<td>Annual Property Appreciation Rate</td>
<td>1.0%</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Enclave (Meters) (Acres) Rate per year</td>
<td>1.0%</td>
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<tr>
<td>Annual Operating Expenses</td>
<td>$1,250.20</td>
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<td></td>
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<tr>
<td>Available Space (1°FY)</td>
<td>$1,250.20</td>
<td></td>
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<td></td>
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<tr>
<td>Leasing Rate (%)</td>
<td>9.00%</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Rate</td>
<td>$195,000.00</td>
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<td>Mortgage Loan Balance (per month)</td>
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<tr>
<td>Capital Expenditure Funds Per Year</td>
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<td>Property Taxes (per $100,000)</td>
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<td>Annual Insurance Premiums</td>
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<tr>
<td>Legal &amp; Other (L&amp;O) Costs</td>
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<td>Average Rate</td>
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<tr>
<td>Initial Investment &amp; Capital Improvements</td>
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<td>Property (PM &amp; B)</td>
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<tr>
<td>Land</td>
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<tr>
<td>Total Costs of Closing</td>
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<tr>
<td>Annual &amp; Capping Annual Capital Improvements</td>
<td>$495,000.00</td>
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<tr>
<td>Total Initial Capital Costs &amp; Capping Costs Values</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Initial Startup Operating Expenses</td>
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<td></td>
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</tr>
<tr>
<td>Total Initial Cash Costs (Capital &amp; Operating)</td>
<td>$205,000.00</td>
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<td></td>
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<tr>
<td>Cash (Equity)</td>
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<tr>
<td>Loan Balance (Cash Balance)</td>
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<td></td>
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<tr>
<td>Cost of Debt</td>
<td>0.00%</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Municipal Tax Rate (Cash Income per $1000)</td>
<td>3.0%</td>
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<tr>
<td>Total Tax Treasury Yield (%)</td>
<td>2.00%</td>
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<td></td>
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<td></td>
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<tr>
<td>Interest (Earnings) (%/Year)</td>
<td>6.00%</td>
<td></td>
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</table>
### APPENDIX E

#### Income and Cash Flow Pro Forma Output Screens

**Proforma Income Analysis**

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Revenue</td>
<td>Loss</td>
<td>Interest</td>
<td>Depreciation</td>
<td>Rent</td>
<td>Operating Expenses</td>
<td>Tax</td>
<td>Net Cash Flow</td>
</tr>
<tr>
<td></td>
<td>$26,120</td>
<td>$5,000</td>
<td>$2,100</td>
<td>$1,000</td>
<td>$10,000</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$9,080</td>
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</table>

**Loss of Depreciation**

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$10,000</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$9,080</td>
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</table>

**Net Cash Flow from Operations**

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$10,000</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$9,080</td>
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</tbody>
</table>

**Net Income**

<table>
<thead>
<tr>
<th>Year</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$10,000</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$9,080</td>
</tr>
</tbody>
</table>

**Proforma Cash Flow Analysis**

<table>
<thead>
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<th>Year</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Revenue</td>
<td>Loss</td>
<td>Interest</td>
<td>Depreciation</td>
<td>Rent</td>
<td>Operating Expenses</td>
<td>Tax</td>
<td>Net Cash Flow</td>
</tr>
<tr>
<td></td>
<td>$26,120</td>
<td>$5,000</td>
<td>$2,100</td>
<td>$1,000</td>
<td>$10,000</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$9,080</td>
</tr>
</tbody>
</table>

**Real Estate Metrics Output Screen**

**APPENDIX F**

#### Real Estate Metrics Output Screen

**Real Estate Ratios**

<table>
<thead>
<tr>
<th></th>
<th>Monthly Gross Rent Multiplier</th>
<th>Annual Gross Rent Multiplier</th>
<th>Gross Rental Income Per Month</th>
<th>Cap Rate</th>
<th>Debt Service Coverage</th>
<th>Debt to Equity Ratio</th>
<th>Debt to Value Ratio</th>
<th>Debt to Appraised Value</th>
<th>NOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>$84.40</td>
<td>$61.02</td>
<td>$83.04</td>
<td>13.20</td>
<td>2.12</td>
<td>0.36</td>
<td>0.43</td>
<td>0.57</td>
<td>11.73</td>
</tr>
</tbody>
</table>

**After-Tax Return on Equity (ATRO)**

| Year   | 16.75%                        | 15.02%                        | 13.50%                        | 12.00%   | 10.50%               | 9.00%               | 8.50%                | 8.00%                 |

**Net Operating Income (NOI)**

| Year   | $1,625                        | $1,500                        | $1,375                        | $1,250   | $1,125               | $1,000              | $975                 | $950                  |

**Net Rent**

| Year   | $1,625                        | $1,500                        | $1,375                        | $1,250   | $1,125               | $1,000              | $975                 | $950                  |

**Net Operating Income (NOI)**

| Year   | $1,625                        | $1,500                        | $1,375                        | $1,250   | $1,125               | $1,000              | $975                 | $950                  |

**NOI**

| Year   | $1,625                        | $1,500                        | $1,375                        | $1,250   | $1,125               | $1,000              | $975                 | $950                  |

**Cost Per Square Foot**

| Year   | 2,125                         | 2,000                         | 1,875                         | 1,750    | 1,625                | 1,500               | 1,375                | 1,250                 |

**New Construction Cost per Square Foot**

| Year   | $1,625                        | $1,500                        | $1,375                        | $1,250   | $1,125               | $1,000              | $975                 | $950                  |

**NOI**

| Year   | $1,625                        | $1,500                        | $1,375                        | $1,250   | $1,125               | $1,000              | $975                 | $950                  |

**Total NOI**

| Year   | $1,625                        | $1,500                        | $1,375                        | $1,250   | $1,125               | $1,000              | $975                 | $950                  |

**Investment Ratio**

| Year   | $1,625                        | $1,500                        | $1,375                        | $1,250   | $1,125               | $1,000              | $975                 | $950                  |
# APPENDIX G

## Mortgage Output Screen

### Mortgage Worksheet

<table>
<thead>
<tr>
<th>Loan Term in Years</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Monthly Payments</td>
<td>122</td>
</tr>
<tr>
<td>Total Home Price with Rehab</td>
<td>$55,500.00</td>
</tr>
<tr>
<td>Down Payment</td>
<td>$20,750.00</td>
</tr>
<tr>
<td>Loan Amount</td>
<td>$20,750.00</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>2.75%</td>
</tr>
<tr>
<td>Payments</td>
<td>120</td>
</tr>
<tr>
<td>Mortgage Constant</td>
<td>0.10405</td>
</tr>
<tr>
<td>Total Payments</td>
<td>$(377.07)</td>
</tr>
<tr>
<td>Monthly</td>
<td>$(3,309.89)</td>
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</table>

### Annual Principle & Interest Breakouts

<table>
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<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Month</td>
<td>1</td>
<td>13</td>
<td>25</td>
<td>37</td>
<td>49</td>
<td>61</td>
<td>73</td>
<td>85</td>
<td>97</td>
<td>169</td>
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<tr>
<td>Ending Month</td>
<td>12</td>
<td>24</td>
<td>36</td>
<td>48</td>
<td>60</td>
<td>72</td>
<td>84</td>
<td>96</td>
<td>108</td>
<td>120</td>
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### Principle Balance

<table>
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<tr>
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<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning</td>
<td>$27,047.96</td>
<td>$24,239.68</td>
<td>$21,478.75</td>
<td>$18,693.96</td>
<td>$16,863.52</td>
<td>$15,079.67</td>
<td>$13,355.56</td>
<td>$11,780.58</td>
<td>$10,337.70</td>
<td>$9,014.53</td>
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<tr>
<td>Ending</td>
<td>$5,700.05</td>
<td>$5,061.40</td>
<td>$4,467.85</td>
<td>$3,923.43</td>
<td>$3,423.35</td>
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<td>$1,826.86</td>
<td>$1,514.60</td>
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### Annual Recurring Expenses Screen

### Recurring Annual Expenses

#### Fixed Expenses

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<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance (Property)</td>
<td>$900.00</td>
<td>$900.00</td>
<td>$948.09</td>
<td>$962.77</td>
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<td>Property Tax</td>
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<td>$2,740.00</td>
<td>$2,740.00</td>
<td>$2,740.00</td>
<td>$2,740.00</td>
<td>$2,740.00</td>
<td>$2,740.00</td>
<td>$2,740.00</td>
<td>$2,740.00</td>
</tr>
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<td>Advertising, Marketing &amp; Other Fees</td>
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<td>$30.00</td>
<td>$30.00</td>
<td>$30.00</td>
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<td>$30.00</td>
<td>$30.00</td>
<td>$30.00</td>
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<td>Real Estate Fees &amp; Expenses</td>
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<td>$1,150.85</td>
<td>$1,150.85</td>
<td>$1,150.85</td>
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<td>$1,150.85</td>
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<tr>
<td>Management Fee (% of rent)</td>
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<td>6%</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
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<td>6%</td>
<td>6%</td>
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<td>Pest Control</td>
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#### Variable Expenses

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<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel &amp; Fuel Expenses</td>
<td>$50.00</td>
<td>$50.00</td>
<td>$50.00</td>
<td>$50.00</td>
<td>$50.00</td>
<td>$50.00</td>
<td>$50.00</td>
<td>$50.00</td>
<td>$50.00</td>
<td>$50.00</td>
</tr>
<tr>
<td>Operational Repairs</td>
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<td>$154.53</td>
<td>$156.85</td>
<td>$159.20</td>
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<td>$163.96</td>
<td>$166.34</td>
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<td>Labor Expenses</td>
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<td>$100.00</td>
<td>$100.00</td>
<td>$100.00</td>
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<td>$10.00</td>
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<td>$10.00</td>
<td>$10.00</td>
<td>$10.00</td>
</tr>
<tr>
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<td>$10.00</td>
<td>$10.00</td>
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</tr>
<tr>
<td>Total</td>
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<td>$25.00</td>
<td>$25.00</td>
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<td>$25.00</td>
<td>$25.00</td>
<td>$25.00</td>
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</tbody>
</table>

### Total Recurring Expenses

<table>
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<tr>
<th>Item</th>
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<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Recurring Expenses</td>
<td>$3,025.00</td>
<td>$3,094.00</td>
<td>$4,105.34</td>
<td>$4,335.60</td>
<td>$4,429.40</td>
<td>$4,075.11</td>
<td>$4,151.94</td>
<td>$4,080.64</td>
<td>$4,178.05</td>
<td>$4,225.29</td>
</tr>
</tbody>
</table>
APPENDIX I

ROE and IRR Simulation and Output Results

![Simulation Graph](image-url)

- Expected Cash Flow - 1 year: $2,400.00
- Expected Cash Flow - 2 year: $2,400.00
- Expected Cash Flow - 3 year: $2,400.00
- Expected Cash Flow - 4 year: $2,400.00
- Expected Cash Flow - 5 year: $2,400.00
- Expected Cash Flow - 6 year: $2,400.00
- Expected Cash Flow - 7 year: $2,400.00
- Expected Cash Flow - 8 year: $2,400.00
- Expected Cash Flow - 9 year: $2,400.00
- Expected Cash Flow - 10 year: $2,400.00
- Expected Cash Flow - 11 year: $2,400.00
- Expected Cash Flow - 12 year: $2,400.00
- Expected Cash Flow - 13 year: $2,400.00
- Expected Cash Flow - 14 year: $2,400.00
- Expected Cash Flow - 15 year: $2,400.00
- Expected Cash Flow - 16 year: $2,400.00
- Expected Cash Flow - 17 year: $2,400.00
- Expected Cash Flow - 18 year: $2,400.00
- Expected Cash Flow - 19 year: $2,400.00
- Expected Cash Flow - 20 year: $2,400.00
- Expected Cash Flow - 21 year: $2,400.00
- Expected Cash Flow - 22 year: $2,400.00
- Expected Cash Flow - 23 year: $2,400.00
- Expected Cash Flow - 24 year: $2,400.00
- Expected Cash Flow - 25 year: $2,400.00
- Expected Cash Flow - 26 year: $2,400.00
- Expected Cash Flow - 27 year: $2,400.00
- Expected Cash Flow - 28 year: $2,400.00
- Expected Cash Flow - 29 year: $2,400.00
- Expected Cash Flow - 30 year: $2,400.00

- Cash Flow for different tenors and interest rates (5%):
  - 1 year: $2,400.00
  - 2 years: $2,400.00
  - 3 years: $2,400.00
  - 4 years: $2,400.00
  - 5 years: $2,400.00
  - 6 years: $2,400.00
  - 7 years: $2,400.00
  - 8 years: $2,400.00
  - 9 years: $2,400.00
  - 10 years: $2,400.00
  - 11 years: $2,400.00
  - 12 years: $2,400.00
  - 13 years: $2,400.00
  - 14 years: $2,400.00
  - 15 years: $2,400.00
  - 16 years: $2,400.00
  - 17 years: $2,400.00
  - 18 years: $2,400.00
  - 19 years: $2,400.00
  - 20 years: $2,400.00
  - 21 years: $2,400.00
  - 22 years: $2,400.00
  - 23 years: $2,400.00
  - 24 years: $2,400.00
  - 25 years: $2,400.00
  - 26 years: $2,400.00
  - 27 years: $2,400.00
  - 28 years: $2,400.00
  - 29 years: $2,400.00
  - 30 years: $2,400.00
# APPENDIX J

## Reversion Output Screen & Graphics

### In the Property Level (Y/N)

#### Variable Profitability

<table>
<thead>
<tr>
<th>Property Income</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Reversion</td>
<td>$110,000.00</td>
<td>$108,000.00</td>
<td>$106,000.00</td>
<td>$104,000.00</td>
<td>$102,000.00</td>
<td>$100,000.00</td>
<td>$98,000.00</td>
<td>$96,000.00</td>
<td>$94,000.00</td>
<td>$92,000.00</td>
</tr>
</tbody>
</table>

### Net Cash Flows

<table>
<thead>
<tr>
<th>Net Cash Flows</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cash Flow</td>
<td>$100,000.00</td>
<td>$98,000.00</td>
<td>$96,000.00</td>
<td>$94,000.00</td>
<td>$92,000.00</td>
<td>$90,000.00</td>
<td>$88,000.00</td>
<td>$86,000.00</td>
<td>$84,000.00</td>
<td>$82,000.00</td>
</tr>
</tbody>
</table>

### Annual Change in Present Value

<table>
<thead>
<tr>
<th>Annual Change</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Value</td>
<td>$100,000.00</td>
<td>$98,000.00</td>
<td>$96,000.00</td>
<td>$94,000.00</td>
<td>$92,000.00</td>
<td>$90,000.00</td>
<td>$88,000.00</td>
<td>$86,000.00</td>
<td>$84,000.00</td>
<td>$82,000.00</td>
</tr>
</tbody>
</table>

---

### Footnotes

1. The above numbers assume an initial cash investment of $90,000.00.
2. Initial Loan-to-Value Ratio: 70%
3. Property sale is based on end of year sale.
AN ANALYSIS OF COLLEGE STUDENTS’ CREDIT CARD USAGE

Manimoy Paul, James Nolan and Andrea Smith-Hunter
Siena College, USA

ABSTRACT
In the last decade, many college students have faced a number of financial challenges, including rising college costs, reduced financial aid and less financial assistance from parents and/or relatives who have their own financial crises to address. In response, college students have turned to credit cards as a means to pay for tuition, books, and other college related expenses for both their undergraduate and graduate degrees. The growth in credit card usage among college students has generated its share of concern that such escalating use will place the students at greater risk for high debt levels, as well as misuse of such cards. This paper pursued an in-depth analysis of college students’ financial positioning, as well as credit card usage with a unique caveat of presenting the results across gender lines. With the significant interest and growth in the number of college students using this financial means as an avenue of legitimate support, it is expected that the results from this study will greatly benefit college administrators, policy makers and most importantly college students alike in understanding the latter’s current financial situation.

Keywords: College Student, Credit Card, Financial Situation, Debt.

INTRODUCTION
College students have faced a number of challenges in the last decade. One primary challenge is the financing of their college education, as costs have risen to record levels and students have had to borrow more to finance this tertiary education. With fewer parents able or willing to cover this costs (Lyons and Hunt, 2003) they have had to seek innovative and sometimes risky methods to aid them in their financial debacle. The end results are that students have turned to credit cards to fill the gaps left by previously employed methods. This is turn has led to growing concern among college administrators and policy makers and the students themselves, as to the predicament such use might eventually lead to. This dire concern is not without merit. Statistically, it has been shown that college undergraduate credit card debt was $2,327 and that 40% of students had four or more credit card on average (Hayhoe et al, 2005). When combined with their student loan debt, the average debt level for freshmen was $3150, while for seniors it was $20,402 (Hayhoe et al, 2005). Students have cited financial debt as a major deterrent for not continuing on to graduate school after completing their undergraduate degree (Hayhoe et al, 2005).

The concern for college students and their credit card usage is also significant, since such young adults represent an important customer base for many organizations (Pirog and Roberts (2007) and their long term financial health can have a long lasting impact on a nation’s development and economy (Vivian. 2005). If everyone involved can understand the nature of college students’ credit card spending and the result on their long term credit rating, ability to spend in the future and overall financial education and responsibility, then it serves to improve an economy’s overall standing.

Research on credit card usage by college students could be characterized as being in a state of infancy, where the bulk of said research has taken place in the last decade, when attention started turning towards the students’ new financial predicament, with various investigations on how to address, curtail or solve it. The current paper seeks to make a significant contribution in that respect. In seeking to do so, it pursued an in-depth analysis of college students’ financial positioning, as well as credit card usage with a unique caveat of presenting the results across gender lines. With the significant interest and growth in the number of college students using this financial means as an avenue of legitimate support, It is expected that the results from this study will greatly benefit college administrators, policy makers and most importantly college students alike in understanding the latter’s current financial situation. The conceptual framework for this study drew on material from Dowd and Coury (2006), Pirog and Roberts (2007), Lyons (2007), as well as discussions and structural points from Cavus and Ibrahim (2009).

REVIEW OF RELATED LITERATURE
There are several perspectives in the literature on students’ credit card usage, as well as other financially at risk elements as related to college students, below is a comprehensive review of this literature.

According to a recent survey by Sallie Mae, the nation’s largest student lender, 84 percent of undergraduates have at least one credit card and 92 percent of them use credit cards to pay for college expenses (Field, 2009). In addition, the same study found
that on average, the said students had an average credit card balance of $3173 (Field, 2009). Further studies have revealed that college students’ reliance on credit cards has increased with the sluggish economy and the rising costs of college (Robb and Pinto, 2010; Palmer et al., 2001; Lyons, 2007). Earlier data which presented information by the Government Accountability Office (GAO) have suggested that college students’ credit cards were primarily being used to purchase books, supplies for school, food and clothing, and to a lesser extent, entertainment expenses (Robb and Pinto, 2010). Hypotheses from Robb and Pinto’s study looked specifically at the credit card balances of college students, their delinquency rates, as well as whether or not they had reached their rate limits. The authors found that students who were more financially at risk with their credit cards had a profile of being female, Black and or Hispanic, financially independent from their parents and were more likely to receive need-based financial aid (Robb and Pinto, 2010). The results on racial minority students have been confirmed elsewhere in a study by Scott (2007) and by Lyons (2007).

Roberts and Jones (2001) in an earlier study also looked at college student’s credit card usage, but focused more so on how their attitudes towards money impacted how they managed their credit card usage. Roberts and Jones (2001) in an unusual step, illuminated the role by colleges in allowing credit card companies access to students, by revealing that the credit card companies paid a fee to the college to set up their booths on the college campus. Roberts and Jones (2001) found that students who received financial counseling, from parents, a financial institution or other sources were more likely to have lower balances, pay off their balances and less likely to have an overdraft or late payment (Roberts and Jones, 2001). In essence, they were more likely to better manage their credit. These results were echoed in studies by Xiao et al. (2007), Hayhoe (2007), Norvilitis et al. (2006), Hayhoe et al. (1999), Hayhoe et al. (2000), Warwick and Mansfield (2000) and Palmer et al. (2001).

Hayhoe et al. (1999; 2000) and Hayhoe (2007) in a series of studies have looked at college students’ credit card usage and spending habits in an effort to determine the impact it has on their investment and saving behaviors, as well as the role gender plays as an altering factor in the relationship. The authors concluded that older college students were likely to have more credit cards or larger balances (Hayhoe et al., 1999) and the females were likely to have a larger balance or have more credit cards (Hayhoe et al., 2000; Chen and Volpe, 2002). Studies from Kara, Kaynak and Kucukemiroglu (1994), Norvilitis et al. (2006) and Warwick and Mansfield (2000) have looked on more general terms at students’ overall credit card usage, concluding that students tend to retain the credit cards they acquired during college after graduation (Warwick and Mansfield, 2000). These results have been reinforced by Jones (2005) who also found that credit card problems during the students’ college years tend to also follow the students after college (Jones, 2005).

Credit card debt has been said to have negative psychological repercussions for students, with high levels of credit card debts said to be related to a decreased sense of ability to manage one’s money and to result in lower self-esteem, a decreased sense of financial well being and higher levels of overall stress (Norvilitis et al., 2006). The authors concluded as much, after analyzing data from 448 students from five colleges in three states. Using a series of regression analyses, the authors concluded that significant predictors of credit card debt were: number of major credit cards, age, lack of financial knowledge, delay of gratification and multiple levels of credit card usage.

One of the most comprehensive studies done on college students’ credit card usage was conducted by Staten and Barron (2002) through the Credit Research Center. Utilizing a pooled sample of credit card accounts randomly selected from the portfolios of five of the top 15 general-purpose credit card issuers in the United States, the study compared behavior across three types of accounts: those opened through college student card marketing programs, those opened by young adults aged 18-24 through normal marketing channels and those opened by older adults through normal marketing channels (Staten and Barron, 2002). The authors concluded that students were more likely to have lower credit limits compared to the other groups, but were more likely to exceed those limits compared to their counterparts (Staten and Barron, 2002). In addition, younger adults, whether or not they were students, had approximately equal rates of delinquency on their cards compared to the other, older group but were less likely to take cash advances compared to the older group (Staten and Barron, 2002).

Pirog and Roberts’ study (2007) investigated the role that personality played in students’ credit card misuse. Mowen’s 3M hierarchical model was applied to survey data from 254 college students, which looked at four elemental personality traits (emotional instability, introversion, materialism and the need for arousal) which was found to be positively associated with credit card misuse, with impulsiveness emerging as a significant central trait that mediated these effects (Pirog and Roberts, 2007). In contrast, Chen and Volpe (2002) looked at financial letaracy among college students and found that women generally had less knowledge about personal finance topics. Gender differences remain statistically significant after controlling for other factors such as participants’ majors, class rank, work experience and age (Chen and Volpe, 2002). They also observed that women generally had less enthusiasm for, lower confidence in and less willingness to learn about personal finance topics than men do (Chen and Volpe, 2002).
A look at financial at risk (FAR) college students positioning were looked at from three separate studies by Lyons (2004), Lyons and Hunt (2003) and Hayhoe et al (2005). Lyons used a random sample of college students and identified the factors that significantly affected the probability a college student is financially at risk for mismanaging/misusing credit. The authors found that the financially at-risk students were more likely to be financially independent, to have received need-based financial aid, to have held $1,000 or more in other debt and to have acquired their credit cards by mail, a retail store or a campus credit card table (Lyons, 2004). Lyons in another study with Hunt, examined the credit practices and financial education needs of community college students. The students were found to have specific preferences for financial education content and how that information was delivered to them (Lyons and Hunt, 2003). The students in this study was also found to have preferred to receive financial education in one-on-one discussions, small group settings and from financial officers, versus other sources (Lyons and Hunt, 2003). Finally, Hayhoe et al (2005) found that college students’ attitudes towards credit, money beliefs and behavior and imagined conversations with parents about credit and debt were found to differ between students with credit cards and those without. The authors also used ordered logistic regression to model students with four or more credit cards and found nine variables significant, namely: the affective and behavioral credit attitudes, the retention money attitude, the frequency of imagined interactions, age, ethnicity, having had instruction in personal finance, year in college and whether they had a student loan (Hayhoe et al, 2005).

Results from the previously mentioned studies increase our understanding of college students by providing us with more specific data on their financial behavior and spending patterns. Analyzing college students’ credit card usage behavior at the very least, could serve as a proxy for other financial decisions they engage in later in life (Jones, 2005). The aim of this study will be to accurately decipher college students credit card usage and the impact this has on other debt categories and thus students’ financial positioning, with the added caveat of the analyses being done across gender lines, based on the above discussion, the current study will explore the following hypotheses:

H1: Most college students will have at least one credit card.

H1.1: Female students carry more credit cards than the male students

H2: Older students will have more credit cards.

H3: Older students will have a larger credit card balance.

H4: The average credit card balance will be at least $2000.

H5: Higher the GPA, less the student loan

H6: Higher the GPA, less will be the average credit card monthly balance

H7: Females will carry a larger credit card balance than their male counterparts.

H8: Students with higher credit card balances are more likely to have student loans/higher student loan balances.

RESEARCH METHODOLOGY AND RESULTS:

Data was collected from a random sample of 199 students from an upstate New York undergraduate Catholic School. Out of these 199 students, 110 were female students and 89 of them were male students. 113 students were from Business major, 45 of them were from Liberal Arts major and 41 were from Science major. If we breakdown by school year, we have 25 data sample from freshman class, 36 from sophomore class, 78 from junior and 60 students from senior class.

Let us first look into the basic information of these students. The descriptive statistics of few important variables are given in Table #1:

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Credit Cards</td>
<td>198</td>
<td>0</td>
<td>7</td>
<td>1.59</td>
<td>1.38</td>
</tr>
<tr>
<td>Credit Limit</td>
<td>152</td>
<td>0</td>
<td>40,000</td>
<td>3,247.37</td>
<td>4,285.52</td>
</tr>
<tr>
<td>Average Balance</td>
<td>156</td>
<td>0</td>
<td>7,000</td>
<td>494.26</td>
<td>904.66</td>
</tr>
<tr>
<td>Debt due to Education</td>
<td>163</td>
<td>0</td>
<td>120,000</td>
<td>14,464.65</td>
<td>22,164.00</td>
</tr>
<tr>
<td>Age</td>
<td>198</td>
<td>17</td>
<td>25</td>
<td>20.09</td>
<td>1.17</td>
</tr>
<tr>
<td>GPA</td>
<td>190</td>
<td>2</td>
<td>4</td>
<td>3.25</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Note: N = number of valid responses
About 13% of the students have no credit cards. 61% of these students carry at least one credit card (see, Table #2). So, the following hypothesis is true:

**H1: Most college students will have at least one credit card.**

The following table gives elaborate picture of ‘number of credit cards’ carried by students in our sample data.

### Table #2:

<table>
<thead>
<tr>
<th>Number of Credit Cards</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>26</td>
<td>13.1</td>
<td>13.1</td>
<td>13.1</td>
</tr>
<tr>
<td>1</td>
<td>95</td>
<td>47.7</td>
<td>48.0</td>
<td>61.1</td>
</tr>
<tr>
<td>2</td>
<td>48</td>
<td>24.1</td>
<td>24.2</td>
<td>85.4</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
<td>7.0</td>
<td>7.1</td>
<td>92.4</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>2.5</td>
<td>2.5</td>
<td>94.9</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>2.0</td>
<td>2.0</td>
<td>97.0</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>.5</td>
<td>.5</td>
<td>97.5</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>2.5</td>
<td>2.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>198</td>
<td>99.5</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>1</td>
<td>.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>199</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**H1.1: Female students carry more credit cards than the male students**

The following table shows the number of credit cards carried by male and female students.

### Table #3:

<table>
<thead>
<tr>
<th># Credit cards vs. Sex</th>
<th>Sex</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td># Credit cards = 0</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>69.2%</td>
<td>30.8%</td>
</tr>
<tr>
<td># Credit cards = 1</td>
<td>46</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>48.4%</td>
<td>51.6%</td>
</tr>
<tr>
<td># Credit cards = 2</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>52.1%</td>
<td>47.9%</td>
</tr>
<tr>
<td># Credit cards = 3</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>71.4%</td>
<td>28.6%</td>
</tr>
<tr>
<td># Credit cards = 4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>80.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td># Credit cards = 5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>50.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td># Credit cards = 6</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>.0%</td>
</tr>
<tr>
<td># Credit cards = 7</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>80.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>55.6%</td>
<td>44.4%</td>
</tr>
</tbody>
</table>
We checked if there is any difference in the relative distribution of number of credit cards possessed by male students and female students by chi-square test of homogeneity. The p-value (2-sided) for the chi-square test of homogeneity is 0.263. So, the male students and female students are pretty homogeneous in number of credit cards that they carry.

**H2: Older students will have more credit cards.**

The following table shows that the 20 year or older students tend to carry proportionately more than one credit card than students with less than 20 year old students (see, Table #4). However, the distribution of having more than one or less than one credit card between older and younger students is statistically insignificant. The p-value (two sided) of the chi-square test of homogeneity is 0.254. So, the above hypothesis that the older students will have more credit cards is not statistically true for our sample data.

<table>
<thead>
<tr>
<th>Age vs. Number of Cards</th>
<th>One card or less</th>
<th>More than one card</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 year or younger students</td>
<td>82 (64.6%)</td>
<td>45 (35.4%)</td>
<td>127 (100.0%)</td>
</tr>
<tr>
<td>More than 20 years old students</td>
<td>40 (56.3%)</td>
<td>31 (43.7%)</td>
<td>71 (100.0%)</td>
</tr>
<tr>
<td>Total</td>
<td>122 (61.6%)</td>
<td>76 (38.4%)</td>
<td>198 (100.0%)</td>
</tr>
</tbody>
</table>

**H3: Older students will have a larger credit card balance.**

The relative proportion of students carrying more (or, less) than $1,000 credit balance are not that much different from 20 year or younger student population to older student population (see, Table #5). This is also substantiated by the chi-square test homogeneity. The p-value of the chi-square test statistics (two sided) is 0.658. So the distribution of credit balances (more or less than $1000) between younger students and the older students are homogeneous. So the above hypothesis is not true. This is important to note that carrying a monthly average balance of $1,000 or more is considered “Financially at Risk” for college students (see, Lyons, A. 2004).

<table>
<thead>
<tr>
<th>Age vs. Credit card balance</th>
<th>Credit balance less than $1000</th>
<th>Credit balance more than $1000</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 year or younger students</td>
<td>108 (85.0%)</td>
<td>19 (15.0%)</td>
<td>127 (100.0%)</td>
</tr>
<tr>
<td>More than 20 years old students</td>
<td>62 (87.3%)</td>
<td>9 (12.7%)</td>
<td>71 (100.0%)</td>
</tr>
<tr>
<td>Total</td>
<td>170 (85.9%)</td>
<td>28 (14.1%)</td>
<td>198 (100.0%)</td>
</tr>
</tbody>
</table>

**H4: The average credit card balance will be at least $2000.**

About 170 students (about 85%) carry average monthly credit balance of less than $1,000 and 29 students (about 15%) carry average monthly credit balance of more than $1,000 (see, Table #6). This shows that the above hypothesis is not true for our sample. Further, we may also look at the above hypotheses and investigate the truthfulness of this hypothesis for male and female population. Again for both male and females students, most students carry monthly average balance of less than $1,000. The p-value for chi-square test of homogeneity (two sided) is 0.677, this shows that the distribution of average monthly balance (less than $1,000 or more than $1,000) is homogeneous between male and female students.
H5: Higher the GPA, less the student loan

Majority of the students pay close attention to their grades while they are at school. A natural question comes to mind, what are the relationships between the grades and student loan, or between the grades and credit card debt. The GPA (grade point average) distributions of these students’ range from 1.9 to 4.0. Thirteen (6.84%) of these students have GPA less than 2.75, 134 (70.53%) of these students have GPA between 2.75 to 3.5 and 43 (22.63%) of these students have GPA more than 3.5.

One hundred seventeen (59.09%) of these students have no debt incurred due to college education. Forty (20.20%) of these students have less than $20,000 as debt due to college education. Nineteen (9.60%) of them have less than $40,000 educational loan. Sixteen (8.08%) of these students have less than $60,000 debt due to college education. And only six (3.03%) students have debt of more than $60,000 due to college. The following Table #7 shows cross tabulation between student loan vs. GPA. This is interesting to see that approximately 40% of students with ‘student loan’ less than $40,000 have GPA more than 3.5, whereas, none of the students with more than $40,000 ‘student loan’ has GPA more than 3.5 (see, Table #6). The chi-square test of homogeneity has a p-value of .005. This means that the students’ GPA distributions are not homogeneous between student loan groups. It shows that the students with higher GPA have less student loan. What could be the reason? Because, brighter students came to college with some other scholarships so they need less of student loans. Or, better students can manage their finances/loans better, so they have less student loans. We are unable to answer this with the current data set, this interesting result gives direction to further research.

Table #6:

<table>
<thead>
<tr>
<th>Credit Balance vs. Sex</th>
<th>Sex</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>Credit balance less than $1,000</td>
<td>95</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>55.9%</td>
<td>44.1%</td>
</tr>
<tr>
<td>Credit balance more than $1,000</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>51.7%</td>
<td>48.3%</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>55.3%</td>
<td>44.7%</td>
</tr>
</tbody>
</table>

Table #7:

<table>
<thead>
<tr>
<th>Student Loan vs. GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Loan</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Less than $20,000</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Less than $40,000</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Less than $60,000</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>More than $60,000</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

This leads to the interesting question if average credit balance carried by a student has any relationship with their GPA.
H6: Higher the GPA, less will be the average credit card monthly balance

Table #8 shows that below average (GPA less than 2.75), or, average (between 2.75 and 3.5) or, above average (more than 3.5) students are homogeneously distributed for both the group with credit balance of less than $1,000 and credit balance of more than $1,000. This observation is substantiated by the chi-square test of homogeneity. The p-value of chi-square test of homogeneity is 0.206 (statistically non significant). So, statistically, we cannot say that students with higher GPA will carry lower average credit balance.

Table #8

<table>
<thead>
<tr>
<th>Credit balance vs. GPA</th>
<th>GPA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>less than 2.75</td>
<td>between 2.75 and 3.5</td>
</tr>
<tr>
<td>Credit balance less than $1,000</td>
<td>7</td>
<td>83</td>
</tr>
<tr>
<td>Credit balance more than $1,000</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>98</td>
</tr>
</tbody>
</table>

H7: Females will carry a larger credit card balance than their male counterparts.

The following table shows the Student loan distribution among male and female students.

Table #9:

<table>
<thead>
<tr>
<th>Student Loan vs. Sex</th>
<th>Sex</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>None</td>
<td>43</td>
<td>40</td>
</tr>
<tr>
<td>Less than 20,000</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Less than 40,000</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Less than 60,000</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>More than 60,000</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Total:</td>
<td>110</td>
<td>89</td>
</tr>
</tbody>
</table>

Higher proportion of female students has no student loans than the male students. Higher proportion of female students borrowed in student loan category $20,000 to $40,000 than the male students. However, higher proportion of male students fall in the student loan categories “less than $60,000” and “more than $60,000” (see, Table #9). The p-value (2-sided) for chi-square test of homogeneity is 0.851 between male and female students’ student loan. So, the student loan distributions are homogeneous between male and female students. So, the above hypothesis is true.
H8: Students with higher credit card balances are more likely to have student loans/higher student loan balances.

We observe that distribution of population with credit balance more than $1,000 increases from 16.26% to 19.57% as the student loan increase from $20,000 or less to more than $20,000 (see, table #10). Apparently, this difference is statistically insignificant. The test statistics for the chi-square test of homogeneity is 0.257 (p-value more than .10), proving homogeneous distribution between two groups. So the hypothesis that the students with higher credit balances are more likely to have higher student loans is not true for our sample.

| Table #10: |
|---------------------|---------------------|---------------------|
|                      | Credit balance less than $1000 | Credit balance more than $1000 | Total |
| Student loan is less than or equal to $20,000 | 103 | 20 | 123 |
|                      | 83.74% | 16.26% | 100% |
| Student loan is more than $20,000 | 37 | 9 | 46 |
|                      | 80.43% | 19.57% | 100% |
| Total | 140 | 29 | 169 |
|                      | 82.84% | 17.16% | 100% |

Can the above result be different if we consider all categories of student loans? The following table (Table #11) shows the breakdown with all categories of student loans (considering males and females together) from zero loans to more than $60,000:

| Table #11: |
|---------------------|---------------------|---------------------|
|                      | Student Loan vs. Credit card Balance |
|                      | All Students | Credit balance | Total |
|                      |  | Less Than $1000 | More than $1000 |
| None | 70 | 13 | 83 |
|                      | 84.3% | 15.7% | 100.0% |
| Less than 20,000 | 33 | 7 | 40 |
|                      | 82.5% | 17.5% | 100.0% |
| Less than 40,000 | 14 | 5 | 19 |
|                      | 73.7% | 26.3% | 100.0% |
| Less than 60,000 | 16 | 0 | 16 |
|                      | 100.0% | .0% | 100.0% |
| More than 60,000 | 7 | 4 | 11 |
|                      | 63.6% | 36.4% | 100.0% |
| Total | 140 | 29 | 169 |
|                      | 82.8% | 17.2% | 100.0% |

Higher proportions of students have high credit card balance if their student loan is more than $60,000. The p-value for the chi-square test of homogeneity (two sided) is 0.115 (non significant). That shows statistically the low credit balance and the high credit balance student groups are homogeneously distributed among various student loan groups. It will be interesting to see if this result is still true for Male students and female students. This is elaborated in Table #12.

For the female students, proportionate distribution of credit card balance between ‘less than $1,000’ and ‘more than $1,000’ are still homogeneous (p-value for chi-square test of homogeneity = 0.568) among different student loan categories. However, for male students, as the student loan goes up, male students tend to go above $1,000 credit card balance (except $40,000 to $60,000 student loan category). Going beyond $1,000 credit balance is critical, as that is the tipping point (see, Robb and Pinto). Students are considered financially at risk if they carry average monthly credit balance of $1,000 or more (see, Lyons, 2004). 75% of the male students in the student loan category $60,000 or more is considered “financially at Risk”. Also, for the
$20,000 to $40,000 student loan category, 50% of male students carry average monthly credit card balance of more than $1,000, which is unusually high. The p-value for chi-square test of homogeneity is 0.001. That shows that among male students, relative proportions of average credit card balance (less than $1,000 or more than $1,000) are not same among different student loan categories. When student loans are less, proportionately higher number of students has less than $1,000 average monthly credit card balance. So, lower the chances for those students being ‘Financially at Risk’. As the student loans go higher than $60,000 higher proportions of students tend to have average monthly credit card balance of more than $1,000 (going beyond this limit of $1,000 makes them considered financially at risk).

**Table #12:**

<table>
<thead>
<tr>
<th>Credit balance</th>
<th>Female Students</th>
<th>Male Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(p-value for the chi-square test of homogeneity: 0.568 (two sided)</td>
<td>(p-value for the chi-square test of homogeneity: 0.001 (two sided)</td>
</tr>
<tr>
<td></td>
<td>Less Than $1000</td>
<td>More than $1000</td>
</tr>
<tr>
<td>None</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>81.4%</td>
<td>18.6%</td>
</tr>
<tr>
<td>Less than 20,000</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>75.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Less than 40,000</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>90.9%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Less than 60,000</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>.0%</td>
</tr>
<tr>
<td>More than 60,000</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>85.7%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>82.7%</td>
<td>17.3%</td>
</tr>
</tbody>
</table>

**CONCLUSION**

1. Most college students have at least one credit card. Number of credit cards carried by male and female students is statistically homogeneous
2. Statistically there is no difference between the number of credit cards carried by the younger students (20 year or less) and the older students (more than 20 years old).
3. Statistically there is no difference between the average monthly credit card balances by the younger students (20 year or less) and the older students (more than 20 years old).
4. Majority of the students carry an average monthly balance of less than $1,000
5. Students with higher GPA tend to have less student loan. We cannot conclude if it is because academically better students get more scholarship and thereby have lower loans. Or, because of the qualities that make a student better in academics, can help him/her manage her academic financing better planned. This is the direction of our future research.
6. Distribution of students with higher or, lower average credit card balance is homogeneous between high GPA students and low GPA students. Essentially saying that the average monthly credit card balance carried by students does not depend on their academic brilliance.
7. Distributions of student loans are statistically homogeneous between male and female students.
8. For the female students, distributions of student loans are homogeneous between average monthly credit card balance of less than $1,000 and more than $1,000. We cannot say (for female students), high student loans result in higher credit card balance. However, for male students, higher student loans result in higher average monthly credit card balance.
   This research is based on 199 randomly selected students from an undergraduate catholic school in upstate New York.

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Scott, M. 2007. Avoid the credit card trap. The Black Collegian, 37 (3), 62-64.
HUMAN CAPITAL AS AN ECONOMIC DEVELOPMENT TOOL IN THE RURAL VS. NON-RURAL SOUTH

Bethany Parker Mullin
Valley Community College USA

ABSTRACT

The purpose of the quantitative study was to evaluate human capital as an economic development tool in Alabama. The study evaluated relationships between human capital and economic development from 1950-2000 within the context of human capital theory. The research questions addressed the relationship at the county level and were analyzed using cross-sectional longitudinal analyses. Multilevel regressions were used to estimate the relationships at the p < .05 level. Results indicated a significant causal relationship from investment in human capital to economic development. Every one percentage point increase in human capital investment caused an increase of 13,440 jobs per county. Non-rural counties added 34,786 jobs for every one percentage point increase in human capital; rural counties did not gain a significant return on human capital investment. The low populations of the rural counties, coupled with outmigration of educated workers, were likely causes of this outcome. Results demonstrated that the gap between economic development in counties that invest in human capital and those who do not has been widening since 1950 and that human capital was the most significant variable in determining economic development. Increasingly strong correlations between human capital and economic development were found in each decade and were significant at the p < .01 level. The results help policy makers in economic development efforts by quantifying returns to human capital investments. Policy recommendations include increasing human capital investment, promoting in-tact families, and attracting educated workers back to rural counties. Future research recommendations include how family environments contribute to a county’s business, labor, and economic landscapes, and how human capital and family social capital interact to improve economic outcomes.

Keywords: Economic Growth, Economic Development, Human Capital, Education, Rural Studies, Regional Economic Activity.

1. INTRODUCTION

In the last half of the twentieth century, the needs of American employers shifted from low-skilled labor used in farming and manufacturing toward a highly-educated workforce required in engineering, computer science, healthcare, and other growing industries. Alabama has not embraced the changing labor requirements as thoroughly as other areas of the United States (See Table 1). Alabama lags behind the country in every economic, business, and social measure. Alabama is ranked 49th in labor force participation, 46th in high school graduates, and 45th in college graduates. These factors are associated with a high poverty rate that has persisted for generations. Alabamians are 30% more likely to live in poverty than citizens elsewhere in the country and are 68% more likely to be unemployed (U.S. Census Bureau, 2009).

Table 1: Educational Attainment of Adults Over 25 Years Old, 2000

<table>
<thead>
<tr>
<th>Category</th>
<th>U.S.</th>
<th>Rural U.S.</th>
<th>Non-Rural Alabama</th>
<th>Rural Alabama</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Adults with High School Diploma</td>
<td>81%</td>
<td>75%</td>
<td>77%</td>
<td>67%</td>
</tr>
<tr>
<td>Percent of Adults with College Degree</td>
<td>25%</td>
<td>16%</td>
<td>20%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Note: Figures are derived from data provided by the U.S. Census Bureau (2009).

The purpose of this quantitative study was to determine the nature of the relationship between human capital investment and economic development in Alabama counties. The research had three objectives. The first was to identify whether human capital investments have a causal relationship to economic growth. The second was to assess whether the causal relationship has increased over time. The third objective was to determine whether the return to human capital investment differs in rural counties versus non-rural counties.

The study’s significance lies in its ability to help struggling localities determine how to allocate their economic development funds. Counties make decisions about how to spend scarce resources according to which investment yields the biggest...
benefit. The study quantified the returns to human capital investment at the county level. The results of the study could assist counties in their economic development programs by providing them with quantifiable investment returns, a result that has far-reaching applications outside the state of Alabama.

Human capital theory provided the theoretical framework for the study. Many researchers have examined economic development and human capital using income, poverty, and job growth as dependent variables (Beaulieu & Gibbs, 2005; Baldwin & Borrelli, 2009; Barkley, Henry, & Li, 2005; Pandey & Zahn, 2006). Differing geographic areas have also been analyzed, including nations, regions, and states. The current study differed from previous studies by analyzing job growth at the county level in Alabama. The study also expands on previous studies by using the percentage of population with a college degree as the measure of human capital. The unique combination of variables demonstrates the growing importance of a college degree on the economic growth.

2. LITERATURE REVIEW

Prior to the 1950s, investment in one’s education, training, and other aspects of well-being were considered personal traits and not productive capital. Labor power was considered a constant and therefore not able to be changed (Becker, 1992). Additionally, the term human capital was thought to be degrading to humans since it treated them like machines. However, since the work of Schultz, Chiswick, Becker, and others in the 1960s, human capital has become widely accepted as a productive input into the quality of labor (Becker, 1992). In the 1960s, Barry Chiswick and Gary Becker, among others, explained increases in economic well-being in terms of higher human capital accumulation, such as training and education, that affects productive capacity (Becker, 1964; Lehrer, 2004). Human capital theory proposes that people make decisions about education and training by comparing benefits and costs (Becker, 1992). People increase human capital investments if they anticipate benefits from the investments.

The benefits of investments in human capital have been consistently shown to accrue to both individuals and to societies in the form of increased income, cultural awareness, improved health, stable home environments, higher job satisfaction, and other benefits. The statistical link between increases in human capital and increases in income is very strong and well-documented (Arellano & Fullerton, 2005; Becker, 1992; Betts, 2001; Gibbs, 2005; Li, 2005; and Siqueira, 2007). Few researchers have statistically analyzed the relationship between the educational attainment of a county and that county’s ability to attract employment opportunities. Furthermore, few studies have been conducted on Alabama counties, despite the fact that Alabama is one of the nation’s most economically-challenged states, as measured by per capita income, job growth, poverty levels, residential migration, labor force participation, education levels, and female-headed households. The goal of the current research is to remedy the gap in research by analyzing human capital’s role in encouraging economic development in Alabama.

While other researchers have addressed the relationships among economic growth, income growth, and human capital, the current research derived its foundation and framework on a handful of academic papers. A few key studies have been conducted using similar variables and populations, and the current study used these studies’ results to determine anticipated null and alternate hypotheses rejection or acceptance. The studies’ parameter estimates were also used to compare parameter estimates for the variables in the current study.

For example, Gibbs & Beaulieu (2005), Goetz & Rupasingha (2005), and Barkley et al. (2005) have contributed to the understanding of Southern poverty and income levels and how they relate to human capital. The authors are associated with Southern universities and have performed research for the Southern Rural Development Center (SRDC). The SRDC’s researchers have enhanced the academic literature regarding the economic plight of Southern communities, and more specifically, the plight of rural Southern communities.

Goetz and Rupasingha (2005) used regression analysis to determine that increasing the high school graduation rate by one percentage point leads to an increase per capita incomes by $128 for rural counties and by $413 for urban counties (Goetz & Rupasingha, 2005). Barkley, Henry, and Li (2005) derived similar results from their analysis using the percentage of the population who had at least one year of college as an explanatory variable instead of the high school graduation rate. The researchers determined that each increase of five percentage points of the college variable resulted in an increase of $435 for metropolitan per capita income and $325 for rural per capita income (Barkley et al., 2005). Gibbs (2005) and Gibbs & Beaulieu (2005) have found similar returns to education.

The work of Arellano and Fullerton (2005) and Baldwin and Borrelli (2008) also contributes to the academic literature by examining human capital’s relationship to income growth at the state level. Neither study uses the American South as a population, but their results nonetheless provide valuable information to the analysis of human capital and economic outcomes.
Baldwin and Borrelli (2008) found that investments in higher education at the state level were the most significant predictor of income, followed by highway spending. The coefficients were .463 and .309, respectively, from 1988-2005 (Baldwin & Borrelli, 2008).

Arellano and Fullerton (2005) found similar results in Mexican states. Each increase in the percentage of population that graduated from secondary school resulted in state per capita income 504 pesos. Each one year increase in primary school completion resulted in a per capita income of 97 pesos. Each increase is significant when multiplied throughout the state. Although the studies used income as dependent variables instead of employment growth, the studies still provide important background information for the current study.

The current research added to the vein of research by extending the analysis to include job growth as a dependent variable instead of income. Barkley, Henry, and Li (2005) also use the job growth variable in addition to the income variable. Their results indicate that each increase of five percentage points of the population who attended college resulted in 4,684 more jobs for metropolitan county and 150 more jobs for a rural county (Barkley et al., 2005). The new employment growth rates are over and above the growth that would have occurred without the increase in human capital. The research was conducted at the county level for the Southern region of the United States. The current study expanded upon the research by extending the analysis to the county level for a state.

3. RESEARCH METHOD AND DESIGN

The study used correlation and multilevel regression analysis to address the research questions. Analysis was performed in time periods 1950-1960, 1960-1970, 1970-1980, 1980-1990, and 1990-2000. The population included the approximately 4,000,000 residents in Alabama in each time period. Data were derived from U.S. Census Bureau, Bureau of Economic Analysis (BEA), Department of Agriculture, and the Alabama Department of Transportation. The models were estimated using restricted maximum likelihood estimation (REML). When covariates, or fixed effects, were added, the estimation method was maximum likelihood (ML). Goodness of was determined by -2 log likelihood or -2 restricted log likelihood. Grand mean centering was used. Individual growth models were developed, where each county had a different slope and intercept.

The models were random slope models with independence and homogeneity of variance and tested each hypothesis using lagged variables. For example, economic development in time period two was regressed against human capital in time period one. Effects of time were controlled for by setting time as a random effect, or a layer allowed to vary. Effects of spatial dependence were controlled by treating the jobs in contiguous counties as fixed instead of random effects. The model became:

\[ EcDev_t = b_{00} + b_1 Time + b_2 Rural + b_3 Mobil + b_4 ContigJobs + b_5 HC + b_6 Rural*HC + b_7 Rural*Time + b_8 HWY*Time + b_9 Mobil*Time + b_{10} Time \]

For County i at time j,

\[ u_{ij} \sim N(0, \tau_{0j}) \]
\[ u_{ij} \sim N(0, \tau_{1j}) \]
\[ e_{ij} \sim N(0, \sigma^2) \]

where EcDev\_t is economic development in time period t, where j = 1960, 1970, 1980, 1990, or 2000, and k = 10, 20, 30, 40, or 50. ContigJobs is the number of jobs in contiguous counties, HC is human capital investment, Mobil is the geographic mobility rate, HWY is whether the county had an interstate highway, NAT is the natural amenity rating, LFP is labor force participation, and Rural is whether or not the county was rural. The rural variable replaced LND, the land area of the county, because LND did not change over time. NAT was also constant throughout each time period and eventually dropped from the model. Population was removed because its .980 correlation with the number of jobs caused multicollinearity.

The random intercept was u_{0ij}, and was a normally-distributed random variable with mean=0 and constant variance of \( \tau_{0j} \). The \( u_{1ij} \) was the random slopes over time, which measured variation in job growth and was a normally-distributed random variable with mean=0 and \( \tau_{1j} \) constant variance. Residual \( e_{ij} \) is residual variation from each county’s regression line.

Hypothesis 2 was analyzed using a similar model but one that allowed for a slope change in 1990. The model was as follows:

\[ EcDev_{ij} = b_{00} + b_1 Time + b_2 Rural + b_3 Mobil + b_4 ContigJobs + b_5 HC + b_6 Time + b_7 Rural + b_8 HC + b_9 Post1990 + b_{10} Time*Rural + b_{11} Post1990 + b_{12} Time*HC + b_{13} Rural + b_{14} Post1990 + b_{15} Time*Mobil + b_{16} Rural + b_{17} Time + b_{18} Rural*HC + b_{19} Rural*Time + u_{ij} + e_{ij} \]

(2)
For County i at time j

\[
\begin{align*}
\text{u}_{ij} &\sim N(0, \tau_{0}) \\
\text{u}_{ij} &\sim N(0, \tau_{1}) \\
\epsilon_{ij} &\sim N(0, \sigma_{2}^{2}) \\
\text{Cov}(\text{u}_{ij}, \text{u}_{ij}) &= \tau_{01}
\end{align*}
\]

To test whether each covariate had a discontinuity in 1990 in the way it affected job growth, a predictor was added to allow the slope to change in 1990. The Post1990 predictor had a value of 0 up to and including 1990. After 1990, it increased at the same rate as time. Before 1990, where Post1990=0, the full effect of each covariate on growth was measured by the coefficient of the covariate’s interaction with time. After 1990, the effect of the covariate on growth was measured by the sum of the coefficients of the covariate’s interaction with time and its interaction with Post1990. For example, before 1990, the effect of HC on job growth is \(b_{14}\), but after 1990 the effect of HC on job growth is measured by \(b_{14} + b_{15}\).

The third hypothesis was also tested using a multilevel regression model with lagged variables. The type of county, rural or non-rural, was included in the model as a random effect, or another layer allowed to vary. The model was the same as model 3 above, but with type of county as another layer.

4. RESULTS

This section is divided into three sections corresponding to the research questions and hypotheses. For the dependent variable, economic development, five time periods were used: 1960, 1970, 1980, 1990, and 2000. For the lagged independent variables, 1950 was included.

4.1 Hypothesis One

Q1. Is there a causal relationship from investments in human capital to economic development?

H10. Investments in human capital do not cause economic development.

H1a. Investments in human capital cause economic development.

The goal of hypothesis 1 was to demonstrate a causal relationship between investment in human capital in one time period and the economic growth in the following time period. Several models were developed to achieve the goal. Research question 1 was first evaluated using correlation analysis on lagged variables, as shown in Table 2.

<p>| Table 2: Correlation Analysis for Hypothesis 1 Lagged Variables |
|-----------------|----------------|---------------|-----------|-----------|----------------|-----------------|-----------|</p>
<table>
<thead>
<tr>
<th>Pearson Corr. HC</th>
<th>HWY</th>
<th>Mobil</th>
<th>LFP</th>
<th>Rural</th>
<th>Nat Amen</th>
<th>Contig Jobs</th>
<th>Econ Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC</td>
<td>1</td>
<td>.361**</td>
<td>.418**</td>
<td>.568**</td>
<td>-.298**</td>
<td>-.081</td>
<td>.177**</td>
</tr>
<tr>
<td></td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.037)</td>
<td>(.001)</td>
<td>(.000)</td>
</tr>
<tr>
<td>HWY</td>
<td>.361**</td>
<td>1</td>
<td>.161**</td>
<td>.275**</td>
<td>-.187**</td>
<td>.090</td>
<td>.338**</td>
</tr>
<tr>
<td></td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.001)</td>
<td>(.009)</td>
<td>(.000)</td>
</tr>
<tr>
<td>Mobil</td>
<td>.418**</td>
<td>.161**</td>
<td>1</td>
<td>.324**</td>
<td>-.291**</td>
<td>-.021</td>
<td>.150**</td>
</tr>
<tr>
<td></td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.001)</td>
<td>(.009)</td>
<td>(.000)</td>
</tr>
<tr>
<td>LFP</td>
<td>.568**</td>
<td>.275**</td>
<td>.324**</td>
<td>1</td>
<td>-.246</td>
<td>-.089</td>
<td>.136</td>
</tr>
<tr>
<td></td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.104)</td>
<td>(.013)</td>
<td>(.000)</td>
</tr>
<tr>
<td>Rural</td>
<td>-.298**</td>
<td>-.187**</td>
<td>-.291**</td>
<td>-.246**</td>
<td>1</td>
<td>-.229**</td>
<td>-.282**</td>
</tr>
<tr>
<td></td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.001)</td>
<td>(.009)</td>
<td>(.000)</td>
</tr>
<tr>
<td>Nat</td>
<td>-.081</td>
<td>.090</td>
<td>-.021</td>
<td>-.089</td>
<td>-.229**</td>
<td>1</td>
<td>.141**</td>
</tr>
<tr>
<td></td>
<td>(.137)</td>
<td>(.099)</td>
<td>(.705)</td>
<td>(.104)</td>
<td>(.000)</td>
<td>(.010)</td>
<td>(.087)</td>
</tr>
<tr>
<td>Amen</td>
<td>.177**</td>
<td>.338**</td>
<td>.150**</td>
<td>.136**</td>
<td>-.282**</td>
<td>.141**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(.001)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.013)</td>
<td>(.000)</td>
<td>(.010)</td>
<td>(.630)</td>
</tr>
<tr>
<td>Contig</td>
<td>.446**</td>
<td>.264**</td>
<td>.225**</td>
<td>.298**</td>
<td>-.442**</td>
<td>.094</td>
<td>.026</td>
</tr>
<tr>
<td></td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.087)</td>
<td>(.630)</td>
<td>1</td>
</tr>
<tr>
<td>Emp</td>
<td>.298**</td>
<td>.275**</td>
<td>.324**</td>
<td>1</td>
<td>-.229**</td>
<td>-.089</td>
<td>.136</td>
</tr>
<tr>
<td></td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.104)</td>
<td>(.013)</td>
<td>(.000)</td>
</tr>
</tbody>
</table>

\(p < .01\), \(N = 335\). p-values in parentheses.

All the variables, with the exception of natural amenities and jobs in contiguous counties, were significantly correlated at the 0.01 level. The strongest correlations occurred between labor force participation and human capital, and between economic...
development and human capital. These findings are consistent with the findings of previous studies. People with higher levels of human capital also participate in the labor force at a higher rate than less-educated people (Sanders & Nee, 1996; Seo, 2005; U.S. Bureau of Economic Analysis, 2009).

The demographic profile of Alabama contributed to the lack of correlation between economic development and the number of jobs in contiguous counties. Citizens of Alabama are less likely to move than citizens elsewhere. Alabamians have a lower mobility rate, 42 percent, than the rest of the United States, 47 percent (U.S. Census Bureau, 2009). The economic activity in contiguous counties had no discernable effect on economic development in a particular county because Alabamians are less willing to relocate to a neighboring county's job market.

Analysis of hypothesis 1 continued with regression models presented in Table 4. The first model estimated the relationships between economic growth and all covariates except human capital and Rural, which were added in the next models. The intercepts of natural amenity rank, time, LFP, and ContigJobs were not significant, meaning they did not affect the intercept. The insignificant variables of LFP and natural amenity were removed from subsequent models. The contiguous jobs variable was insignificant but was left in the model to control for spatial dependence. The intercept variables of HWY and Mobil were significant. The mobility of the population and whether the county had access to an interstate highway were significant determinants of the economic development in time period zero.

The slope variables are the covariate that were interacted with time. Estimates of these variables measure the effect that the variables have on the slopes, which demonstrates how the variables change throughout time. The significant slope variables in Model 1 and Model 2 were HWY, Mobil, and ContigJobs. When the human capital variable was added in Model 3, both the slope and intercept variables of Mobil remained significant, but the slope variables of ContigJobs and HWY became insignificant. Human capital was a significant slope variable.
Table 2: Multilevel Regression Statistics for Hypothesis 1

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Model 1: Covariates except HC and Rural</th>
<th>Model 2: Omit insignificant variable. Add Rural</th>
<th>Model 3: Add HC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>19.95** (2.52)</td>
<td>18.87** (3.39)</td>
<td>16.94** (3.08)</td>
</tr>
<tr>
<td>NatAmen</td>
<td>-7.235 (-.841)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Rural</td>
<td>n/a</td>
<td>-3.68* (-2.03)</td>
<td>-3.44* (-1.99)</td>
</tr>
<tr>
<td>HWY</td>
<td>5.7825** (2.99)</td>
<td>5.75** (3.12)</td>
<td>4.17** (2.27)</td>
</tr>
<tr>
<td>Time</td>
<td>2.56 (.807)</td>
<td>.938 (.491)</td>
<td>-.525 (-.288)</td>
</tr>
<tr>
<td>LFP</td>
<td>3.732 (.424)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Mobil</td>
<td>-13.24** (-3.68)</td>
<td>-13.05* (-3.93)</td>
<td>-6.75* (-1.80)</td>
</tr>
<tr>
<td>ContigJobs</td>
<td>-1.134 (-.968)</td>
<td>-.091 (-.663)</td>
<td>-.035 (-.265)</td>
</tr>
<tr>
<td>HC</td>
<td>n/a</td>
<td>n/a</td>
<td>37.62 (1.42)</td>
</tr>
<tr>
<td>Time * NatAmen</td>
<td>-1.614 (-.795)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Time * Rural</td>
<td>n/a</td>
<td>.799 (1.24)</td>
<td>.501 (.816)</td>
</tr>
<tr>
<td>Time * HWY</td>
<td>-1.896** (-2.72)</td>
<td>-1.88** (-2.89)</td>
<td>-1.16 (-1.77)</td>
</tr>
<tr>
<td>Time * LFP</td>
<td>-1.223 (-.274)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Time * Mobil</td>
<td>12.179** (3.28)</td>
<td>12.43** (3.38)</td>
<td>9.02* (2.45)</td>
</tr>
<tr>
<td>Time * ContigJobs</td>
<td>.0336* (2.11)</td>
<td>.027 (1.84)</td>
<td>.015 (1.05)</td>
</tr>
<tr>
<td>Time * HC</td>
<td>n/a</td>
<td>n/a</td>
<td>13.44** (2.31)</td>
</tr>
<tr>
<td>Model Fit (-2LL)</td>
<td>2306</td>
<td>2304</td>
<td>2280</td>
</tr>
</tbody>
</table>

Random Effects

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual (Within-County Variation)</td>
<td>8.80</td>
<td>8.52</td>
<td></td>
</tr>
<tr>
<td>Between-County Intercept Variation</td>
<td>1208.3</td>
<td>1276.3</td>
<td>1267.2</td>
</tr>
<tr>
<td>Between-County Slope66.5</td>
<td>63.8</td>
<td>56.1</td>
<td></td>
</tr>
</tbody>
</table>

Note: MLM coefficients are the fixed effects, and variance components are random effects. Variables were centered on their grand mean. \( p < .05 \), \( p < .01 \). t-statistics in parentheses.

The significant results of MLM analysis allow rejection of the null hypothesis that investments in human capital do not cause economic development. A causal relationship from investments in human capital to economic development was detected. Results of the regression analysis indicated that every one percentage increase in the population that graduates from college causes an increase of 13,440 jobs per decade. The results are significant at \( p < .05 \).
The study provided quantifiable returns on human capital investments that policy makers can use when evaluating budget options. The return on investment in human capital of 13,440 jobs per decade is important information to determine how to allocate budget dollars. If high investment returns can be shown, like the ones in the current study, then investment in human capital will increase (Becker, 2007). The increase in human capital investment will cause a subsequent increase in economic development. The payoff to the investment in human capital was greater than in highways, natural amenities, geographic mobility, activity in surrounding counties, and labor force participation of the population.

4.2 Hypothesis Two

Q2. Do investments in human capital cause a higher level of economic development from 1990-2000 than they did from 1960-1990?


The goal of hypothesis 2 was to evaluate human capital's increasing role in economic development. The hypothesis was evaluated using correlation analysis between the levels of human capital and the number of jobs, as well as a multilevel regression model with a new variable to detect a slope change in the regression lines in 1990. The entirety of the analyses allowed rejection of the null hypothesis that investments in human capital do not cause a higher level of economic development from 1990-2000 than they did from 1960-1990. Human capital's growing influence on economic development can be seen graphically in Figure 1. Each point on the graph represents an individual county's economic growth curve.

![Figure 1: Human Capital's Increasing Role in Job Growth](image_url)

With each decade, the correlation between human capital and the number of jobs becomes stronger, as demonstrated by the correlation coefficients shown in Table 4. For example, correlation between human capital and the number of jobs in 1960 was a .365. By 2000, the correlation had grown to .579. Correlation analysis supports the hypothesis that the relationship between the two variables has grown stronger over time.
The analysis of hypothesis 2 continued with MLM regression analysis, the findings of which are presented in Table 5. A new model was developed by creating a post-1990 variable which was interacted with human capital investment, economic development, and other variables in the model to detect a slope change in 1990. Results of the regression analysis indicate that the variables interacted with 1990 are not significant. However, the model with the post-1990 variable improves the overall fit of the regression, as measured by the -2 log likelihood. Additionally, the gap between how human capital affects jobs in counties with a high level of human capital investment versus counties with a low level of human capital investment is larger and more significant with each decade. Despite the insignificant slope change at 1990, rejection of the null hypothesis is indicated by the results of the correlation analysis and by the growing gap between the types of counties in terms of human capital investment and economic development. The implication of the finding is that the importance of a college-educated workforce is greater from 1990-2000 than it was in prior decades.
**Table 4: Multilevel Regression Statistics for Hypothesis 2**

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Final Model from RQ1</th>
<th>Model with 1990 Slope Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>16.08** (2.94)</td>
<td>15.95** (2.76)</td>
</tr>
<tr>
<td>Rural</td>
<td>.651 (.288)</td>
<td>2.21 (.886)</td>
</tr>
<tr>
<td>HWY</td>
<td>3.80* (2.13)</td>
<td>3.88 (1.62)</td>
</tr>
<tr>
<td>Time</td>
<td>.830 (.441)</td>
<td>.996 (.475)</td>
</tr>
<tr>
<td>Mobil</td>
<td>-8.54* (-2.31)</td>
<td>-6.89 (-1.65)</td>
</tr>
<tr>
<td>ContgJobs</td>
<td>-.020 (-.159)</td>
<td>-.028 (-.212)</td>
</tr>
<tr>
<td>HC</td>
<td>69.81* (2.05)</td>
<td>67.19 (1.39)</td>
</tr>
<tr>
<td>Rural * HC</td>
<td>-82.65 (-1.75)</td>
<td>-146.16* (-2.39)</td>
</tr>
<tr>
<td>Time * Rural</td>
<td>-1.47 (-1.66)</td>
<td>-1.34 (-1.27)</td>
</tr>
<tr>
<td>Time * HWY</td>
<td>-1.13 (-1.76)</td>
<td>-8.40 (-.895)</td>
</tr>
<tr>
<td>Post1990 * HWY</td>
<td>n/a</td>
<td>-2.01 (-1.22)</td>
</tr>
<tr>
<td>Time * Mobil</td>
<td>8.85** (2.35)</td>
<td>6.39 (1.60)</td>
</tr>
<tr>
<td>Post1990 * Mobil</td>
<td>n/a</td>
<td>-16.05 (-1.19)</td>
</tr>
<tr>
<td>Time * ContJobs</td>
<td>.013 (.925)</td>
<td>.029 (1.61)</td>
</tr>
<tr>
<td>Post1990 * ContJobs</td>
<td>n/a</td>
<td>-.018 (-.640)</td>
</tr>
<tr>
<td>Time * HC</td>
<td>-6.65 (-.886)</td>
<td>-5.80 (-.440)</td>
</tr>
<tr>
<td>Post1990HC</td>
<td>n/a</td>
<td>32.50 (1.27)</td>
</tr>
<tr>
<td>Time * HC * Rural=0</td>
<td>34.79** (3.93)</td>
<td>55.54** (3.49)</td>
</tr>
<tr>
<td>Post1990 * HC* Rural=0</td>
<td>n/a</td>
<td>-16.20 (-.531)</td>
</tr>
</tbody>
</table>

**Model Fit (-2LL)**

|                | 2262                  | 2186                  |

**Random Effects**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual (Within-Co. Variation)</td>
<td>7.95</td>
</tr>
<tr>
<td>Between-Co. Intercept Variation</td>
<td>1279.5</td>
</tr>
<tr>
<td>Between-County Slope Variation</td>
<td>54.9</td>
</tr>
</tbody>
</table>

Note: MLM coefficients are fixed effects, and variance components are random effects. All variables are centered on their grand mean. p < .05 *, p < .01 **. t-statistics in parentheses.
4.3 Hypothesis Three

Q3. Do investments in human capital cause a higher rate of economic development in non-rural counties than investments in human capital in rural counties?

H3a. Human capital investments in non-rural counties do not cause a higher increase in economic development than human capital investments in rural counties.

H3b. Human capital investments in non-rural counties cause a higher increase in economic development than human capital investments in rural counties.

The goal of hypothesis 3 was to determine whether investments in human capital caused a different level of economic growth in rural versus non-rural counties. The hypothesis was evaluated using correlation and MLM analysis. Significant results of the analysis allow rejection of the null hypothesis that human capital investments in non-rural counties do not cause a higher increase in economic development than human capital investments in rural counties.

Strong positive correlations were found between human capital investment and the number of jobs, and the strength of the correlation increased throughout time. Correlation analysis for rural counties is shown in Table 7, and correlation analysis for non-rural counties is shown in Table 6. Investments in human capital possess a stronger correlation with jobs in non-rural counties than with jobs in rural counties. For non-rural counties the correlation between human capital and economic growth was .433 in 1960, increased throughout the decades, and was .481 by 2000. For the rural counties correlation in 1960 was .313, and by 2000, the correlation had grown to .519. The strength of the correlation between human capital investment and job growth increases with each passing decade. The finding is consistent with similar studies of other regions (Barkley et al., 2005; Beaulieu & Gibbs).

### Table 5: Correlation Analysis for Rural Counties

<table>
<thead>
<tr>
<th>Number of Jobs</th>
<th>Investment in Human Capital Per Decade</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 Pearson Corr</td>
<td>.519*</td>
</tr>
<tr>
<td></td>
<td>(.001)</td>
</tr>
<tr>
<td>1990 Pearson Corr</td>
<td>.518*</td>
</tr>
<tr>
<td></td>
<td>(.001)</td>
</tr>
<tr>
<td>1980 Pearson Corr</td>
<td>.490**</td>
</tr>
<tr>
<td></td>
<td>(.001)</td>
</tr>
<tr>
<td>1970 Pearson Corr</td>
<td>.493**</td>
</tr>
<tr>
<td></td>
<td>(.001)</td>
</tr>
<tr>
<td>1960 Pearson Corr</td>
<td>.443**</td>
</tr>
<tr>
<td></td>
<td>(.002)</td>
</tr>
</tbody>
</table>

p < .05 *, p < .01 **; N = 46. P-values in parentheses.

### Table 6: Correlation Analysis for Non-Rural Counties

<table>
<thead>
<tr>
<th>Number of Jobs</th>
<th>Investment in Human Capital Per Decade</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 Pearson Corr</td>
<td>.481*</td>
</tr>
<tr>
<td></td>
<td>(.027)</td>
</tr>
<tr>
<td>1990 Pearson Corr</td>
<td>.446*</td>
</tr>
<tr>
<td></td>
<td>(.042)</td>
</tr>
<tr>
<td>1980 Pearson Corr</td>
<td>.375</td>
</tr>
<tr>
<td></td>
<td>(.094)</td>
</tr>
<tr>
<td>1970 Pearson Corr</td>
<td>.363</td>
</tr>
<tr>
<td></td>
<td>(.106)</td>
</tr>
<tr>
<td></td>
<td>(.172)</td>
</tr>
</tbody>
</table>

p < .05 *, p < .01 **; N = 21. P-values in parentheses
Analysis of hypothesis 3 continued with MLM regression analysis, the results of which are presented in Table 8. Model 1 allows the slopes of the regression lines to vary, as indicated by the interactions with time. Model 2 removes insignificant covariates and adds the rural variable to test whether the type of county affected the parameter estimates. Model 4 included rural, where 1= rural and 0= non-rural, and an interaction between HC and rural to determine how human capital affected the intercept for each county. The regression added an interaction variable among time, HC, and rural, which determined how the slope, or the rate of economic growth, differed based on type of county.

Table 7: Multilevel Regression Statistics for Hypothesis 3

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>19.95** (2.52)</td>
<td>18.87** (3.39)</td>
<td>16.08** (2.94)</td>
</tr>
<tr>
<td>NatAmen</td>
<td>-7.235 (-.841)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Rural</td>
<td>n/a</td>
<td>-3.68* (-2.03)</td>
<td>.651 (.288)</td>
</tr>
<tr>
<td>HWY</td>
<td>5.7825** (2.99)</td>
<td>5.75** (3.12)</td>
<td>3.80* (2.13)</td>
</tr>
<tr>
<td>Time</td>
<td>2.56 (.807)</td>
<td>.938 (.491)</td>
<td>.830 (.441)</td>
</tr>
<tr>
<td>LFP</td>
<td>3.732 (.424)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Mobil</td>
<td>-13.24** (-3.68)</td>
<td>-13.05* (-3.93)</td>
<td>-8.54* (-2.31)</td>
</tr>
<tr>
<td>ContigJobs</td>
<td>-.134 (-.968)</td>
<td>-.091 (-.663)</td>
<td>-.020 (-.159)</td>
</tr>
<tr>
<td>HC</td>
<td>n/a</td>
<td>n/a</td>
<td>69.81* (2.05)</td>
</tr>
<tr>
<td>Rural * HC</td>
<td>n/a</td>
<td>n/a</td>
<td>-82.65 (-1.75)</td>
</tr>
<tr>
<td>Time * NatAmen</td>
<td>-1.614 (-.795)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Time * Rural</td>
<td>n/a</td>
<td>.799 (1.24)</td>
<td>-1.47 (-1.66)</td>
</tr>
<tr>
<td>Time * HWY</td>
<td>-1.896** (-2.72)</td>
<td>-1.88** (-2.89)</td>
<td>-1.13 (-1.76)</td>
</tr>
<tr>
<td>Time * LFP</td>
<td>-1.223 (-.274)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Time * Mobil</td>
<td>12.1799** (3.28)</td>
<td>12.43** (3.38)</td>
<td>8.85* (2.35)</td>
</tr>
<tr>
<td>Time * ContigJobs</td>
<td>.0336* (2.11)</td>
<td>.027 (1.84)</td>
<td>.013 (.925)</td>
</tr>
<tr>
<td>Time * HC</td>
<td>n/a</td>
<td>n/a</td>
<td>-6.65 (-.866)</td>
</tr>
<tr>
<td>Time * HC * Rural</td>
<td>n/a</td>
<td>n/a</td>
<td>34.79** (3.93)</td>
</tr>
<tr>
<td>Model Fit (-2LL)</td>
<td>2306</td>
<td>2304</td>
<td>2262</td>
</tr>
</tbody>
</table>

Note: MLM coefficients are fixed effects, and variance components are random effects. All variables are centered on their grand mean. p < .05 *, p < .01 **. t-statistics in parentheses.
The rural variable was not significant when the model accounted for HC, mobility rate, and the other variables in the model. When the rural variable was interacted with HC and time to create a slope variable, then it became significant at p < .01. The more important regression estimate for the study is the significant estimate of the interaction variable between time, HC, and the type of county. The variable measured the slope, enabling evaluation of human capital's role in economic development in both rural and non-rural counties. The slope for rural counties was an insignificant -6.65, and the slope for non-rural counties was a significant 34.79. The difference between the two estimates is the difference in the rate of economic growth. Each decade, with each increase in one percentage point of human capital investment, non-rural counties added 41,440 more jobs than rural counties did. The insignificant estimate of the slope of the rural counties' relationship with human capital indicated that the rural counties did not gain any discernible change in economic growth when their population became more educated.

The findings are consistent with the literature. Other studies showed a lower benefit to rural counties than to non-rural counties when they invest in human capital (Beaulieu & Gibbons, 2005; Goetz & Rupasingha, 2005; Smith, 2006). The implications of the findings point to different economic development strategies for rural versus non-rural counties. Non-rural counties receive a high return on their human capital investment, which will continue encouraging human capital investment as part of their economic development strategies. Rural counties have not experienced the same level of return on investment in human capital, and will therefore need to incorporate human capital into a more diverse economic development strategy.

5. DISCUSSION

The results of the first research question indicated that every one percentage increase in the population that graduates from college causes an increase of 13,440 jobs per decade. Results are significant at p < .05. Increasing investments in human capital in one time period causes economic development in the next time period. The human capital variable not only caused economic development, it caused a greater level of economic development than any other variable in the analysis.

Implications of the findings apply to individuals and policy makers. The future payoff to the investment in human capital was shown to be greater than highways, natural amenities, geographic mobility, activity in surrounding counties, and the labor force participation of the population. Implications of the study include encouraging individuals to invest in education as the most important means of securing future employment. Policy makers and business leaders are also provided with substantial return on investment as a result of the study. The results will encourage community leaders to increase investment in the education of their citizens.

The conclusion that 13,440 jobs are created for every one percentage increase in the population that graduates from college represents greater returns on investment than the returns on existing investments in economic development. For example, the state's largest private employer is the Honda plant in Lincoln, Alabama, which employs 6,000 workers (Alabama Department of Industrial Relations, 2009). Investing in human capital provides more than twice as many jobs as the state's largest employer and continues to provide jobs every decade.

The results of research question 2 indicate that investments in human capital cause a higher level of economic development from 1990-2000 than they did from 1960-1990. The gap between how human capital affects jobs in counties with a high level of human capital versus counties with a low level of human capital is larger and more significant with each passing decade. The employment gap between counties that invest in human capital and those who do not invest in human capital is wider in 1990 and in 2000 than in previous decades.

The implication of the finding is that the importance of a college-educated workforce is greater from 1990-2000 than it was in prior decades. In order to attract jobs to their localities, counties need to invest in human capital now more than they did in the past. The return to such investments is higher than it was in prior decades in terms of economic development.

The results of analysis of research question 3 indicated that human capital investments in non-rural counties cause a higher increase in economic development than human capital investments in rural counties. The regression analysis, whose results are shown in Appendix J, indicated that the rate of economic growth in rural counties is an insignificant -6.65, and the rate of economic growth for non-rural counties was a highly significant 34.79. The difference between the two estimates is the difference in the rate of economic growth. Each decade, with each increase in one percentage point of human capital, non-rural counties added 41,440 more jobs than rural counties did.

The implications of the findings point to different economic development strategies for rural versus non-rural counties. Non-rural counties receive substantial return on their human capital investment, which will continue encouraging human capital investment as part of their economic development strategies. Rural counties, however, have not experienced the same level of
return on investment in human capital. The result is likely caused by outmigration of educated workers. Economic development strategies in rural counties must include policies geared toward keeping their educated workers in the county, or luring them back to the county once they have finished their education (Barkley et al., 2005; Beaulieu & Gibbs, 2005).

6. LIMITATIONS

A limitation of the study was that the data for the variables was collected at the county level only during the decennial censuses. If the data were available in five-year intervals, the analysis could have been enhanced. The limitation that the employment data published by the BEA was gathered under a different methodology prior to 1969 also posed a potential problem. However, attention was given to ensuring that comparable employment figures were used in the study from decade to decade, which reduced the likelihood of erroneous conclusions being drawn.

A similar limitation was found in the data for geographic mobility, which was collected differently in the 1950 decennial census than it was in more recent censuses. The year 1950 was used as time zero, and the counties had little variation in most of the variables in that decade. The focus of the study was on later decades, so the change in definition of the variable after 1950 did not affect the conclusions drawn for the variables in later time periods.

A limitation of the study was that the results had the potential to not be generalizable from Alabama to other geographic units. In the current study, labor force participation, natural amenities, and jobs in contiguous counties were not found to be significant determinants of economic development, once the other variables were added to the models. Other studies of economic development suggest that the variables are significant in larger geographic regions (Barkley et al., 2005; Goetz & Rupasingha, 2005; Levernier, 2003). However, the main variable examined in the current study was human capital, which was significant in all models. The lack of significance of other variables did not pose a problem when interpreting the results of human capital's effect on economic development.

7. RECOMMENDATIONS AND CONCLUSIONS

The findings contain practical applications for all localities seeking better economic development strategies. The finding that human capital has a strong causal relationship to economic development provides rationale for increasing the human capital of a county. If the county increased by one percentage point the number of people that graduate from college, the county could add 13,440 jobs per decade. The findings of the study suggested that increasing human capital was the most significant variable in determining economic development.

A recommendation resulting from the findings is that economic development strategies in rural counties should be different than non-rural counties’ strategies. Rural counties should incorporate human capital into a diverse economic development strategy that includes policies aimed at keeping educated workers living in the county, or aimed at encouraging educated workers to return to the county (Barkley et al., 2005; Beaulieu & Gibbs, 2005). Developing a good education system should be part of this strategy so that returning workers can provide a good education for their children. Reducing class sizes has been shown to be successful in not only improving educational outcomes but also in attracting workers to a locality (Beaulieu & Israel, 2005; Hanushek & Woessmann, 2008).

Localities must also reduce the high school drop-out rate. This recommendation is important to Alabama, which has the fourth highest high school drop-out rate in the nation. Only 75.3 percent of students in Alabama graduate from high school, compared to 80.4 percent in the rest of the U.S. (U.S. Census Bureau, 2009). Many counties in Alabama allow students to drop out of high school at age 16 without parental consent. A policy recommendation is to require students to stay in school until the age of 18 or require parental consent to drop out before that.

Another recommendation is that policy makers focus on keeping families together. Research demonstrates a link between family environments and educational attainment (Beaulieu & Israel, 2005; Lehrer, 2001; Pandey et al, 2006). Children raised in stable, two-parent families are more likely to graduate from high school and college than children raised in other household arrangements. The federal Temporary Aid to Needy Families is a positive step in reducing poverty, but more needs to be done to encourage stable families. Counties should enhance relationships among schools, government agencies, and community groups. This is particularly applicable to Alabama, which has the third highest percentage of families headed by single females (U.S. Census Bureau, 2009). Future research should include how human capital and family social capital interact to improve economic development and other social and financial outcomes. The interaction between human capital and family social capital provides better economic outcomes than either type of capital by itself (Beaulieu & Israel, 2005; Lehrer, 2004; Pandey et al., 2006; Sanders & Nee, 1996; Seo, 2005).
REFERENCES


THE RELATIONSHIP OF PERSONAL CREDIT BEHAVIOR TO ORGANIZATIONAL BEHAVIOR

Louis F. Jourdan
Clayton State University, USA

ABSTRACT
The purpose of this study was to determine if personal financial behavior (creditworthiness) is related to employee behavior regularly studied in the fields of human resources and organizational behavior. Previous research on biodata has used a variety of criteria such as performance ratings, turnover, absenteeism, and creativity. Only three studies were identified which utilized a similar criterion, turnover, instead of tenure, with personal financial history as predictors. This research found that personal financial history, which includes satisfactory and unsatisfactory payment, was significantly correlated with employee tenure (p<.0001). The validity coefficient of .35 compared favorably with average validity coefficients found in Hunter and Hunter’s (1984) biodata meta-analyses and Reilly and Chao’s review (1982). This is one of the first studies to successfully predict work-related behavior from personal financial behavior. This investigation confirms not only the robustness of biographical information, its generalized validity and transportability across situations, but also suggests its transportability across criteria. The study’s weaknesses, strengths, and directions for new research were discussed.

Keywords: Credit Behavior, Tenure, Biodata, Biographical Data, Credit History

INTRODUCTION
The use of biographical data, or biodata, to predict organizational behavior has a long history. It has successfully been used to predict theft (Rosenbaum, 1976), performance (Rothstein, Schmidt, Erwin, Owens, and Sparks, 1990), productivity, creativity, earnings, performance appraisal ratings, honesty, managerial effectiveness, accident rates (Laurence and Waters, 1993), adjustment, satisfaction, team performance, and safety (Hough and Paullin, 1994; Hunter and Hunter, 1984; Mumford and Owens, 1982; Stokes and Cooper, 1994). However, the most popular criteria have been turnover, tenure, and absenteeism (Barge, Hough, & Dunnette, 1984). Most of the biographical information was collected from application forms or from developed biographical information blanks (BIB). The information has included factual data which could be confirmed, and it has also included data asking for an applicant’s preference for one type of activity over another, and what one’s favorite course in high school was. Research by Reilly and Chao (1982) and by Hunter and Hunter (1984) indicated that average validity coefficients for biographical information were in the mid .30s (.35 and .37, respectively). The viability of biographical information has been recognized by researchers.

Research on the efficacy of personal credit behavior to predict behavior in organizations has been largely lacking. There are, however, a few exceptions. Three published studies could be identified which examined this issue (Palmer & Koppes, 2003; Palmer & Koppes, 2004; Oppler, Lyons, Ricks, & Oppler, 2008). These studies’ criteria were performance, turnover, and counterproductive work behavior. The study by Oppler et al. was the only study to find a significant relationship between personal financial behavior and the organizationally-relevant behavior of counterproductive behavior.

Even though there are few studies which have validated the use of personal credit behavior, background checks, which can contain credit information and credit history information, which is typically obtained from credit bureau reports have been frequently used in the hiring process, particularly for those positions which require financial transactions. Nearly half of retail employers use credit checks to screen applicants, and more than one-third of firms use applicants’ credit histories as part of their hiring process (SHRM, 2004). The justifications for using credit-related instruments, e.g. credit checks, credit history, background checks, and credit scores, is threefold. One, they intuitively seem to measure an employee’s conscientiousness, dependability, and reliability, and ability to accept responsibility. Two, they are deemed appropriate for positions which involve financial transactions and those experiencing the stress of financial pressures may be more likely to steal. Third, past behavior is a good predictor of future behavior (Palmer & Koppes, 2004; Nielsen & Kuhn, 2009).

Despite their use or because of their use, lawsuits associated with negative reference checks have been made public (SHRM, 2001). In recent years, the legal requirements for using credit bureau reports to screen job applicants have increased. The Fair Credit Reporting Act (FCRA), a Federal law regarding the acquisition and use of “consumer reports” for employment purposes, identifies a four (4) step process for employer use of consumer reports when making employment decisions. Step one, a
written notice to the applicant to obtain the applicant’s authorization to obtain the report; in step 2, the employer must certify to the reporting agency that it is complying with the FCRA; for step 4, the employer must provide a “pre-adverse action notice” to the applicant or employee, and fourth, the employer may take final adverse action by furnishing the applicant with an adverse action notice” (Butler and Tyson, 1999). Despite the fact that these data have been and are currently being used as part of the application process, there have been few, if any, research efforts which have attempted to develop objective means of evaluating credit history information to make employment decisions. Given the lawsuits which have been filed, the continued use of such information, and the judgmental nature of decisions using these data, only three published studies could be identified which examined this issue (Palmer & Koppes, 2003; Palmer & Koppes, 2004; Oppler, Lyons, Ricks, & Oppler, 2008).

While Credit history information, however, has been objectively scored for the purpose of evaluating one’s credit worthiness, to assess the risk of approving a person for credit, for almost sixty years. This technique is typically termed “credit scoring”.

PURPOSE

The purpose of this study was to determine if past personal credit behavior can predict future credit behavior. Specifically, the objective of the study was to determine the efficacy of credit bureau information to predict time on the job (tenure).

METHODOLOGY

Sample

A sample of 268 loan applications over a two year period was randomly selected in a financial institution in the eastern part of the United States. Data from credit bureau reports were utilized.

Dependent Variables

The dependent variable was a measure of non-financial behavior, tenure, which has been frequently studied in OB and HR. Tenure, defined as the number of years at current job, was collected from the application. The median tenure was 8.0 years, and the average tenure for this sample was 10.1 years, with a standard deviation of 7.89 years. Tenure ranged from 6 months to 23 years.

Independent Variables

The independent variables were collected from credit bureau reports and included information on both satisfactory credit history, that is, financial obligations were paid on time, and delinquencies both minor and major delinquencies such short-term delinquencies (30, 60, 90 days), and long-term delinquencies (over 90 days), and derogatory information (collections, liens, bankruptcies, repossessions).

Analysis

Multiple regression analysis was used to identify those independent variables which are related to tenure (TENURE). Cross-validation was not performed. The purpose of this study was to identify variables which were related to tenure, but not to develop a predictive model. To use as a predictive model, cross-validation would be required.

RESEARCH RESULTS

The results of the multiple regression analysis determined that certain personal credit history variables are statistically and significantly related to years at current job (TENURE). Specifically, the number of satisfactory ratings, and two measures of serious delinquency. For the sample of 268, the multiple correlation coefficient was .35 with an F-ratio (3, 264) of 12.186 (p<.001). Squared multiple R was .122, and adjusted squared multiple R was .112.

DISCUSSION

Limitations

There were at least three (3) weaknesses of this study. First, while the subjects in the study received credit from numerous other companies, the data were collected on people who applied and received credit from one institution. Therefore, it suffers the same weakness, the same degree of external validity as other studies which have used data from only one organization. A
second weakness was that the statistical model examined in this study was not developed specifically to predict years at present job. Rather, the predictive model was developed to predict delinquency in the payment of loans and credit. Despite that fact, the model was able to predict tenure. A third weakness was the limited availability of other organizationally relevant behavior such as absenteeism, performance, theft, and integrity. Additionally relevant variables would have improved the study.

Strengths

First, this study was one of the first identifiable, published studies successfully confirming the efficacy of objectively scored credit history information, specifically in the form of a credit scoring model, to successfully predict a behavior that is relevant to and of interest to those professionals in organizational behavior, human resources, and industrial/organizational psychology. It is a step toward establishing the job-relatedness of objective measures of credit behavior through criterion-related validity. Second, this information is not self-report, as is most other biodata studies. With self-report data, the applicant has the opportunity to provide socially desirable responses rather than accurate responses. Prior research has demonstrated that biodata can be faked when participants are instructed to do so (Hough, Eaton, Dunnette, Kamp, and McLoy, 1990; Becker and Colquitt, 1992). One study confirmed that non-verifiable item validity was lower than for verifiable applicant information (Harold & McFarland, 2006). The data were obtained from a source independent of the applicant. The predictors in this study were objective, verifiable, and controllable. Historically, research using biodata, either from biographical inventories or from job applications, has been largely obtained from self-report sources which can influence whether by conscious or unconscious efforts to enhance one's answers (Goldstein, 1971). Despite the fact that some researchers have developed various techniques to detect faking and lying, the success of these techniques has been debatable (Edwards, McBride, Waters, and Laurence, 1993). Credit history, as reported on credit bureau reports, was obtained from independent sources, the organizations from which the individual has applied for credit. Third, the data are objective and quantitative. Most of the data were reported in terms of number of loans obtained, number of applications made, number of inquiries made to the credit bureau and numerous dollar amounts. The data on credit history is obtained from a source other than the applicant, and is an independent report of behavior. Fourth, the collection of this data is non-intrusive and response rate is not a significant issue for personal credit history data. With the collection of biographical data, particularly in the form of biographical inventories, the response rate may be of a concern. Credit history information is generally reported monthly electronically by merchants who use the credit history information themselves. Fifth, this study utilizes tenure, a frequently investigated criterion in human resources, organizational behavior, and industrial/organizational psychology in conjunction with a unique set of predictors.

Significance of Study

While some studies may exist, through an electronic search of the literature, no other studies could be identified which successfully used objective, personal credit history data to predict non-financial behavior, specifically behavior which, historically, has been of interest to human resource professionals and those in the areas of organizational behavior and industrial/organizational psychology. There have been no published studies on the validity of credit checks for hiring employees (Kuhn & Nielsen, 2008; Nielsen & Kuhn, 2009). Because of the quantity and objective nature of these data, they offer great potential to predict organizational behavior. The choice of dependent variables was made for two (2) reasons: their applicability to behavior relevant to organizational behavior and interest in these behaviors as reflected by past research. Tenure as predicted by biographical data has been a popular topic of research (Barge et al, 1984; Guion, 1965). Second, economic stability (Childs and Klimoski, 1986) and employment experience (McDaniel, 1989) have been constructs investigated in research and development of biographical inventories. Mael and Connerly (1996) included “credit risk information” in their investigation of the perceived invasiveness of selected biodata items.

The validity coefficient for predicting tenure from personal credit history was quite favorable compared to earlier research findings. In this study, the validity coefficient was .48. In comparison, one study which reviewed 58 studies using biographical information to predict a variety of criteria found an average validity of .35. (Reilly and Chao, 1982) Furthermore, Hunter & Hunter's (1984) meta-analysis of biographical information blanks, identified an average validity coefficient of .37.

Financial behavior is manifested in such traits as conscientiousness, dependability, impulse control, and decision-making. It is one area of behavior that has the potential to be linked to behavior in other arenas. Such areas of interest could be the prediction of employee theft and integrity, including drug use, and the prediction of performance. Use of credit history information in employee selection is readily justifiable for those positions where money is exchanged, in financial transactions. Personal credit behavior holds the potential for being linked to Hogan and Hogan's organizational delinquency construct. (Hogan and Hogan, 1989).
Oppler et al (2008), found that two self-report measures of significant adverse financial history were related to counterproductive work behaviors. Research evidence linking credit behavior (delinquency) to other forms of organizational delinquency such as drug use or theft could justify its use. Particularly, since both drug use and theft have financial consequences. Furthermore, biographical data has demonstrated promise in predicting personality and temperament such as employee suitability (McDaniel, 1989) conscientiousness, dependability, emotional stability and adaptability (Trent & Laurenc, 1993).

Recent research has confirmed that biodata is generalizable across organizations. (Carlson and Scullen, 1999; Rothstein, Schmidt, Erwin, Owens, and Sparks, 1990; Wilkinson, 1997). Therefore, the validity generalization of biodata to predict the same behavior, the same criterion, across situations has been confirmed. However, few, if any studies, have successfully examined biodata’s generalizability across criteria. In this study, it was determined that selected biographical data validated using one criterion, credit worthiness, could successfully predict another criterion, tenure.

Future Research
The use of personal credit history data to predict organizational behavior has great potential. In particular, there are several directions for future research. First, given the research on the “five factor personality model (FFM) (e.g. Barrick and Mount, 1991; Organ, 1994; Judge, Martocchio, and Thoresen, 1997), a logical direction would be to study the relationship between personal credit history and personality. It intuitively appealing that these behaviors reflect those predicted by the factors of conscientiousness, emotional stability and openness to experience. Mount and Barrick (2000) discovered that “biodata predictors accounted for a substantial incremental variance beyond that accounted for by the FFM and general mental ability for three of four criteria examined.

Second, this research suggests that credit history may predict integrity, honesty, given the identification of one of two (2) types of integrity tests, overt integrity tests which include the assessment of prior behavior. This could readily be a form of integrity test which does not rely on applicants’ self responses (Sackett, Burris, and Callahan, 1989). These efforts have shown a relationship between personalities, organizational delinquency, including drug use. Delinquent credit history is one form of delinquency which may have the potential of being related to certain forms of organizational delinquency. Therefore, a third direction is the examination of organizational delinquency and how one manages his/her finances. In some situations, where employers have established credit unions for their employees, their satisfactory repayment of loans to the credit union may be considered a form of organizational citizenship or another form of behavior relevant to the organization. A fourth direction is to perform additional research with the same criterion, tenure, as well as other organizationally relevant and available criteria. A fifth direction is to identify possible moderators for the different criteria using individual financial behavior. Some researchers have encouraged the examination of age, experience, education, gender, and race as potential moderators (Asher, 1972; Laurent, 1962; Thayer, 1977). In summary, because of the dearth of research linking employee behavior and prior financial behavior, there are many directions available for future research.

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OBJECTIVITY THEORY OF GOOD GOVERNANCE

Jan Mohammad
University of Balochistan, Pakistan

ABSTRACT
The aim of this research article is to develop a new theory of good governance. Many social scientists and governance experts have defined and explained the characteristics of good governance but they failed to find the true bases of it. This research article emphasizes objectivity as the basic element of good governance. The article is conceptual in nature and mainly based on the intuition of researcher.

Keywords: Government, Governance, Good Governance, Bad Governance, Objectivity, Subjectivity.

INTRODUCTION
Good governance is a significant issue in the contemporary world and has become a buzzword these days. Its extensive use by academia and practitioners has brought its importance to the limelight globally. The importance of good governance arose due to its profound impact on the economy and social behavior. It is based on lessons from history which records both the downfall of nations resulting from bad governance and also lesson of how nations have risen to great heights as a consequence of good governance. There is general consensus among planners and economists that the best mechanism to sustain growth in future is to ensure effective governance. The efficient allocation of resources to ensure wide spread and equitable economic and social development of a nation is the basic responsibility of any government and this can only be achieved through good governance. Good governance and effectively functioning institutions are required to improve resource allocation, enhance productivity and distribute the benefits of growth more equitably in the economy. Good governance work through effective institutions. Institutions are rules that shape the behaviour of organizations and individuals in a society. Institutions constitute the incentive structure for the behaviour of organizations and individuals. The former UN Secretary General Kofi Annan once remarked, “Good governance is perhaps the single most important factor in eradicating poverty and promoting development”. The incidence of poverty is one measure of whether governance in any nation or state is good or bad. Good governance thus has become a crucial element in the strategy for promoting development and welfare. It provides equal opportunity for personal growth and development to every citizen residing within the boundaries of country irrespective of his religion, cast, color, and political affiliation. Poor governance leads to, nay encourages and breeds corruption. Good governance constrains the action of corrupt officials and reducing corruption stimulates technological change and encourages economic growth. It is critical to success and has direct impact on the citizens’ lives. Good governance is every thing that promotes justice, merit and objectivity. It is responsive, transparent, efficient, democratic and promoter of rule of law. It is a relative term and is measured by the degree to which it delivers its functions to the human benefits. It shows to what extent the institutions of governance are effectively guaranteeing the delivery of functions entrusted to them by the society. Weak institutions have strong and significantly negative effect on economy and play a considerable role in bringing about low economic growth, thus leading to poverty. Most planners and economists agree that the best mechanism for sustaining growth into the future is to ensure effective governance.

Many political and social scientists have defined the word according to their vision and intellect and also enumerated its various characteristics. The focus of the experts concerning the nature of good governance varies from person to person. They are not unanimous about the nature of good governance. Opinions of experts vary for the meaning and characteristics of good governance. Every one of them have focused separate dimensions of good governance and expressed their opinion to emphasize their version of good governance. There is some consensus though among theorists and practitioners about the main characteristics of good governance with slight variations. The focus of this research article is on the development of a theory and systems where interaction among human is within the purview of a system that ensure objectivity. The study is descriptive in nature and the use of intuition by the researcher to build a theory is the bases of this research article. A secondary source of data to support the researcher idea is also used.

LITRATURE REVIEW
Good governance has gained significant attention in the world especially in the last decade. Until the later 1980s, governance was not a word heard frequently. According to an increasing amount of economic, social and political theory economic and political life has undergone a transition “from government to governance”. This transition has one significant aspect of how the
state and bureaucracies should work and respond to the public demands effectively. The widespread and pessimistic view of the governments' abilities to effectively deal with the complexities and fragmentation characterizing the modern world has led to the transition from government to governance and eventually to good governance.

Government refers to all those organizations charge with the task of reaching decisions for the whole community. Broadly, the government consists of institutions responsible for making collective decisions for society. Governance, by contrast, refers to the process of making collective decisions. The distinction between the government and governance is that the former refers to the structure while the latter refers to the activity, process or quality of governing. Governance refers to the manner in which power is exercised in the management of a country's economic and social resources. Thus governance is the task of managing complex societies. It involves building consensus, or obtaining the consent or acquiescence necessary to carry out a programme, in an arena where many different interests are in play. Governance was never allowed to become a conceptual straight-jacket. Despite its widespread use, the term of governance implies a concept that remains relatively ambiguous and the use of governance arguments in a wide range of fields multiplied interpretation of the term. It has been used by groups of very different ideological persuasion, for a number of different and often contradictory ends. Scholars, governments, development assistant agencies define and analyze the term within their interests and scope of work. One major source of ambiguity is that governance can be analyzed both as an object of theoretical inquiry and as a policy paradigm. Good governance on the other hand is a relative term which is qualitative in nature. In the governance discourse, good governance presents itself as a moral paradigm, distinguishing between the good, the bad and the evil. What is good and bad governance thus turns out to be a moral judgment, on the one hand, and relativist and subjectivist, on the other. Good governance is therefore a compartment of governance, wherein public capital and problems are managed effectively, efficiently and in response to vital needs of society. Today there is an increasing amount of research on the factors that leads to good or bad governance in the world. The quality of governance, to be good or bad is expressed by many researchers through elements and dimensions. They are however unanimous that good governance is participatory, transparent and accountable, and promotes the rule of law. Organizations like United Nations Development Programme and the World Bank have reflected on the elements of good governance. In its report, Governance for Sustainable Human Development, the UNDP acknowledges the following as core characteristics of good governance.

1. Participation
2. Rule of law
3. Transparency
4. Responsiveness
5. Consensus orientation
6. Equity
7. Effectiveness and efficiency
8. Accountability
9. Strategic vision

The above mentioned characteristics reveals that the heart of achieving good governance is building the appropriate institutional mechanism that would ensure that political, social and economic priorities are based on broad consensus in society and that the voices of the weak and the most vulnerable are heard in decision-making.

OBJECTIVITY THEORY OF GOOD GOVERNANCE

Objectivity is the basic theme of good governance. All the dimensions and characteristics of good governance mentioned by the political scientists, researchers and international organizations have one common objective i.e. to ensure objective treatment. They are objectivity-centric. Objectivity and subjectivity are the two extremes. Good governance is as objective as possible. In order to promote objectivity, systems are developed. Systems treat every citizen equally irrespective of their social, religious and ethnic status. Every system has sub-systems which are interconnected with one another to support the main system. Systems promote objectivity by reducing personal influences on decision making. When system becomes strong, personal influences wither away and objectivity is restored and a weak system allows influential and powerful to take advantage of the weaknesses of the system and mould decisions according to their own way. Without developing systems, it is very hard for the human to be objective because of his personal taste, prejudices and likes and dislikes. Systems are visible and non-visible. Physical and mechanical systems are visible but social systems are not visible and therefore expressed in rules and regulations and exist in writing. Strong systems reduce violation of rules and regulations by individuals. Governance is a social arrangement whereby social systems are developed to balance diverse interests of all stake holders. But absolute objectivity in governance is not possible because of the human element in the organizational arrangement that may cause the treatment and decisions to be partially objective. The good governance decisions are made on relative merit. Merit is also a
social system that gives worth to those who deserve them. Merit increases when the number of minds involved in decision making increases. Collective decision making is therefore preferred for individual decision making. Perfect merit may not be possible because of human judgment in the decision making process that is influenced by stereotyping and halo effect. In the objectivity theory of good governance when majority of stake holders are involved in the decision making process personal influences decreases and objectivity increases and ensures good governance. When objectivity increases decisions are more transparent and are made on relative merit. Objectivity theory of good governance resembles closely to the natural systems. Nature is quite objective. The natural phenomena are in a delicate state of balance. When human activities disturb that balance, problems arise. Natural forces bring things near to objectivity while human forces take them away from objectivity. Similarly personal judgment and biases take decisions away from objectivity and bring them close to subjectivity. Objectivity brings stability while subjectivity promotes instability. When decisions are made in such a way that all the stake holders’ desires are satisfied is an absolute merit. But because of the difference in interests, motives, tastes and personalities, absolute merit is not possible. The objectivity and subjectivity trade-off is shown below.

Subjectivity is derived from the word subjective the dictionary meaning of which is, “influenced by personal feelings and therefore perhaps unfair”^{18}. Objectivity is the opposite of subjectivity and means, “not influence by personal feelings or opinions; fair”^{19}. Subjectivity results into unfair treatment and finally leads to poor governance. In the governance context when decisions and treatment are made on the personal likes and dislikes by few in the institutions of the society, poor governance results. In such institutions individuals are more important than system. Decisions are more personal and people are bestowed with discretionary powers. Individuals’ tastes are the determinants for what is good or bad for society. People in the high echelon lead the organizations according to their free will. In such institution difference of opinions have no room and is considered to be offensive and culminates in adverse reaction. Collective and participatory decisions making are out of consideration in such circumstances.

Objectivity leads to good governance. Good governance refers to the complex set of rules systems and mechanisms governing the country in an efficient and effective way to balance the interests of different stakeholders. In the management of collective property where diverse interests of multiple stakeholders are involved objective systems are developed to balance the interests of all stakeholders. Systems work through institutions. The heart of achieving good governance is building the appropriate institutions^{20}. The term institution is broadly defined as an organization or establishment constituted for the promotion or fulfillment of particular purpose. Social institutions are rules that shape the behavior of organizations and individuals in a society. Good institutions facilitate society in many ways. Institutions regulate our activities together. When the national institutions work more objectively and the personal tastes are ignored, decisions are made collectively, good governance results. In such institutions people are not important but systems are important. Institutions are established to constraint the power of influential and protect the poor. It ensures that political, social and economic priorities are based on broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision making over the allocation of economic resources. Inclusive and fair rules, institutions and practices govern social interactions. Good governance and smoothly functioning institutions are important for economic prosperity and progress of nations.

**RELEVANCY OF OBJECTIVITY THEORY WITH THE CHARACTERISTICS OF GOOD GOVERNANCE**

Governance is generally conceived of as the exercise of economic, political and administrative authority to improve the quality of life of people and is a continuing process where divergent opinions and desires are satisfied through compromise and tolerance in a spirit of cooperative action for the mutual benefits of the larger whole^{21}. The exercise of economic, political and administrative authority must be as objective as possible to ensure good governance. The characteristics of good governance
mentioned by political scientists, planners and international agencies have one core value of ensuring objectivity. Good governance, according to United Nations Development Programme (UNDP), is participatory, promotes the rule of law, transparent, responsive, promoter of consensus and equity in society, efficient and effective in operation, accountable to the public and has strategic vision. All these characteristics aim at promoting objectivity and eliminating discretionary powers. The interaction between the quality of governance and democracy, the rule of law, transparency, responsiveness, equity, and efficiency determines the success of state institutions. Good governance should be participatory in nature so that all men and women have a voice in decision making, either directly or through legitimate intermediate institutions that represent their interest. Such broad participation ensures objectivity and constrained arbitrary powers. Rule of law is another objective treatment of citizens by countries’ judicial system. Every citizen is equal in the eyes of law irrespective of their status, cast, creed colour etc. No one can get amenity on the bases of his social status and political influence. Legal framework is fair and enforced impartially. System is said to be transparent when it is working objectively. There is free flow of information. Processes, institutions and information are directly accessible to those concerned with them, and enough information is provided to understand and monitor them. Nothing is obscure from the public eyes. Good governance is objective and responsive to the demands of all segment of the society. Institutions and processes try to serve all stakeholders with prompt and highly responsive manner. In this highly populated world where diverse opinions and interests are in play, the only objective way to balance these opinions and interests is to join the systems, processes and institutions, through which residents and groups develop consensus and mediate their differences. Good governance ensures that political, social and economic priorities are based on broad consensus in society and the voices of the weak and most vulnerable are heard in decision making. Similarly, an objective system treats all people equally. There is no room for discrimination in an objective system on the basis of gender, religion, ethnicity and colour. An objective system is to be efficient and effective. It needs to protect the public property from waste. The processes and institutions in such system produce results that meet needs while making the best use of resources. The decisions are rational and reason and not emotion form the bases of running organizations. In an objective system, decision making is transparent and decision makers are accountable to the public on whose behalf they are making decisions. In order to protect the interests of public, accountability plays important role. Accountability places limit on the discretionary powers of decision makers. And finally, as against a narrow personal judgment and vision, objectivity demands strategic vision that is free from all sorts of prejudices. Leaders and the public have broad and long-term perspective on governance and human development, along with a sense of what is needed for such development.

CONCLUSIONS

Good governance has been debated and researched over time by the academia and practitioners and the focus of their research and discussion is mainly to highlight the characteristics that lead to good governance. Opinion of people and organizations vary about the nature and characteristics of good governance. They have mentioned dimensions of good governance according to their areas of interests and the scope of their operations. The aim of this research article was to find a common base of good governance. This research article concludes that the core value of good governance is objectivity. It also concludes that the characteristics of good governance mentioned by the political scientists and international agencies have close proximity with the concept of objectivity. It has been emphasized in this research article that there is a trade-off between subjectivity and objectivity. Good governance is ensured when we move from subjectivity to objectivity in decision making. It has also been highlighted that good governance is a relative term and the degree to which governance is good or bad is measured by the degree to which it is objective or subjective in different aspects of governance. The objectivity theory of good governance is a paradigm shift in thinking and discourse for good governance and is an initiative that may foster new research in this regard to further refine this theory and give proper shape in order to make it more beneficial to the generation to come.

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4. Ibid.


Ibid.


Ibid.


Ibid. p. 866.


SCANNER WARS: WHY USE A SELF-CHECKOUT LINE WHEN CASHIERS ARE MORE EFFICIENT?

Jim Mirabella and Mohamad Sepehri
Jacksonville University, USA

ABSTRACT
This paper explores the psychology of waiting lines at a grocery store along with the performance statistics of self-service vs. cashier lines. While technology has made it possible for customers to check themselves out easily enough, and customers with one or two small items and prior experience can get through quickly enough, there isn’t often a benefit to using self-service insofar as the customer perceives it.

Research on waiting lines in stores has been ongoing for decades. We know that consumers are driven by a sense of fairness when it comes to waiting lines, and they don’t want to see others get served sooner when they arrive later. With the point-of-sale being a critical part of the retail business, it is important not to anger consumers, lest they take their business elsewhere. The choice of using self-service lines in grocery stores seems to be an exception to the psychological rule, and customers freely pass on this option without regard for others who may choose it. Yet from the merchant’s perspective, if more would choose self-service, lines would be even shorter and labor expenses would decrease, but what will convince customers to do it themselves?

The implications of these results suggest that the human element is critical to the checkout process, and the more efficient they are at it, the better for the customers and the store. While this study lends to the conclusion that stores with self-service lines would benefit from assigning an employee to the self-service during peak hours, further research would help to confirm it as having a significant impact.

Keywords: Queuing, Queue, Waiting Lines, Self-Service, Checkout, Lines.

1. INTRODUCTION
Time is money, and in the retail business, more time spent by consumers shopping can be positive, as long as the customer is not spending that time searching helplessly, but more time spent by consumers paying for their goods is negative and could jeopardize how much time is actually spent shopping or whether those consumers will return to the store. In an era of fast food and express lines where consumers look for a speedy service, the checkout systems have become a significant concern for retail managers that cannot be taken for granted.

Early research in queuing focused on identifying theoretical models to explain how consumers perceive longer than expected waits in checkout lines. Lewin’s (1943) early field theory suggested that when perceived wait time is longer than expected, the effect on customers’ responses is significantly more negative. Becker (1965); Otsu (1985); Katz, Larson and Larson (1991); Tom and Lucey (1995), and Zhou and Soman (2003) studied the psychological effects of waiting lines; these studies concluded that when a customer spends more than the expected waiting time in a checkout line, a psychological effect builds and this effect creates a negative reaction towards the store (Opara-Nadi, 2005). Weisselburg and Cowlely (1969); Foote (1976), Crahill, Gross and Magazine (1977) Jones, O’Berski and Gail (1980) produced studies concerned with how to minimize the time customers spend waiting in checkout lines. Opara-Nadi (2005) evaluated differences in self-service vs. cashier lines for speed and error rates, and found significant differences favoring cashiers. While technology continues to improve, customers despise long lines, and yet they willingly wait on long lines vs. using self-service in many cases, but why?

The consumer-buying pattern is influenced by several factors including the length of time the consumer spends waiting in line at the checkout counter. Retailers and businesses that use checkout systems in their businesses spend considerable resources searching for ways to improve their methods of customer checkout. Nevertheless, there is an overwhelming need for businesses to value customers’ time and install more efficient checkout systems to improve the efficiency of queues and waiting lines. A 1990 survey by the Food Marketing Institute (Alcott, 1991) reported that 89% of shoppers interviewed indicated that a fast checkout process is one of the top priorities in their choice of a store that meets their expectations.

The psychology of waiting lines has become as popular as the quantitative aspect of minimizing wait times. In one of their advertisements, Federal Express stated that waiting is “frustrating, demoralizing, agonizing, aggravating, annoying, time consuming and incredibly expensive.” (Maister, 1985) Perception truly is reality to a customer, and if one feels like the wait is
long or the line is moving too slowly, then it is, and the customer will decide accordingly. In a 2009 Wall Street Journal article, MIT professor Richard Larson, who conducted several studies on the psychology of people waiting in lines, concluded people will wait peacefully and patiently when they perceive a line is just and fair, but will become impatient or unruly if they feel it is not just or fair. He also found that customers will tolerate waiting times up to twice as long just to avoid unfairness. This is the one reason that most banks, airlines and fast food restaurants have switched from multiple parallel lines where customers choose a line to a single serpentine line with multiple servers which guarantees first come, first served. The goal of this queueing method is not a reduction in waiting time but rather a reduction in anxiety and an appeal to a customer’s sense of justice. (Bialik, 2009)

Larson also noted that knowing the length of the wait reduces anxiety. Phone queues, busy restaurants, and amusement park rides commonly state or display the approximate waiting time, which minimizes customer complaints and keeps them from-reneging or balking. Likewise an elevator which displays the location of the car keeps people from needless anxiety. A customer’s perception of the amount of time spent in line can have a lasting effect; this was demonstrated in prior studies showing customers overestimating their wait times by as much as 50 percent, but were more accurate when a clock was added displaying the expected wait times. As Professor Larson’s research shows, a lot goes through a customer’s mind while waiting in line, and the checkout is the final opportunity to make a positive impression on a customer. By managing the customer experience at the front-end, retailers can potentially maximize customer loyalty by providing a positive shopping experience. . (Katz et al., 1991)

Because of a supermarket industry profit margin below 2%, only Whole Foods Market and some lesser known supermarkets have adopted the single queue method, while the others are reluctant to invest in reengineering their processes and to risk losing impulse sales near the multiple registers. A Publix Super Markets spokeswoman noted that her customers often wait on slow lines just to be checked out by their favorite cashiers, as they enjoy the personal interactions. (Bialik, 2009)

Understanding that lines are problematic and potentially costly for stores, and given that the point where a customer parts with money should be as pleasant as possible, we now see electronic self-checkout lines in many places with heavy customer traffic. While these technological marvels are designed to service more customers in less time at a reduced cost, they haven’t all lived up to their hype. Self-service for check-in at airports, movie ticket purchases at theatre, work out fine – customers have a single transaction to complete and don’t have to lift anything or scan anything beyond a credit card. They take significantly longer than if handled by an employee, but if there are several people in a traditional line, skipping the line would make up for more sales than the small increase in service time while simultaneously reducing anxiety. Grocery stores are where the biggest controversy lies. Since there are no scanning guns available to customers at the self-service checkout, customers must be ready and willing to put everything on the scanner (assuming it has a barcode), load onto the conveyor belt when it is cleared, clear any jams at the end of the belt, bag the groceries and reload into the shopping cart, and then process the payment. Customers can’t scan produce easily since they require weighing and knowing the right codes to enter. Heavy items like dog food, pool salt and cases of water can usually be left in the cart for the cashier to manually enter or scan with a gun, so customers are reluctant to use self-service with such items. And payment with checks, coupons and cash are often not an option at self-service, so customers not wishing to pay solely by credit card must skip the line.

2. RESEARCH OBJECTIVES

Retailers are well aware that long lines can be detrimental to their success. Market research studies quote figures in the order of 80%–90% of customers who would change to another retailer for shorter checkout queues (Romsey, 1992). When checkout lines are long, customers may spend less time shopping and may cut their shopping list to fit the express line, or they may avoid shopping altogether. And while having excessive checkout lines would minimize the queues to the satisfaction of the customers, this would be impractical and expensive. Retailers continue to devise new and better ways to manage queues productively, but are they really effective and are the customers satisfied with the modifications?

The objectives of this research are twofold: 1) To determine differences in performance at self-service vs. cashier lines; and 2) to determine what factors may drive a consumer’s decision to use or not use a self-service line.

3. METHODOLOGY

A wholesale club store in the southern U.S.A. is reputed to have very quick checkout service and publicly posts performance data for cashiers in five categories. Following their checkout, randomly selected customers were surveyed on their choice of a cashier or self-service line, the reasons for their choice, and the factors that go into their decision. Additionally, customers were observed prior to checkout to see which line they chose, how many items they purchased (which was counted by observation
by the researcher), how long the checkout process took, and how many errors occurred during checkout. Observations were done during peak as well as off-peak times in a single week so as to capture differences in line sizes, items purchased and consumers. In total, checkout data was collected on 210 randomly chosen customers and 156 customers responded to the oral survey on their way out of the store.

While descriptive statistics will suffice for some of the analysis, two hypothesis that are being evaluated are: 1) A customer’s decision to use the self-service line is independent of the size of the shortest line with cashiers; and 2) There is no difference in the mean number of items checked out per customer in self-service vs. cashier lines.

4. ANALYSIS AND RESULTS

Scanning items is treated as a competition among cashiers, as illustrated by the Wall of Fame in the store. The data collection showed a mean of 23.2 items per minute scanned, with the star employee on the board having a 31.4 items per minute average. At self-service, the sample mean was only 4.1 items per minute. Notably, the self-service requires that a scanned item be placed on the conveyor belt, that it does not tip over along the way, and that it clears the belt before scanning another item (which contributes greatly to the slow scanning). And unless an employee is available to help, all items must be lifted and held up to the scanner appropriately. As the self-service customers are self-selected and not random, the results would likely be far worse if they included older or disabled customers who were forced to use it and who would need extra help.

Also contributing to the slow scan rate were the errors. Because of items reversing on the conveyor belt following blockages or unexpected movements, these items had to be rescanned. Additionally, some items were not in the database correctly, and while a cashier knows about these items and can manually override the transaction with a code, at self-service an employee would need to come over to clear the problem. In defining an error as the need to rescan an item (whether because of the customer rushing the process or a mishap on the conveyor belt or that the system simply asks for a rescan) or get help with pricing because of a database problem, the sample showed an error rate of 17.2% for self-service and only 1.8% for cashiers.

So adding to the slower rate of scanning at self-service, a customer also must rescan or seek help for about one out of every six items.

Given the differences in error rates and scanning rates, a customer may still choose either line, but are the number of items in their carts and the lengths of the cashier lines factored in their decisions?

H1: A customer’s decision to use the self-service line is independent of the size of the shortest line with cashiers. This was tested with a Chi Square Test of Independence at a .05 significance level.

<table>
<thead>
<tr>
<th>Shortest line</th>
<th>Line chosen</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self</td>
<td>Cashier</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>2</td>
<td>14</td>
<td>66</td>
</tr>
<tr>
<td>3+</td>
<td>16</td>
<td>56</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>177</td>
</tr>
</tbody>
</table>

With a sig. value of .0434 which is less than .05, the null hypothesis is rejected. It can be concluded that one’s decision to use self-service depends on the size of the shortest cashier line. When there is an empty line or very short line, customers are unlikely to use self-service, but as lines are longer, there is a greater likelihood that a customer may choose self-service.
H2: There is no difference in the mean number of items checked out per customer in self-service vs. cashier lines. This was tested with a t-Test for Two Independent Samples.

<table>
<thead>
<tr>
<th>Line</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items checked out by customer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cashier</td>
<td>177</td>
<td>14.82</td>
<td>8.770</td>
<td>1.870</td>
</tr>
<tr>
<td>Self Serv</td>
<td>33</td>
<td>4.18</td>
<td>4.113</td>
<td>.877</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>t-test for Equality of Means</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items checked out by customer</td>
<td>-5.150</td>
<td>208</td>
<td>.000</td>
<td>10.636</td>
</tr>
</tbody>
</table>

With a sig. value of .000 which is less than .05, the null hypothesis is rejected. It can be concluded that customers at self-service lines have significantly fewer items than those in cashier lines.

Following their purchase, customers were randomly surveyed on the topic of self-service checkouts. 40.5% of the customers surveyed have used self-service at least once. While most had errors and found it to be slower than cashier lines, they felt it to be a worthwhile alternative that they would reuse if they had only a few items (over 95% of the sample observed at self-service had fewer than 10 items), if all items were easy to lift (unless an employee was working at the self-service area, in which case they could use the scanner gun), if they were paying with a credit card, and if there were no cashier lines which looked like they could get through in under 5 minutes. This wholesale club has set such a standard for speed that taking even 5 minutes to check out seems too long.

5. CONCLUSION AND FUTURE RESEARCH

Consumers clearly do not want to wait in line for long, but are willing to do so if there is a sense of fairness. A single line to a ride at an amusement park leaves no choice but to wait, and they pay a hefty price for admission knowing such lines exist. Long lines at the airport are part of security measures, and, as the news continues to report, customers are more concerned with the hassle of the inspection than with the line itself. In the retail world, particularly where groceries are involved, checkout lines have become a major issue and have given a store the potential to win or lose customers. The use of self-service has proven effective to a point, but technology cannot replace the human element in checkout lines, even halfway. Employees can check out significantly more customers in less time and with fewer errors than can be processed at self-service, making them worth the labor cost. Having self-service options available still gives customers a sense of fairness in that they can get done quickly if they prefer not to wait on a line and can checkout unassisted. As long as customers have minimal purchases, can lift them up, have the patience to wait on the self-service system to respond to each scan, and are paying with a credit card, they have the freedom to choose. And the results show customers will consider the self-service option under those circumstances unless the cashier lines are short; if they can get on an empty line or one where they are next to be served, the speed of the cashier checkout process will more than make up for the wait behind one or two customers in most cases.

Should an employee be permanently stationed in self-service? With stores typically having multiple self-service lines, a single employee can assist at all of them simultaneously and therefore increase the likelihood of a customer using that option. During this study, the use of an employee at self-service was inconsistent, except during peak hours, and understanding whether such a position will reduce labor cost and speed up checkouts overall should be investigated.

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TODAY’S INDISPENSABLE B2B SALES RELATIONSHIP DRIVERS

J. D. Williams and Matt Sims
Kutztown University, USA

ABSTRACT
Business-to-business (B2B) sales relations has, for many years been an exceedingly complex set of undertakings. Preparations for such sales tasks require skilled professionals along with a great deal of institutional development. It has been widely recognized that a typical B2B sales person and team require from six to twelve months of training and maturation in order to effectively execute the majority of complex client marketing necessities. Previous studies have shown that the more effective training of the most useful learning skill sets are based upon eight necessary business relationship drivers.

Keywords: B2B Sales Relationship Drivers; Quota-Based Earnings; Salary-Based Earnings.

PURPOSE
This research project was designed to have not only identified a select group of relationship drivers but to additionally enhanced their meaning and use for the sales staff in today’s marketplace. Through secondary data investigation and primary research exploration in the form of a questionnaire, it was hoped that these sales relationship drivers (SRDs) would become noticeably recognized and utilized by today’s sales leaders.

INTRODUCTION
The many challenges confronting organizations in this contemporary business environment have been altering sales and marketing strategies, as well as processes and organizational designs. Various paradigms are offered by academics and executives for coping with the threats and opportunities for this decade but it would seem that few, if any, carry the magical wand(s) of success. What remains fundamental for literally all forms of business dealings in the western world has been and will continue to be building and sustaining relationships. These relationship strategy paradigms, including their related relationship drivers, have provided business-to-business (B2B) sales teams with important personal links to clientele in good and bad economic times. It would seem that of critical importance would be the continued recognition that these relationship drivers and strategies would still closely link people-to-people, bonding of communication, building strong business dealings, and the sharing of valuable information. It must also be recognized that these SRDs may change over time, necessitating a new and fresh look at what would be needed to address the business dynamics of today’s marketplace.

For that fresh look, consider viewing Lehmann’s expanded 5W-Model for customer analysis presented in FIGURE 1:
THE MARKETPLACE DEMANDS ON B2B SALES TEAMS

In recent years, the business models and organizational structure of companies have changed quite dramatically. The last few years have seen an escalating importance attached to customer satisfaction, quality, market niches, value-added products, problem-based solution thinking, and international diversity of customization, modification, and integration. In general, such challenges have set forth demanding changes in production activities, marketing and sales strategies, as well as the flow of information within the company, between companies, and business partners. Responding to these changes has necessitated B2B sales teams to creatively present products and services that seek to maximize customer value through the generation of more sophistication that value relationships. Sales teams and their management seemed to have not been fully prepared to make these unique adjustments for this decade. For many western organizations, sales productivity has been directly related to how well the sales force understands the full range of solutions available for different markets, clearly a daunting task for the 21st Century. (Behrman, 2001)

Within this decade, customer-centric selling models have mandated B2Bs to strive for long-term partnerships with their customers. As such, it would seem necessary to understand the complexities within the customer's business and the marketplace surrounding it. Essentially, to blur the lines between where the organization's business stops and the client's business starts and to demonstrate to the client that any and all shared risk is/are to be jointly communally solutions. These solutions must help the customer to achieve stated business goals. Interestingly, some of the more critical solution-oriented sales tools could lie within the sales teams own innate trained abilities of SRDs.

Another critical factor has been the extent to which the sales staffs would be able to consistently grow sales its revenues, increase their product unit sales, and convert new prospects-to-client. Sales teams must have all the most current, best and most powerful application sets at play to reach the sales growth targets to meet the quota of their respective corporate and achieve their personal financial goals. As such, today's salespersons have to greatly improve on "SAR" (Strategic Alliance Relationships), necessitating sales teams to better implement their organization's vision and philosophy when making the sale.

**Figure 1:** The Expanded 5w Model for Customer Analysis

<table>
<thead>
<tr>
<th>Who Are Our Current and Potential Customers?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the demographic, geographic, and psychographic characteristics of our customers?</td>
</tr>
<tr>
<td>2. Who actually purchases our products?</td>
</tr>
<tr>
<td>3. How do these purchasers differ from the users of our products?</td>
</tr>
<tr>
<td>4. Who are the major influencers of the purchase decision?</td>
</tr>
<tr>
<td>5. Who is financially responsible for making the purchase?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What Do Customers Do with Our Products?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In what quantities and in what combinations are our products purchased?</td>
</tr>
<tr>
<td>2. How do heavy users of our products differ from light users?</td>
</tr>
<tr>
<td>3. Do purchasers use complementary products during the consumption of our products? If so, what is the nature of the demand for these products, and how does it affect the demand for our products?</td>
</tr>
<tr>
<td>4. What do our customers do with our products after consumption?</td>
</tr>
<tr>
<td>5. Are our customers recycling our products or packaging?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Where Do Customers Purchase Our Products?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. From what types of vendors are our products purchased?</td>
</tr>
<tr>
<td>2. Does e-commerce have an effect on the purchase of our products?</td>
</tr>
<tr>
<td>3. Are our customers increasing their purchasing from non-store outlets?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When Do Customers Purchase Our Products?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are the purchase and consumption of our products seasonal?</td>
</tr>
<tr>
<td>2. To what extent do promotional events affect the purchase and consumption of our products?</td>
</tr>
<tr>
<td>3. Do the purchase and consumption of our products vary based on changes in physical/social surroundings, time perceptions, or the purchase task?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Why (and How) Do Customers Select Our Products?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the basic features provided by our products and our competitors’ products? How do our products compare to those of competitors?</td>
</tr>
<tr>
<td>2. What are the customer needs fulfilled by our products and our competitors’ products? How well do our products meet these needs? How well do our competitors’ products meet these needs?</td>
</tr>
<tr>
<td>3. Are the needs of our customers expected to change in the future? If so, how?</td>
</tr>
<tr>
<td>4. What methods of payment do our customers use when making a purchase? Is the availability of credit or financing an issue with our customers?</td>
</tr>
<tr>
<td>5. Are our customers prone to developing close long-term relationships with us and our competitors, or do they buy in a transactional fashion (primarily based on price)?</td>
</tr>
<tr>
<td>6. How can we develop, maintain, or enhance the relationships we have with our customers?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Why Do Potential Customers Not Purchase Our Products?</th>
</tr>
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<tbody>
<tr>
<td>1. What are the basic needs of noncustomers that our products do not meet?</td>
</tr>
<tr>
<td>2. What are the features, benefits, or advantages of competing products that cause noncustomers to choose them over our products?</td>
</tr>
<tr>
<td>3. Are there issues related to distribution, promotion, or pricing that prevent noncustomers from purchasing our products?</td>
</tr>
<tr>
<td>4. What is the potential for converting noncustomers into customers of our products? (Lehmann, 2005)</td>
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J.D. Williams and M. Sims

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Although salespersons have more access to such tools such as the Internet, and technological advances, a greater emphasis has to be put on customizing these programs to enhance long-term relationships (Cron, 2001).

It may also be just to say that sales performance is determined to a large extent by how well the sales leaders can motivate, lead, and control sales-force operations (Chapman, 2005). So why has it been that sales teams seemed to have lacked the effective motivation techniques and sales force operation skills to formulate, to properly design, and to monitor such programs?

Tremors of discontent have clearly been registered in a multitude of company’s sales staffs throughout the western world. Those firms ignoring the reverberations may be in for a rude set of multiple after-shocks. Many of the estimated 13 million salespeople in the United States are now, and will continue to be, forced out of their profession as businesses bypass traditional sales routes in favor of buying more products and services directly. It may very well be that if one is not prepared for these challenges, one will be out of a job. Simple as that (Chitwood, 2004)!

Research has shown that the search for resolution and success factors which have affected salespersons’ and sales teams’ performance has been extensive. Yet, according to Churchill’s work, no single determinant has been found to explain a large proportion of the variance in sales performance (Churchill et al. 1985).

Approximately 80% of sales managers are currently under-performing against sales targets and 90% of CEOs lacked confidence in their sales leaders. With sales leadership being such a critical role within any organization, how can companies cultivate and create sales leaders that will produce the results needed for sustained growth? Unfortunately there is no single answer to this question, yet there seems to be a path of learning and development that will lead to a resolute direction and it lies within relationship selling techniques. On target, powerful, comprehensive sales relationship along with SRDs education may be the key to hit these sales growth targets. The western business world’s human-to-human transaction-based sales training programs must be built on today’s platform of the best, the latest, and the most impactful forms of sales psychology, strategy and relation-oriented techniques. As such, only the most up-to-date and effective tools would meet these challenges for today’s sales teams and by addressing these learning and skills-development programs, companies should be able to cultivate sales leader excellence while avoiding the performance perils so many organizations are dealing with today. Your authors contend that B2B sales team success will be heavily based upon the training and maturation process of understanding and utilizing the eight most valuable SRDs.

SALES RELATIONSHIP DRIVERS

The sales team relationship drivers, first presented by Evans, Schlacter, Schultz, Gremler, Pass and Wolfe in the Journal of Marketing were: 1) Internal Relationships, 2) Trust Development, 3) Sales-Client Roles & Responsibilities, 4) Customer Focus, 5) Team Tenure Relationships, 6) Accountability, 7) Subordinate Goals, and 8) Leadership of Product/Service Management (Evans, et al., 2002). These SRDs would hopefully have remained essential for B2B salespersons to incorporate into their daily sales activities. Although these drivers were first introduced in the fall of 2002, this author contends that, with appropriate updating, along with primary research testing, the drivers will have remained highly valuable. Please view FIGURE 2, below for an up-to-date discussion of each sales driver and its ability to address this decade of sales challenges.
Internal Relationships suggests that salespersons must develop a broad-based network with a multitude of persons in a myriad of functional positions with their own firm (Trumfio, 2006; De Dreu, et al. 2003; Cummings, 2007). The following list, although not exhaustive, has focused upon the prime players within a typical organization: 1) the executive staff; 2) other sales teams and their sales managers; 3) the factories and their product manufacturing managers; 4) the financial department; 5) the human resource center; 6) the strategic planning department; and 7) the marketing division managers.

Today’s business environment demands a strong and viable sales organization that meets their ever changing needs. The relationships between the sales team and its organization must reflect a fluid posture, capable of responding at a moment’s notice to the direct of the field sales effort. The sales team must remain savvy to the internal dynamics of its firm to stay true to its policies and programs while remain steadfastly alerted towards their client needs and desires (Dixon, et al. 2002). The fundamental goal for sales teams and their internal resources would be to remain one single voice, no matter what internal of external dynamics are occurring (Rotta, et al., 2006). It now would seem appropriate to take a look at the primary internal relationship functional areas.

The executive staff plays a vital role in setting strategic goals of the organization which include identifying various growth targets of products, services, client relations and competitive posturing. These strategies may address specific marketing targets including the selection of key products and services for primary sales as well as various geographic and/or industry penetration plans (Kahn, et al., 2004). Sales teams need to attend as many executive-lead seminars and conferences that may offer detailed insight into distinct tactics and directives of their sales programs.

Although not necessarily an easy task, other sales teams and their sales managers may offer valuable long-range and tactical sales approaches that may help to close some of the more difficult clients (Rich, 1997). In offering this advice, it would be not without full recognition that many B2B sales teams internally compete for various awards and, as such, may be unwilling to divulge ‘competitive’ sales strategies. In one of the author’s 17 years of sales and sales management experience, it was found that a dinner and/or a couple drinks conveniently open up the previously tightened lips.

The factories and their product manufacturing managers will have undoubtedly reveal some of the product manufacturing difficulties of scheduling output or even product assurance issues that may have cropped up during the manufacturing process. This information would likely help the sales teams to better plan for the best product mix for their clients as well as a more appropriate client phased-in installation timetable. During on author’s years with IBM, it was clear that the long sales-to-install time frames would be most critical in competitive situations. Sometimes, a good long conversation, along with a dinner and an excellent bottle of wine, with high level product managers sometimes helped to alleviate the problem by expediting my production order(s). One must always remember that extending kindness and non-monetary offerings have always been a necessity for B2B sales success.

The financial department of one’s firm, on the surface, may have seemingly been removed from the sales arena. Such misaligned perception would potentially pose a critical error on the part of the sales teams. Sales teams traditionally have seen short timing in the time to understand the critical from the financial. Some of those ‘hot buttons’ may be directly related to a product or service sales initiative(s). If the firm’s policy would enable it to offer various financial incentives to its clients, such as percentage discounts for volume orders, it would behove the sales teams to most timely and effectively utilize those price/estimating incentives, particularly when the discounts would be periodically ‘soft’ (not as fixed as previously understood). During one of the author’s years with Chase Bank Information Services, a timely ‘soft’ discount, based upon my company’s financial manager’s ‘suggestion’ proved highly beneficial to my client and my eventual sales bonus.

The human resource (HR) center might play an important, although infrequent, role for a salesperson or the entire sales team. A salesperson would seek a change of team due to a desired or pending geographical move or other issues/opportunities. Sometimes a brief chat with a HR manager would offer quite revealing information as well as guidance into the next direction. This conversation may have been also useful to ascertain current information about sales personnel promotions as well as potential positions not yet published. A sales team may wish to converse with a HR manager in terms of latest techniques in hiring an additional salesperson. On the negative side, the sales team leader may need to converse with the HR manager concerning a specific salesperson who is not meeting the team goals and directives.

The strategic planning department has been a primary focal point in setting sales quotas with the marketing and sales divisions. Communication with this department may be problematic so one must be careful in initiating a private meeting. However, many strategic planning departments conduct seminars and conferences to which sales personnel should try to attend. Strategic insights, opportunities and tactical issues will likely be on the agenda. The Chase Bank Information Services’ strategic planning seminars offered my sales teams a great deal of valuable information that was screened and appropriately shared with clients. The clients truly valued the strategic insights, some of which actually had direct impact to their own corporate plans. A note to wise, always avoid improprieties.

The marketing division managers may very well play the most decisive role in information flow to sales teams. It is not without recognition that the marketing division managers may have presented a somewhat adversarial demeanor towards sales persons and sales management. The tension associated with selling for corporate research and salary differentials has always been issues for the marketing departments. None-the-less, potential benefit of this relationship would likely yield tremendous up-side value in terms of the strategic imperative in maximizing the marketing opportunity analysis (MOA) - the most crucial goal of the marketing division.

Trust Development, within today’s customer-centric selling model, has required organizations to become long-term partners with their customers. It would be necessary to understand the complexities in the customer’s business and environment; to blur the lines between where the organization’s business stops and the client’s business starts; and to show the customer that any risk that is involved would be a jointly shared solution. This or these solution(s) must be customized and jointly designed to help the customer to achieve its stated business goals. All of these actions and transactions would necessitate a relationship of trust between client and sales team. And, when one thinks of that relationship, the aspect of trust itself may very well begin with the sales team’s ethical standards - standards that clearly emphasize honest and trustworthy communication between sales teams and their client(s). It has been universally apparent that sales teams need to have adhered to the universal nature guidelines of the ‘Golden Rule,’ ensure that truth telling remains as the primary communication construct, and always remain responsible for one’s actions (Castelberry et al., 2011; Lill, 2005).

It has been quite evident that solutions, not products, must be brought to the customer's door. These solutions must help the customer to achieve stated business goals. It has been also abundantly clear that, through each and every sales team achieving their personal and collective financial, lifestyle, and career goals, a distinct correlated relationship must be maintained with the respective organization’s marketing and financial goals. Here again, a strong form of trust must be well established to insure internal sales statements of sales action-to-commitment would be, in fact, met with appropriate compensation and recognition.
Sales-Client Roles and Responsibilities have changed in today’s marketplace, which have reflected a deeper level of shared responsibility between a sales team and its clientele. In today’s increasingly professionalized world, customers simply would no longer tolerate the glib, fast-talking, backslapping salesperson whose only concern would be his/her own pocketbook. Such unscrupulous tactics may continue to bring success to used car salespeople and those engaged in ‘one-shot’ sales enterprises. However, the majority of B2B salespersons both today and in the future are going to face more sophisticated clients, and they will have to operate in a much broader frame of reference than simply promoting a product or service as the best on the market.

Salespeople need to practice adaptive selling when they react to different sales situations by changing their sales behaviors. An extreme example of non-adaptive selling is using the standard memorized presentation, in which the same presentation is used for all customers. The customized presentation illustrates adaptive selling because the presentation is tailored to the specific needs of the customer. Adaptive selling has been considered a valuable approach because it has forced the salesperson to practice the marketing concept. It emphasizes the importance of satisfying customer needs. And being adaptable increases buyer trust and commitment and results in higher sales performance. It’s important for salespeople to take the initiative and be adaptive. Studies show that salespeople who are able to appraise the emotions of the buyer while practicing adaptive selling have higher performance (Castleberry et al., 2011).

Salespersons in the 21st century may not be trained and prepared to implement this needed form of partnership selling (Chitwood, 2004). In addition, it has been more challenging to find and hire the right person than it was in the past. Why? Because every sales and marketing-driven company in your area has been seeking the same sales talent you have been seeking. The bottom line is this – it’s more difficult to be an effective, productive professional sales person today than ever before going through an un-ending turnover process may prove most detrimental.

The structure of companies has changed dramatically in recent years, which has necessitated role changes in their managers. The roles are more robust with added assignments and increased pressure to perform against tight cost-to-profit margins. Although quality and efficient output remain as high mark goals for most institutions, effective management of cost controls, increased focus on ethical conduct, market niches, value-added products, and strategic alliances and well focused customer relations have been added to the list of corporate responsibilities. Change, like-it-or-not, should occur for companies to be well positioned to access today’s markets. Companies should offer products that maximize customer value, and will have to become more sophisticated in providing that value. These new and dynamic leadership roles demand changes in production activities, sales strategies, and the flow of information within the company as well as between the company, its customers and business partners (Smith, 2000).

The roles of partnership selling have necessitated an increasingly competitive business environment, and many sales persons have lacked the fundamental partnership-oriented qualities (Chitwood, 2004). The role of relationship strategy paradigms has provided sales and marketing decision-makers with important conceptual frameworks and perspectives. Importantly, relationship strategies have been closely linked to other key dimensions of contemporary management thought and practice (Crawins, 2004). As such, a foundation of traditional thinking has already been designed and need only to followed and or adapted for sales teams across the western world. For many organizations sales productivity has been directly related to how well the sales force understands the full range of solutions available for different markets. Salespeople need to feel confident about features and benefits, market positioning, competitive intelligence, pricing, and other product knowledge (Behrmann, 2001).

One of the more significant pitfalls for sales persons has been the inability to separate the selling and the negotiation stages of the dialogue with the customer. This has resulted in getting “trapped” into a negotiation discussion before having reached an agreement - as a minimum in principle - that the customer sees the value of doing business with them. What can sales management do to assist in both communicating resolutions points of value and in developing, better focused minds set of salesperson to meet this challenge (Slaton, 2004)? The answer(s) would lie in effective training and sales role-playing programs that address the aforementioned issues.

The new definition of personal selling refers to the personal communication of information to selfishly persuade a prospective customer to buy something—a good, a service, an idea, or something else— that satisfies that individual’s needs. Ideally, today’s selling environment has evolved into role players and role models, all with their eyes towards selling value, not just product; and a clear view of when this sale must be product-focused, value-focused, or product- and value-focused (Futrell, 2011). Sales organizations have often indicated their acceptance of these important market demands, yet the priority of training salespeople seems to still have been focused heavily on developing product knowledge. Sales teams need to have learned about their customers’ industries and business, as well as about their own products and the application of these products in their clients’ business.

Salespersons have to better prepare themselves into roles being better facilitators rather than product movers. Sales teams would need to adjust their role function to link customers with the sale teams’ internal operations of their respective firm. This organization structural shift has many implications: a) seller-buyer alliances will produce win-win situations and increase sales stability; b) knowledge of the customer’s markets, processing, purchasing behavior and product needs will mean competitive advantage; c) re-learn language, functions, limits, and capabilities of other parts of your firm; d) customer requirements will be the driving force behind new product and process evolution; e) value, from the customer’s perspective, will be a key competitive advantage; f) for specific customers or customer groups, sustainable comparative advantage can be achieved; g) the marketing and sales force will be the link between the producer of wood products and its customers; h) the sales force’s knowledge of customers will create value for customers and profit for the company; and i) the sales force that emphasizes information gathering more than pushing products will be most effective (Smith, 2000).

Customer Focus has been one of the most widely established in the field of sales and sales management. Yet, it may very well be that many salespersons have lost track of the meaning and value of being customer-centric (Menguc, et al. 2005; Dutton, 2003). Without question, today’s clientele would be demanding more and more customer focus to be assured that their needs are well understood, consultatively developed and strategically met with the best products and service their money can buy.

A customer-centric selling model would require sales role-players within organizations to become long-term partners with their customers. It would be necessary to understand the complexities in the customer’s business and environment; to blur the lines between where the organization’s business stops and the client’s business starts; and to show the customer that any risk that is involved is to be jointly shared solutions, not products, must be brought to the customer’s door. These solutions must help the customer to achieve stated business goals (Manning, 2010).

One author’s personal sales experience with IBM and Chase Bank Information Services clearly pointed out the ever-present focus and significance of being both sensitive and empathetic to clients while listening with heart, ears, and a consultative intellect. Yet, this does not mean that the ‘customer is always right’ as in a retail setting. What it does mean would be that the sales team must help assistir the client in understanding his/her own distinct business problems, concerns and opportunities because many client may be able to sense something wrong but not know how to determine what it may be as well as its significance. It may be up to the sales team to ferret out these business issues and then come to a logical and sensible set of business solutions that are tailor fit to the needs of the client- an effort, although quite taxing but of tremendous value to the clientele, particularly in establishing the justification for long-term relations.

Another aspect of customer focus would be the ability to support the client needs throughout the entire sales process, particularly after the sales has been made. Today’s customer-centric selling model requires organizations and their sales teams to become complete process-partners with their customers. As such, it would be necessary to understand the complexities in the customer’s business and environment on an ongoing basis whereby a consultative customer relationship would begin to be viewed as a seamless bond between companies.

Figure 2: Discussion of Sales Relationship Drivers (Continued)
Team Tenure Relationships would relate to a well-known hierarchy amongst sales teams in which the ‘senior’ sales person(s) would take on the majority of leadership responsibilities with client relations as well as internal negotiations for additional resources and quota adjustments. Senior, in this case means that the individual carries a significant amount B2B sales experience with that firm or, in some cases, extensive experience carried over from other B2B sales organization. This activity and accountability of team tenure relationships has been a well-established process for many organizations (Jackson, et al. 2004). According to David J. Lill, a many year sales professional and author of the book, Selling: The Professional, the tenured sales leadership assumes the role of team coordination, tasks manager, internal resource gatherer, team meeting organizer, and the often heavy responsibility of being the primary closer of the sale (Lill, p. 35).

When one of the authors joined IBM’s Data Processing Division as a rookie marketing representative and, upon completion of an extensive sales training program, was proudly assigned to a premier sales team servicing the Bank America account, it was not without multiple sets of communication and sales rules setting offered by the marketing representative team-leader the tenured one. This author was soon introduced to all of my team members with particular focus towards the tenured sales members, somewhat as revered individuals, deserving, if not demanding respect. It soon became abundantly clear that no sales efforts would be conducted without the approval and support of the sales team leader. This internal sales relationship clearly helped to keep all sales plans and programs under direct scrutiny and control by the ‘tenured’ sales members. In this author’s situation, it proved to be both a good and bad situation during the time at IBM – story for another time and another paper (xmile).

A brief case study to reflect upon - While at IBM, one of the author’s of this paper was assigned a specific product line, one that was quickly determined to have been a ‘troubled’ product line, particularly in the minds of the client. This author surmised, since being so much younger than the other team members (by at least 15 years) and had no field sales experience, it must have been thought that your author could gravel around in a product line sales effort, which wouldn’t hurt the overall sales of the team. After a year of grappling around, your author came up with a novel approach to implement a massive sales program using that once troubled product line as the central component. As the second sales year emerged, your author had gained a support team of over 20 persons towards the product line objectives, which was equal to half of the overall Bank of America team. This did not bode well with the sales team leader as your author was quickly undermining his many years of team control. Obviously, battles ensued and raged on until an unprecedented change occurred within the Bank of America sales team ranks. Your author was awarded co-team leader responsibility and promoted to full marketing representative after only two years and few months of field sales activity - a rookie no more.

As it turned out, by the end of the third year, your author and my team were awarded the largest input/output equipment and computer systems sales in the nation. I was also considered a ‘tenured’ sales leader by my third year. Subsequent changes occurred within IBM’s sale team roles to allow the sales rookies to play a more active and strategic role within the sales teams’ responsibilities - a significant transformation. In net, tenured roles became not solely based upon time-and-grade, but also based upon creative effort that yielded or would likely yield high-value results. This would offer a significant salary and leadership incentive to all of IBM’s salespersons, no matter their respective time-in-grade. As other sales organizations look towards today’s clientele, it would seem abundantly evident that more flexible dynamics within a sales team would likely prove highly beneficial towards meeting their sales goals.

Accountability has always been a vital responsibility for sales teams and holds no less significance for today’s marketing and sales activities. Accountability, within a sales team-to-client environment, essentially means that whatever is discussed and agreed upon must be met (Ingram, et al. 2011). In today’s marketing environment, accountability seems to be even more important as the complexities of product specifications and operational design requirements as well as cost/price structure of products and services have, for the most part, increased across many industries (Yammarino, et al. 1990; Li, H. et al., 2002). As one may surmise, there would likely be a myriad of possible commitments and/or agreements that would be conducted between client and a sales team- some of which would carry legal ramifications if not met, others carry ethical responsibility, and all can be devastating to firm’s sales teams and their client relations. Here are just a few of the possibilities: 1) all contractual agreements and specifications; 2) changes in contractual agreements, specifications and configurations; 3) timeliness of client-based training programs; 4) commitment of sales team’s and/or sales firm’s none-sales resources for project implementation or delivery; 5) any agreed upon adjustments to pricing; and 6) changes to joint project participation.

There are also accountability responsibilities internal to the sales organization, which may be centered around: Internal resource requirements to service a client; sales team responsibilities and resource utilization; sales team learning and development goals/objective being up-to-date; and sales team commitments to their client(s).

Subordinate Goals reflect a responsibility to delegate a multitude of institutional and sales-oriented goals. It is fundamentally understood that institutional goals, strategies and tasks must be converted into manageable assignments for delegation and task responsibilities throughout the organization (Jenn, K.A. et al., 2001). Today’s sales staffs are not exempt from such responsibilities. In fact, considering the additional responsibility to interpret and share in the management of their respective client goals and strategies in addition to their own institution, salespersons just may be the most burdened function along with one the most significant loads of task responsibilities (Joshis, et al., 2006). That being said, it would be of the utmost importance to formulate a manageable process of subordinating their heavy loads of goal responsibility.

A typical set of B2B sales goals would these thirteen functional duties and responsibilities: 1- maximizing sales quota; 2- achieving excellence with their client relations; 3- accomplishing sales prospects aspirations; 4- grow existing account sales revenue; 5- attaining internal product and/or service targets and unit sales goals; 6- attaining, if not exceeding client desires for strategic goal sharing; 7- achieving ethical leadership; 8- finishing all assigned learning objectives; 9- effectively managing critical sales-to-client negotiations; 10- maximizing time and territorial management; 11- enhancement of sales skills, particularly in terms of consultative selling skills; 12- increase critical thinking and analytical skills; and 13- achieve greater internal network relations.

It should be abundantly clear that B2B salespersons are charged with a multitude of goals, objectives and tasks. It would necessarily follow those sales teams must to properly delegate and equitably share such charges of responsibility so that no single salesperson becomes overly burdened with these various activities (Karakowsky, et al., 2004, p. 506-525; Hein, et al. 1996). One of the primary reasons that salespeople ‘burn-out’ is due to being over burdened with sales goals and responsibility. Consider a representative set of performance evaluation criteria offered by Johnston and Marshall in their book entitled Relationship Selling: Knowledge of Work including knowledge of product and customer’s business; Degree of Acceptance by customer and one’s internal network; Amount of Effort Devoted to Acquiring Business in terms of new accounts and/or expansion sales opportunities of existing clients; Ability to Acquire Business in terms of unit sales; Amount of Service given to Customers, which may include formal client customer satisfaction surveys; Dependability in terms of the Amount of Supervision needed, which is centered on both efficient and effective use of management resources; Attitude toward his/her Company’s Policies and Procedures, particularly within the areas of ethical conduct; Judgment, which includes comprehension and analytical capabilities; and Resourcefulness, which may address one’s originality, initiative, and imagination (Johnston & Marshall, p. 403-5).

As most B2B selling efforts are conducted by teams, many of the above performance aspects should be shared amongst the team members, building on some, leveraging others, and overcoming the weaker areas.

Figure 2: Discussion of Sales Relationship Drivers (Continued)
Leadership of Product/Service Management in today’s marketplace, necessitates a very effective and efficient coordination of sales team responsibilities as well as the active involvement in coordinating increasing amounts of internal support systems and client resources (Pearce, 2002; Mehra et al. 2003). Different than field sales, these persons have the primary responsibility of supporting the field sales programs, which hopefully, include their respective products and or services. Today’s leadership must constantly realize that they have limit resources in supporting a large array of field sales activities, which may easily dwarf the total numbers of product/services support staff (Ledingham, et al. 2006; Karakowsky et al., 2004). One of the author’s previous experiences in dealing with Product/Service Managers has offered an in-depth perspective into the internal workings of their leadership roles. Consider a plausible set of Product/Service Managerial responsibilities: a) assist on the marketing side of the development of new products and services; b) assist in the client-based product/service modifications; c) assist, if not direct the sales brochures and client user manuals; d) coordinate the internal sales effort to the sales teams that would eventually sell the products/services; e) coordinate, if not conduct the sales training of the various products/services; f) prioritize and allocate the preciously limited support staff resources for development, design, modification, and field sale support; g) conduct a myriad of field demos and benchmark and performance-oriented tests; h) coordinate the gathering and dissemination of competitive information; i) work to address client and field sales team questions; j) work to resolve client issues and concerns; k) coordinate the continuous flow of formal and informal communications between product/service designers, manufacturing representatives, alliance relationships, clients, and sales teams; l) continue to reinforce an internally competitive posture within the product/service staff; and m) continue to reinforce an externally competitive posture for the field sales teams.

Unquestionably, a daunting task to lead a product/service sales support effort. And, one must not forget that salespersons almost always have, within their company, product/service choice, which clearly adds to the challenge of these product/service support team leaders.

Figure 2: Discussion of Sales Relationship Drivers (Continued)

LITERATURE REVIEW DISCUSSION

Churchill et al. (1985) performed a meta-analysis investigating the determinants of salesperson performance. This research analyzed over one hundred studies using a broad range of factors thought to impact salesperson performance. These factors were categorized, according to a taxonomy developed by Churchill et al. 1985), into: aptitude, skill level, motivation, role perceptions, personal factors, and organizational and environmental variables.

Churchill’s meta-analysis found role perceptions to exhibit the strongest correlation with performance. The next most important category was acquisition of skill levels. Both of these categories would be strongly affected by the supervisory role of the sales manager. These elements have been factored into the client-relationship drivers.

Mitchell (1968) determined high congruencies of role perceptions (between superiors and subordinates) which were correlated with high performance. This was consistent with other role episode models, which suggests that role perceptions were developed with the salesperson through the communication and actions of the sales manage (Cohen, D. et al. 2007; Cummings, B. 2007; Dixon, A. et al. 2002; Evans, 2002; Freedman, R. et al. 1989; and Karakowsky, L. et al. 2004). Many of the previous researchers have brought forth a more meaningful understanding of role perceptions or role ambiguity, which has been an issue among sales teams for an extended period of time. It also would seem, based upon pervious research that this problem has remained an ongoing issue among sales teams due to, impart, the inefficiency of the sales manager.

The ineffectiveness of sales managers have existed due to the complexity of sales teams (Behrman, D. 2001; Cummings, B. 2004; Dutton, J. 2003; and Ledingham, D. et al. 2006). Research has shown conflicts within core selling teams which have necessitated unique management challenges, not the least of which involves maintaining effective and productive team relations. This research has also uncovered that sale team conflict, from a global perspective, has been the tension between team members due to real or perceived differences. (De Dreu and Van Vianen 2001, p. 309) Such differences have often spawned from incongruent goals and values in three areas: 1- the task, 2- the process, and 3- relational interactions (cf. De Dreu and Van Vianen 2001; Jehn and Mannix 2001).

For example, when core selling team members have responsibility for determining pay structure within the team, the sales team may successfully consummate a sale but disagree on the process for sharing commissions (process conflict). Alternatively, sales team members may make the sale but disagree on the recommendation for a customer (task conflict). Or, while successfully making the sale, sales team members simply end-up “rubbing each other the wrong way,” sparking a relational conflict. (cf. Jehn and Mannix 2001) In all three instances, the core selling team may reach a ‘successful functional outcome,’ but the conflict and the behaviors arising in response to that conflict diminish individual team members’ perceptions of the team’s outcomes (Dixon, 2002).

The internal relationships that exist within a sales team may not affect the overall outcome of a sale or sales presentation, but may bring down group dynamics. The internal relationship may affect the trust and customer focus drivers that exist within a sales team. It becomes a complex battle for sales teams to be able to manage in order to sustain highly productive levels (Dixon, A. et al. 2002; Freedman, R. et al. 1989; and Marchetti, M. et al. 1997).
Research findings have further portrayed that the complexities of sales teams in realizing that the concept of team role may very well have differed among different authors. Still, research has found that information integration and sharing remain the critical focus of learning endeavors (Garvin 1988) to foster consistency in team decision making (Menon, Jaworski, and Kohli 1997) and to assist sales teams in discovering new ways to satisfy customer needs (Sethi 2000). The sales roles identified imply that different needs for learning and different learning styles are likely to exist.

Members on the sales team have varying functions and are exposed to multiple sources of information (Ingram, 2004). This has necessitated the coordination of information flow within the team and amplified within larger sized sales organization, in order to ensure that all the valuable information will be used to its fullest potential. As one would surmise, teams are capable of handling more information than individuals by virtue of the combined intelligence of all the members of the team, but team dynamics determine whether this potential can be effectively realized (Gladstein 1984).

A sales manager must know the capabilities of each team member before assigning roles. Too much information can be presented to an individual sales team member, which is a major reason why the sales team exists. A sales manager’s major responsibility exists in establishing roles and responsibilities within a sales team, allowing for sales efforts to be maintainable (Gladstein 1984). Once roles and responsibilities have been developed, sales teams will be able to form other relationship drivers.

Relationship drivers in group dynamics can be affected by each other. Once roles and responsibilities have been established, more relationship drivers can be formed. Accountability would be held once the responsibilities have been understood among the sales team members. This correlation can be studied from Mercer Management Consulting research, which has illustrated the growing number of teams-for-teams’--sake. According to the Fortune 1000 company study, only 13 percent of the 179 teams researched had received high ratings for effectiveness (Kusari, S. et al. 2005).

Although many experts have said that team-based pay would be critical to the success of teamwork in the workplace, most teams fail for less expensive reasons. According to Marchetti (Marchetti, 1997), managers have said teams failed to meet expectations for the following fundamental reasons: Goals unclear (55%); Changing objectives (55%); Lack of accountability (51%); Lack of management support (49%); Lack of role clarity (47%); Ineffective leadership (45%); Low priority of team (40%); and No team-based pay (30%).

A survey was based on a field study of 179 teams and revealed that a high percentage of teams lack role clarity. Clearly, if a sales team lacks role clarity, than its members cannot be held accountable for mistakes since they would not be sure of their actual roles and responsibilities. As a result, of those same teams, it would be determined that ineffective leadership would be placed high on the list of team issues. A reasonable view would be that leaders have the responsibility of assigning sales roles. Therefore, an ineffective leader could impair the ability for a sales group to become dynamic through limited the ability of developing relationship drivers.

Key to the successful development of the today’s sales teams would be their ability to understand and implement the eight relationship drivers that directly impact a client-sales environment. Some relationship drivers are of group dynamics, necessitating more time to develop than others. The challenge would depend heavily upon the specific sales teams’ past relationships and willingness to adjust to new relationship standards. Strong leadership can assist in developing a dynamic group, but leadership alone will not form a dynamic group.

A study of Fortune 1000 firms found that a mere 13% of selling teams were rated as highly effective. (Marchetti, 1997) This finding may be due to the fact that sales team management has been one of the few areas of marketing that has yet to receive the full attention of academics, business gurus, management consultants and trainers. (Oliver 1996, p. 82) On the other hand, based on a wealth of conceptual and empirical support (e.g., Yukl 1998), leadership appears to have a significant relationship with a number of outcomes and thus may prove a fertile ground for further enhancing selling team effectiveness. (Pearce 1999)

**RESEARCH METHODOLOGY FINDINGS AND ANALYSIS**

It was determine that in addition to the secondary research utilized to reveal the in-depth understanding of this manuscript’s research objectives, a companion primary research investigation would also be performed. The objectives of the primary research would be to confirm the eight SRDs and to determine to what extent are today’s B2B sales teams utilizing these most important tools. As such, a multi-segmented questionnaire was designed in support of the following hypotheses:
General Sales Knowledge Hypotheses

\( H_1 \): Sale managers recognize that an escalating importance has been attached to customer satisfaction, quality, market niches, value-added products, problem-based solution thinking, and international diversity of customization, modification, and integration.

\( H_2 \): Sales persons consider B2B selling as a significant responsibility, one that incorporates a multitude of functional skills sets and knowledge building tools.

\( H_3 \): Customer-centric selling models have mandated B2Bs to strive for long-term partnerships with their customers. Do sales persons understand the complexities within the customer's business and the market environment surrounding it in order to develop a customer-centric selling philosophy?

Sales Challenges Hypotheses

\( H_4 \): Salespeople 'burn-out' is primarily due to being over burdened with sales goals and responsibilities.

\( H_5 \): Sales person lack role clarity, in terms of the selling functions (to include: 1- maximizing sales quota; 2- client relations; 3- sales prospecting; 4- existing account sales grow; 5- product &/or service sales goals; 6- strategic goal sharing; 7- ethical leadership; 8- learning objectives; 9- sales-to-client negotiations; 10- time & territorial management; 11- consultative selling skills; 12- critical thinking & analytical skills; and 13- internal network relations).

\( H_6 \): Sales teams failed to meet expectations for the following fundamental reasons: Goals unclear (55%); Changing objectives (55%); Lack of accountability (51%); Lack of management support (49%); Lack of role clarity (47%); Ineffective leadership (45%); Low priority of team (40%); and No team-based pay (30%).

\( H_7 \): Sales managers are currently under-performing against sales targets and CEOs lacked confidence in their sales leaders.

The Sales Relationship Drivers Hypotheses

\( H_8 \): Have salespersons developed a broad-based network with a multitude of persons in a myriad of functional positions within their own firm?

\( H_9 \): Are sales team’s ethical standards - standards that clearly emphasize honest and trustworthy communication between sales teams and their client(s) clearly being exercised in today’s B2B selling?

\( H_{10} \): Do sales persons embrace partnership selling over product selling?

\( H_{11} \): Do sale persons understand and apply a customer-centric selling model to become long-term partners with their customers?

\( H_{12} \): Does the tenured sales leadership assume the roles of team coordination, tasks manager, internal resource gatherer, team meeting organizer, and being the primary closer of sales?

\( H_{13} \): Are sales persons accountable to their clients (in terms of saying what is to be done and doing what was said)?

\( H_{14} \): Are sales persons accountable to their sales organization, to include (a- internal resource requirements to service a client; b- sales team responsibilities and resource utilization; c- sales team learning & development goals/objective being up-to-date; and d- sales team commitments to their clients)?

\( H_{15} \): Are sales teams properly delegating and equitably sharing responsibility so that no single salesperson becomes overly burdened with these various activities?

\( H_{16} \): Are sales persons aware of the jobs that their product/service sales support staff does on a daily basis?

RESEARCH LIMITATIONS

Although somewhat pleased with the secondary research and its coverage of the subject matter, there was, as to be expected, few literary works that addressed the most current situations and needs for all of the sales relationship drivers. The primary research conducted for this manuscript was clearly meaningful but did not cover the entire U.S. The quantitative focus of this research was oriented toward large scale B2B sales environments with the ability to implement and manage the sales relationship drivers; however, modifications to the aforementioned concepts may be useful to smaller size companies with either B2B or B2C sales situation. The survey, itself fell short of the statistically significant respondent quantity as the final respondent count was only 70 out of a possible approximately 280,000 candidates, nation-wide.

RESEARCH FINDINGS

Although five months of effort was expended, only 70 screened and objective-oriented responses were completed. In light of the respondents being primarily sales managers, it had already been assumes that the response number would be rather low. None-the-less, statistical analysis was conducted on all the questionnaire responses. Statistical mean, variance, standard deviation and F-test for variance comparisons were calculated, tabularized and presented next.
Table 1: Statistical Findings - Q1.1 to Q1.6

<table>
<thead>
<tr>
<th></th>
<th>Q1.1</th>
<th>Q1.2</th>
<th>Q1.3</th>
<th>Q1.4</th>
<th>Q1.5</th>
<th>Q1.6</th>
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<tr>
<td>Mean</td>
<td>6.42</td>
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<td>1.18</td>
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<td>1.76</td>
<td>4.01</td>
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<td>Q1.1 - Q1.2</td>
<td>Q1.2 - Q1.3</td>
<td>Q1.3 - Q1.4</td>
<td>Q1.4 - Q1.5</td>
<td>Q1.5 - Q1.6</td>
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<td>0.69</td>
<td>0.01</td>
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Table 2: Statistical Findings - Q2 to Q5

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<td>5.38</td>
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<tr>
<td>Std. Dev.</td>
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<tr>
<td>Var.</td>
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Table 3: Statistical Findings - Q6.1 to Q6.9

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<th>Q-6.4</th>
<th>Q-6.5</th>
<th>Q-6.6</th>
<th>Q-6.7</th>
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<td>Mean</td>
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<td>4.77</td>
<td>4.11</td>
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<tr>
<td>Std. Dev.</td>
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<td>1.48</td>
<td>1.75</td>
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<td>1.88</td>
<td>1.79</td>
<td>1.90</td>
<td>1.89</td>
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<td>Var.</td>
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<td>3.07</td>
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<td>3.52</td>
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<td>Q6.2 - Q6.3</td>
<td>Q6.3 - Q6.4</td>
<td>Q6.4 - Q6.5</td>
<td>Q6.5 - Q6.6</td>
<td>Q6.6 - Q6.7</td>
<td>Q6.7 - Q6.8</td>
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Table 4: Statistical Findings - Q7.1 to Q7.6

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<tbody>
<tr>
<td>Mean</td>
<td>3.33</td>
<td>3.52</td>
<td>4.41</td>
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<td>3.52</td>
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<td>1.61</td>
<td>1.59</td>
<td>1.67</td>
<td>1.74</td>
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<td>Var.</td>
<td>3.59</td>
<td>3.35</td>
<td>2.58</td>
<td>2.52</td>
<td>2.80</td>
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</tr>
<tr>
<td>F-test</td>
<td>Q7.1 - Q7.2</td>
<td>Q7.2 - Q7.3</td>
<td>Q7.3 - Q7.4</td>
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<tr>
<td></td>
<td>0.77</td>
<td>0.30</td>
<td>0.92</td>
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<td>0.75</td>
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Table 5: Statistical Findings (cont.) – Q7.7 to Q7.13

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<th>Q-7.9</th>
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<th>Q-7.11</th>
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<td>3.89</td>
<td>3.67</td>
<td>4.11</td>
<td>3.70</td>
<td>3.67</td>
<td>3.53</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>2.16</td>
<td>1.61</td>
<td>1.69</td>
<td>1.65</td>
<td>1.69</td>
<td>1.62</td>
<td>1.50</td>
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<tr>
<td>Var.</td>
<td>4.67</td>
<td>2.59</td>
<td>2.85</td>
<td>2.73</td>
<td>2.86</td>
<td>2.63</td>
<td>2.25</td>
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<td>F-test</td>
<td>Q7.7 - Q7.8</td>
<td>Q7.8 - Q7.9</td>
<td>Q7.9 - Q7.10</td>
<td>Q7.10</td>
<td>Q7.11</td>
<td>Q7.12</td>
<td>Q7.13</td>
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<tr>
<td></td>
<td>0.022</td>
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<td>0.850</td>
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Table 6: Statistical Findings - Q8 to Q12

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<tr>
<th></th>
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<th>Q-10</th>
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<th>Q-12</th>
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<tr>
<td>Mean</td>
<td>3.31</td>
<td>4.55</td>
<td>4.73</td>
<td>4.37</td>
<td>5.19</td>
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<tr>
<td>Std. Dev.</td>
<td>1.88</td>
<td>1.79</td>
<td>1.57</td>
<td>1.69</td>
<td>1.25</td>
</tr>
<tr>
<td>Var.</td>
<td>3.53</td>
<td>3.21</td>
<td>2.48</td>
<td>2.86</td>
<td>1.56</td>
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Table 7: Statistical Findings - Q13.1 to Q13.5

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<tbody>
<tr>
<td>Mean</td>
<td>5.12</td>
<td>4.67</td>
<td>4.42</td>
<td>4.57</td>
<td>4.53</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>1.49</td>
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<td>1.73</td>
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<tr>
<td>Var.</td>
<td>2.07</td>
<td>2.62</td>
<td>3.00</td>
<td>3.16</td>
<td>4.05</td>
</tr>
<tr>
<td></td>
<td>0.356</td>
<td>0.599</td>
<td>0.839</td>
<td>0.329</td>
<td>0.009</td>
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</tbody>
</table>
Hypothesis H1 addressed six distinct areas of a sales manager’s concern: 1- customer satisfaction (mean value (mv) 6.42), 2-quality (mv 6.52), 3- market niches (mv 5.53), 4-value-added products (5.73), 5- problem-based solution thinking (mv 5.83), and 6- international diversity of customization, modification, & integration (mv 4.24). All but the last of these six factors were statistically accepted with the sixth being neither accepted nor rejected. The F-test variance comparisons showed distinct independence of respondent answers except for Q1.1 – Q1.2 with a 0.69; and Q1.4 – Q1.5 with a 0.98.

Hypothesis H2 addressed to what extent salespersons considered B2B selling as a significant responsibility (mv 5.88).

Hypothesis H3 addressed customer-centric selling models that have mandated B2Bs to strive for long-term partnerships with their customers in, which the question was posed, do sales persons understand the complexities within the customer's business and the market environment surrounding it in order to develop a customer-centric selling philosophy (mv 5.09)?

Hypothesis H4 addressed salesperson ‘burn-out’ as a function of being over burdened with sales goals and responsibilities (mv 5.38). And, Hypothesis H7 addressed sales person lack role clarity, in terms of the selling functions (mv 4.55). With above mean values, Hypotheses H2, H3, H4, and H7 were statistically accepted.

Hypothesis H5 addressed thirteen distinct areas of a typical B2B sales person may lack role clarity, in terms of the following selling functions: 1- Maximizing Sales Quota (mv 3.33); 2- Maintaining Client Relations (mv 3.52); 3- Sales Prospecting (mv 4.41); 4- Existing Account Sales Grow (mv 3.61); 5- Product &/or Service Sales Goals (mv 3.52); 6- Internal Strategic Goal Sharing (mv 3.97); 7- Ethical Leadership (mv 3.88); 8- Maintaining Learning Objectives (mv 3.89); 9- Sales-to-Customer Negotiations (mv 3.67); 10- Time & Territorial Management (mv 4.11); 11- Maintaining Consultative Selling Skills (mv 3.70); 12- Maintaining Critical Thinking & Analytical Skills (mv 3.67); and 13- Maintaining Internal Network Relations (mv 3.53).

Fundamentally, all the mean values were not accepted except for the following that received neither accepted nor rejected statistical values: 3- Sales Prospecting (mv 4.41); 6- Internal Strategic Goal Sharing (mv 3.97); 7- Ethical Leadership (mv 3.88); 8- Maintaining Learning Objectives (mv 3.89); 10- Time & Territorial Management (mv 4.11); and 11- Maintaining Consultative Selling Skills (mv 3.70). F-tests, although calculated, were not applicable.

Hypothesis H6 addressed nine distinct areas of a sales manager’s failure to meet expectation for the following fundamental reasons: 1- Goals unclear (mv 3.66); 2- Changing internal objectives (mv 4.77); 3- Changing client-based objectives (mv 4.11); 4- Lack of accountability (mv 3.81); 5- Lack of management support (mv 4.38); 6- Lack of role clarity (mv 3.94); 7- Ineffective leadership (mv 4.59); 8- Internally, low priority of team (mv 3.58); and 9- No team-based pay (mv 3.84). Only 2 of the 9 elements tested were accepted base upon mean values, ineffective leadership (mv 4.59) and changing internal objectives (mv 4.77). The other 7 were neither accepted nor rejected with means hovering around 4.0 on a 7-scale. The F-test calculation reflected strong similarities between most of the nine sub-question responses with only the first two question responses, Q6.1 - Q6.2 having an F-test of 0.034.

Hypotheses H8, having salespersons developing a broad-based network (mv 3.31) was not statistically accepted. However, H9, sales team’s ethical standards (mv 4.55); H10, sales persons embracing partnership selling over product selling (mv 4.73); H11, sale persons understanding and application of customer-centric selling model to become long-term partners with their customers (mv 4.37); and H12, the tenured sales leadership assuming the roles of team coordination, tasks manager, internal resource gatherer, team meeting organizer, and being the primary closer of sale (mv 5.19) were all statistically accepted.

Hypothesis H13 addressed five distinct areas: 1) Team Coordination (mv 5.12); 2- Tasks Manager (mv 4.67); 3- Internal Resource Gatherer (mv 4.42); 4- Team Meeting Organizer (mv 4.57); and 5- Primary Closer of Sale (mv 4.53) were all statistically accepted. F-tests were conducted with the following result: Q13.1 to Q13.2 (0.356); Q13.2 to Q13.3 (0.599); Q13.3 to Q13.4 (0.839); Q13.4 to Q13.5 (0.329); and Q13.1 to Q13.5 (0.009).

<table>
<thead>
<tr>
<th></th>
<th>Q14</th>
<th>Q15.1</th>
<th>Q15.2</th>
<th>Q15.3</th>
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<td>F-test</td>
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<tr>
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<td>0.327</td>
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<td>Q15.2 to Q15.3</td>
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<td>Q15.3 to Q15.4</td>
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</table>
Hypotheses H14, salespersons accountability to their clients (mv 5.23) and H16, salespersons being aware of the jobs that their product/service sales support staff conducted (mv 4.78) were statistically accepted. Whereas, H15, sales teams properly delegating and equitably sharing responsibility (mv 3.94) was neither accepted nor rejected.

CONCLUSIONS

It was most refreshing to have determined that the majority of the hypotheses were accepted. Such results strongly validate the values previously stated regarding the indispensability of the eight relationship drivers. It seems that most respondents felt that there were little to no role clarities in the selling functions. It would seem that most sales and sales managers seem to feel that there is sufficient confidence and support from the highest levels in their respective organizations.

The distinction between a salesperson and a professional has been blurred because the salesperson of today is a ‘pro’. Many salespeople know more about their field and product than the buyer. This expertise enables the seller to become the buyer’s partner, a counselor on how to solve problems. Today’s salesperson professionally has provided information that has helped customers make intelligent actions to achieve their short- and long-term objectives. Service and follow-up are then provided to ensure satisfaction with the purchase. This structure has built customer loyalty — a ‘relationship’ (Futrell, 2011).

Over the next few years, new and dynamic forces will shape sales careers. Salespeople will continue to rely heavily on their technical, human, and conceptual skills; however, they will apply them in different ways— all towards enhancing customer relationship building. Major changes occurring today will likely continue to occur in the distant future and require salespeople to become even more knowledgeable in areas they didn’t need to know about only a few years ago. These include:

- International/global selling,
- Diversity of salespeople and customers,
- Customer partnerships,
- Technology, and
- Ethics (Futrell, 2011)

Hand-in-hand with being problem-solvers, salespeople in the 21st century must also be life-long learners. (Journal of Personal Selling & Sales Management, 2002). Winter In order to survive in an ever-changing world, salespeople must constantly acquire new knowledge and skills that will help them adapt. They can then apply their skills and knowledge to help solve problems for the customer of the future.

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A STUDY ON THE CONTEMPORARY RISEN ISSUES IN THE MERGERS AND ACQUISITIONS: STRATEGY OF THE MEXICAN BUSINESS LEADERS

José G. Vargas-Hernández¹ and Mohammad Reza Noruzi²
¹Universidad de Guadalajara, México and ²Islamic Azad University, Iran

SUMMARY

The corporate strategy is critical to achieving the goals of the firm and must be set out clearly and according to their needs. M & A’s have become a trend for the growth of Mexican companies, despite having diverse motivations through the description of their implementations in the three largest Mexican firms and the results we achieved demonstrate the effectiveness of this type of strategic alliances and other useful items detected less consolidated companies.

Keywords: Business, Strategy, Mergers and Acquisitions, Leading Mexican Companies.
JEL: L19, M10.

1. INTRODUCTION

Companies must give direction to the resources they have to change their environment and absorb uncertainty in order to maximize their profits. There are different perspectives and strategy firms use one that most suits them. The strategies of Mexican companies tend to focus on the use of resources and capabilities to generate profit. But the results obtained by some of the strongest Mexican companies worldwide are the result of market development and practice of mergers and acquisitions (M & A), which are mostly related to areas of its core business. There is no universal strategy that works across organizations and generates the most money will also be assessed favorable and unfavorable conditions for implementation and most importantly, act on that strategy which is most appropriate and effective company in the search to achieve their goals. There are a number of multinational companies originating from emerging economies, but worldwide there are few that generate a level of utility comparable to large multinationals in the developed economies.

We must understand the nature of the signatures; leaving conceive as seeing them as productive functions and structures of governance, in which economic goals are internal structures (Williamson, 2000). Looking to create value firms have turned to new business models that have changed schemes and developed new options, strategic alliances are increasingly common, and the problem for decision makers is to establish the appropriate changes to their specific structures.

The key is that organizations seeking returns must have a good understanding of the resources they acquire to maximize its usefulness. In recent years, emerging economies have reached a considerable level of development, foreign investment has greatly facilitated the growth of these economies through the strategies and policies have been established (Wright, 2005), not only as host economies capital but also through numerous international investment.

Strategic alliances are an alternative to the growth of organizations whether we speak of contractual partnerships or alliances with exchange of capital. According to the degree of integration desired, have the resources and reach goals they had set the strategy will depend on the selection. With special emphasis on understanding the rules of the game on the market in which you want to venture and an analysis of the alliance (Peng, 2006).

The goal of all business decisions is the highest possible value creation, and hence to establish if a strategic decision, as it can be an alliance based in the capital, has the right motivation. The rationale for M & A is that they must create the new company in the case of mergers or the signing buyer in the case of acquisitions, has a value greater than the sum of values were independent firms prior to integration (Herrera Avendaño, 2001).

Some companies in Latin America (LA) have achieved little by little making its global market space, including several Mexican companies also achieved success at national level, also found in international markets through growth opportunities F & A, both public and parastatal companies in different countries.

There are several reasons to consider before establishing such a strategy. Among the main reasons we can mention the interest of getting the increased revenue, reduced costs, obtain market power, integration with specialized companies in areas where the other is weak, eliminating a competitor, achieve an increase in certain types of resources, improving yields through new management, achieve tax benefits or simply a combination of resources to increase productivity (Mascarenhas, 2006).
In late 2009 and early 2010 the major Mexican companies dedicated to strengthening and integrating their organization the various F & A made the global economic crisis affected the growth of companies, but most dealt with the situation and moved forward to consolidate its resources. The strategy not only carried out in their own lines of business but also the incursion into areas outside their main economic activities.

A. Problematization

According to the ranking of the magazine América Economia, of the 500 most important companies in AL, in 2009 Brazil was the country's 226 companies with more companies in the ranking, while only 119 signatures were from Mexico. Note that in 2002 Mexico had peaked in the 20-year history of this ranking, with 241 companies (América Economia, 2010). Some of the major companies that lead this list have made F & A of other companies and this could be a cause of increased participation in international markets and their stay in the charts. In that sense, M & A has become a trend for the growth of Mexican companies, although this was not the only alternative strategy carried out by firms and sometimes the companies selected were not the most appropriate in most cases we can see increases for firms that make us assume the effectiveness of F & A.

B. Objective

Based on the foregoing, it is established to analyze the execution of mergers and acquisitions as a strategy for Mexican companies best positioned within the major world rankings to achieve growth. Of which raised the hypothesis of whether the major Mexican companies in their strategies have made M & A, if these have been within its sector and if they got support their growth.

The methodology developed will be in the selection of Mexican companies which made the descriptive analysis of the implementation of F & A from determining what is your current place in the world rankings?, This analysis pointed out the main aspects and a brief description of the strategy developed for each selected company responding to the questions of what strategies are being implemented for growth? And what are the benefits of M & A? then general conclusions will be presented and finally identify items to choose M & A in the value creation and growth of their firms.

2. MEXICAN LEADER (EML)

A. Selection of Companies

Different rankings worldwide to recognize the largest companies in the world by their level of income, profit margins, production capacities and other factors significantly outweigh the other organizations worldwide is a kind of selecting process.

From 2009 to date has remained constant the number of Mexican companies (18) in the 2000 world leading companies (Forbes Staff, 2011), while ranking in the magazine America Economia in a period of only seven years, from 2002 to 2009, the number of Mexican companies within the first 500 in TO 50% down (América Economía, 2010). From this we can conclude that a small number of Mexican organizations have consolidated their presence in international markets while other smaller companies have lost its position in international markets and their productivity has decreased significantly.

Moreover, when analyzing the situation of Brazilian companies we find that these companies generally have a better development. From the figure of 19 companies that appeared on the Forbes list in 2006, has grown to 37 companies in 2011 within the first 2000 worldwide (Forbes Staff, 2011) While in the region, by 2009 already had 226 companies in the ranking of the magazine America Economia (América Economia, 2010).

Mexico is a country recognized in international markets, has the largest amount of international trade agreements, products and quality of its workforce have accepted worldwide and is a geographically favored nation. For this and other issues is that it is difficult to understand why more companies do not have positioned elsewhere in the world, this concern arises to analyze and understand the strategy of these leaders and Mexican companies to make their activities serve as an example in the development of other large and medium enterprises. Mexican companies included in Forbes' list of 2011 are shown in Table 1, among which are America Movil (# 88), Femsa (# 406) and Grupo Mexico (# 485) as the first three Mexican companies and they are the only Mexican in the top 500 worldwide in this ranking. Therefore be at these three firms in which to base the study analyze their F & A as the main cause of their achievements, and what subsequent to refer to them as we do with the term leading Mexican companies (EML).
B. Business Analysis

Below is a description of the situation of EML and a narrative of the main strategies of F & A who have developed, starting with the corporate Grupo Mexico ranks third, followed by analysis of FEMSA to conclude this section with the company America Movil.

1) GRUPO MEXICO

Utilities 2010: 1.800 million dollars (MDD).

National companies that comprise: Minera Mexico, Southern Copper Corporation, Ferromex, Ferrosur, Intermodal, PEMSA, Mexico and Consuteck Construction Company. International companies: Americas Mining Corporation and ASARCO.

Grupo Mexico is the number one Mexican mining company and has the second largest copper reserves in the world, has operations in Mexico, Chile and Peru. It currently has 13 operating mines and 10 projects in operation.

Mexico Construction Company was the first of this group, created in 1942 soon becoming one of the main building of the country. For the year 1965, acquired 49% of ASARCO is a mining company based in Arizona and created ASARCO Mexicana, which in 1974 became Industrial Minera Mexico (IMMSA). To be listed on the Mexican stock exchange was created in 1978 Grupo Industrial Minera Mexico (GIMMEX) substituted by Grupo Mexico in 1994.In 1997 buys 24% share of Union Miniere Acce the Cananea mine, and that same year, Grupo Mexico (74%) with ICA (13%) and Union-Pacific (13%) take on the granting of various lines of rail, thus creating subsidiary Ferrocarril Mexicano buys S. A. C. V. (Ferromex).Grupo Mexico acquired Asarco Incorporated in 1999, which controlled 54% of Souther Peru Copper Corporation and with this acquisition becomes the second company with the largest reserves of copper in the world. Later the company went through a phase of investment in improvement and even a merger between Southern Peru Copper Corporation and Minera Mexico, Southern Copper Corporation transformed and expanded its ownership to 75.1% (Grupo Mexico, 2011).

During the period from 2006 to 2010 the company went through a process of restructuring and reorganization of its business units and assets, channeling their income primarily in the modernization process, both in the extraction of minerals such as administrative control.
2) FEMSA
Utilities 2010: 3.300 MDD.
Companies that integrate national: Coca-Cola FEMSA and OXXO.
International companies: Heineken (20%).
FEMSA is a leading company engaged in the beverage industry, through Coca-Cola FEMSA, the largest independent bottler of Coca-Cola products in the world with presence in 9 countries of LA, operates OXXO (8,621 stores) and participates the sale of beer, the second largest shareholder of Heineken beer leader with presence in over 70 countries (Femsa, 2011). Each business unit has this interesting aspects of corporate analysis, but in this article we only focus on the strategies undertaken in their processes of growth through M & A.

a) OXXO
The company opened an average of 3 stores a day in Mexico in 2010, the same year began operations in Colombia and now has eight stores, all of its growth strategy has been made based on the resources of the firm and not operating as a franchise and has not made F & A to boost growth.

b) COCA-COLA FEMSA
Bottling born in Mexico of the acquisition of the franchise in the year 1979, distributing its products in much of the country, in 1994 acquired 51% of the shares of Coca-Cola in Buenos Aires, Argentina and in 2002 announced PANAMCO acquisition, the largest bottler of AL at the time, from this point the company's growth was substantial and that the acquisition was another part of the territory of Mexico, the countries of Costa Rica, Colombia, Guatemala, Nicaragua, Panama and Venezuela, and some regions of Brazil, becoming the leader of al-bottling company. The company decided to follow the line of drinks and in 2007 was surprised with the acquisition of Jugos del Valle in Mexico and Brazil REMIL in 2008, which increased its stake in the Brazilian market, together with Mexico are the most attractive markets in LA. Not all acquisitions must be of large international companies, bought the company in 2008 Agua de los Angeles, the Valley of Mexico, and the acquisition was achieved double the share of that market in the city.

In 2010 he returned to surprise us with the purchase of the Dairy Industry Group Panamanian Company, which will enter the milk products is one of the most dynamic markets and value in the beverage industry. Firms do not only F & A strategies, but also establish contractual alliances.

c) BREWERY
Founded in 1890 with the name of Cervecería Cuauhtémoc Mexico, in 1985 merges with Cervecería Moctezuma, the event serves to show that the strategy of M & A has been several years a good option for growing firms, with the merger of company not only expanded its product offering to the domestic market but also increase thus achieved their participation. In 1994, partners with the Canadian brewer John Labatt Ltd., which buys 30% stake. Later in 2004 the share repurchase was sold to begin its expansion strategy internationally. That same year established a trade agreement with Heineken taking responsibility for the distribution, promotion and sale in the United States signed an agreement with Coors Brewing Company for the exclusive marketing of Coors Light beer in Mexico.

During 2005 continued the strategy of Sleeman Breweries contractual alliances in Canada and Molson Coors in the UK, establishing them as strategic suppliers to market their products in these territories. It was in 2006 when the firm acquired the Brazilian brewer Kaiser, acquiring 68% of the shares and therefore begins to operate in the two Latin American markets more attractive. For this was a considerable increase in revenue and a commercial boost with greater market share, through which has been pushing their products through the extensive distribution network operates.

The consolidation of Cervecería Cuauhtémoc Moctezuma led the company Heineken, who already owned the U.S. distribution, acquired in 2010 for signature by the exchange of 100% of its operations by 20% of the shares of Heineken and participate in the council Administrative Heineken.

3) AMERICA MOVIL
Utilities 2010: 7.300 MDD.
National companies that comprise: Telcel and Telmex.
International companies: Telmex Internacional, Claro (15 countries: Argentina, Brazil, Chile, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Dominican Republic and Uruguay), Comcel (Colombia), Embratel (Brazil), Net (Brazil) and Tracfone (USA).

America Movil is not only a leader in the mobile telecommunications sector operating in 18 countries AL, but is the fourth largest in the world in terms of proportionate subscribers and number one Mexican company by market value and income-rich. Through the acquisition of several public companies and parastatals telephony has been consolidating its presence in Latin America. Your participation in the cellular market in Mexico is 71%, 33% in Central America, Caribbean 43% and in 9 South American countries it operates has a stake greater than 30% except for Chile (22%) (America Movil 2010).

The purchase of Carso Global Telecom by America Movil, valued at 33 billion dollars, was the largest merger in Latin America in 2010, *(Agree, 2011).* America Movil was born in 2001 when it separated from fixed telephony company TELMEX, and nine years of his division is now the purchaser of the company that was born, the telcos Carlos Slim have examples of successful mergers and acquisitions from 20 years ago in which through its consortium of Southwestern Bell Telecom acquired the state-owned Telmex, while in turn the company America Movil took on various telephone companies in Latin America and joined the firm course. The acquisition by America Movil from Telmex and Carso Global Telecom International, will report that in 2010 represented 211.3 million wireless subscribers, 27.4 million fixed lines, 12 million fixed broadband connections and 8.6 million TV subscribers. He has also reported an outstanding financial performance with net profits rising contrary to those of his rival Telefónica who reported a decrease in earnings *(Datamonitor, 2010).*

America Movil continues its strategy of M & A in Latin American countries, where growth continues to consolidate, the purchase of telecommunications companies has been confirmed, the proof is to buy in Central operations in Honduras and El Salvador the company Digicel Group Limited in early 2011, the company has 11.5 million customers in 32 markets in the Caribbean and the Pacific by buying the users of these countries will become part of the user network Claro *(Digicel, 2011).* It is expected to enter these companies trade in Jamaica and is likely to continue establishing alliances.

The current government in Mexico has not allowed America Movil to sell packages of telephony, television and the Internet, which has proved very attractive for the income from them and from which only the big national broadcasters are benefiting. But America Movil continues to grow despite the hardships and will strengthen this marketing strategy in Colombia, where it already does and Brazil, where the fusion medium-term business that has begun. Therefore no surprise that eventually will achieve its mission to perform in Mexico.

C. Effectiveness of Mergers and Acquisitions

The purchase of Asarco in 1956 makes clear that the use of M & A as a means for the development of the company is not a strategy that just being started, and is an example of the vision they have had the EML for several years.

M & As have become steadily more present and in the last 15 years has increased the tendency of local firms to make such alliances. Even in areas other than the main economic activity of the company, either in activities that have a relationship, as in the case of Grupo Mexico, which through Ferromex rail networks can transport material from mines *(Mascarene, 2006)*, or in activities that are not related to its activity as for the purchase of Slim a percentage of the New York Times commented in the introduction to this article.

In the latest merger by Grupo Mexico to Southern Peru Copper Corporation, clearly identified as their main motivation access to more resources and greater expertise that contributed to the growth of the firm and its consolidation, giving reason to the reasons cited for an F & A. In the case of Grupo Mexico is clear that, thanks to M & A can gain access to resources that became the second company with the largest copper reserve on the planet, a situation which could hardly have been achieved through other means, but we cannot downplay made to other strategies, mainly in the restructuring processes, as though in recent years has not made any acquisition revenues and profits have increased significantly.

At Coca-Cola FEMSA’s strategic alliances have been crucial since its inception through the acquisition of the concession for the distribution of Coca-Cola. Its main thrust of internationalization has been achieved through acquisitions, Coca-Cola first in Buenos Aires in 1994, in 2002 and finally in 2008 PANAMCO REMIL. It is clear that M & A are effective strategies to support access to international markets *(Femsa, 2011).*

Even in small markets an acquisition may represent a source of consolidation as the example of Los Angeles Water, or can also serve to diversify and increase the product line as was the case with the purchase of Del Valle and Dairy Industries Group.
The area brewery is not very different from Coca-Cola FEMSA and in this area we also find that growth has been sustained in practice M & A throughout its history, from the merger of Cervecería Cuauhtémoc and Cervecería Moctezuma to reduce production costs and gain greater power in the domestic market, to then develop a series of agreements to distribute its products with different breweries worldwide in order to internationalize their brand, then bought the company I represent growth Kaiser in LA.

Increased participation in AL, their rapid growth and income levels were reported in 2010 decisive for the Dutch brewer Heineken, who already was familiar with their products, was willing to hand over 20% of its shares for the total brewery operations (Buchanan, 2010). The case of FEMSA shows that even within the same firm strategies in its business units are not the same and although M & A have been an important factor for the growth of its operations in two business units to OXXO have not been the growth medium, although this does not mean that if done would not succeed, perhaps for future growth would be predicted to get OXXO in the event that made M & A.

Although revenues declined FEMSA in the last year, as expected mainly by revenues from brewery failed to receive after the sale the profits and assets which increased due to continued growth, a result of their internationalization in its other two business units (Forbes Staff, 2011).

The company America Movil was from the beginning a successful business and began growing by leaps and bounds through the voracious acquisition of a large number of telephone companies in different markets of LA, which gradually consolidated their position as the company the continent's leading mobile growth projections and a substantial number of customers. But the factor determinant of growth in recent years did so by buying the company Carso Global Telecom, which despite being the same owner does not mean you should not have the resources to acquire and thus establish its position well above their competitors (Agree, 2011).

With this acquisition the company managed to improve performance through new management and increased productivity through shared resources. In the case of the Brazilian market we find that M & A conducted achieved integration of telephone and television companies, achieving also prevent the entry barriers to foreign companies on television. A through M & A company America Movil has gained access to markets, competitors and has been removed has increased its presence in Latin by the large number of mobile phone users.

America Movil has income greater than twice those of FEMSA and Grupo Mexico together and last year were 50% higher than those achieved in the previous year (Forbes Staff, 2011). It has a considerably higher amount of assets to the rest of the EML and the resources to continue to give the talk of the coming years, and probably will be so for your next marketing packages that include television services in Mexico which is not far from become a reality now and thanks to a cooperative alliance with Dish satellite television company, has partially offset the inability to provide the services themselves. So surely soon find their way into and possibly move to Televisa in the medium term.

3. CONCLUSIONS

The EML has consolidated its place in the main rankings because of its strategic vision and outstanding performance compared to other firms, and their efforts are recognized worldwide, as mentioned in the beginning of this article is not unique strategies to achieve growth companies and many alternative firms, who are trying to find the most appropriate.

The F & A is a common strategy in organizations despite being of sectors and business activities very different, it is clear the importance that has occurred in recent years this type of strategic alliance as all EML have used in some stage, as a means to grow and achieve their goals. Because of the variety among firms' motivations are varied, although the above if it can be concluded that the implementation of the strategy has a tendency among the EML to be used to facilitate the internationalization of the firm.

Growing companies need to analyze M & A as an attractive option for growth, regardless of the sector where they are and whatever economic activity they perform, trying to combine this strategy with others to maximize the performance of the firm. Using this type of partnership should be done by companies with an average degree of maturity and sufficient resources to operate efficiently to the party who performed the alliance, because otherwise result in detriment to the benefit of the parties involved.

4. REFERENCES

A Study on the Contemporary Risen Issues in the Mergers and Acquisitions: Strategy of the Mexican Business Leaders


ECONOMIC INSTABILITY AND FRAUD LOSS: A DECADE OF UNCERTAINTY

Kim James¹, Robyn Hulsart² and Dana Cummings³
¹Kaplan University, USA, ²Austin Peay State University, USA and ³Lower Columbia College, USA

ABSTRACT

As the pervasiveness of corporate and accounting scandals caused by instances of fraud dominate headlines, the popular press routinely asserts there is a direct correlation between a shrinking economy and an increase in the prevalence of fraud (Coecnen, 2010; McCartney, 2011; Smith, 2009). This article discusses selected indicators of economic downturn, fraud, legislative deterrents, and the likelihood that fraud exists in a number of organizational settings. Information gathered from multiple sources including the Association of Certified Fraud Examiners (ACFE), the Committee of Sponsoring Organizations of the Treadway Commission (COSO), the Federal Bureau of Investigation, and Deloitte’s Forensic Center was examined to determine the extent to which the representations made by the media are accurate. During the period investigated, the case can be made there has been a continual slight increase in the prevalence of fraud but there is an absence of evidence specifically linking the increase to the downturn in the economy.

Keywords: Economy, Fraud, Internal Control, Loss, SOX.

INTRODUCTION

On February 11, 2009, an abc News headline caught the public’s eye: Fraud 'Directly Related' to Financial Crisis Probed. This was not the first, and certainly not the last, sensational headline espousing a connection between the downturn in the economy and an increase in occupational fraud. What made this story different was the report that FBI Deputy Director John Pistole advised Congress that bureau resources currently assigned to national security may need to be redirected due to the increase in white collar crime. According to the Deputy Director, “The FBI has more than 530 open corporate fraud investigations, including 38 corporate fraud and financial institution matters directly related to the current financial crisis…These are significantly large, similar to Enron.” (Ryan, p. 1)

Historical Background

It was the longest bull market in United States history and it transformed the world economy. According to the National Bureau of Economic Research, 1982-1999 was one continuous economic mega-expansion of proportions never before seen. More wealth was created during this period than in the previous 200 years (Laffer, n.d.). This period of prosperity continued unabated so long that even the most reasonable of people were convinced that we had managed to alter the business cycle and contractions might be a thing of the past. It was on the crest of this wave that George W. Bush, on June 12th, 1999, announced his candidacy for President. Though he had no way of knowing it, this wave was about to become a devastating tsunami.

In March 2001, the “irrational exuberance” cautioned by Federal Reserve Chairman Alan Greenspan, came to a dramatic conclusion (Reier, 2001). What has since come to be known as the dot.com bubble exploded in spectacular fashion. This crash heralded the end of the longest bull market in history and the United States plunged into recession.

The next explosion was literal as well as figurative: the September 11th terrorist attack. While at a horrific price, in terms of both blood and treasure, this event did stimulate the economy and pull us out of the dot.com initiated recession. The recovery, however, was short-lived, however, as Enron, Tyco, WorldCom, and Arthur Andersen self-destructed.

Housing was the next train out of the yard. The housing market peaked in the summer of 2005 with home prices rising and falling throughout 2006 and 2007. According to the US Census Bureau, the average median home price in March 2007 was $262,600. “Irrational exuberance” exacted its toll once again, and inventories increased as prices declined. Homeowners rapidly found themselves “underwater” with their mortgage loans, and foreclosures began their upward climb, reaching unprecedented heights. At the end of the decade, despite Congress’ attempts to stimulate the housing market through homebuyer credits, the median home price had declined 30% from its high.

Oil was yet another train wreck. The price of light sweet crude began the decade at under $30 per barrel. In July of 2008, the price peaked at over $140 per barrel, before falling back and ending the decade in the high $80 range (King, Deng & Metz, 2011).
The economy officially entered recession in December 2007 and the economic turmoil deepened with the failures of Fannie and Freddie Mac and the Troubled Assets Relief Program (TARP). Unemployment, which was at 4% in 2000, reached a 27-year record in October 2009, topping out at 10.1% according to the U.S. Bureau of Labor Statistics (2011).

Legislation

On July 30th 2002, President Bush signed the Sarbanes Oxley Act (SOX), a law significantly changing corporate governance and the rules and regulations under which accounting firms and corporations must operate. Provisions such as Section 404 increased the responsibilities of management. Other provisions include the establishment of the Public Company Accounting Oversight Board (Title I), and increased guidelines for auditor independence (Title II). Title III outlines corporate responsibility; increased financial disclosures are discussed in Title IV. Titles V and VI primarily deal with securities analysts while Title VII covers reports prescribed by the Comptroller General of the United States and the Securities and Exchange Commission. Finally, Titles VIII - X address the statute of limitations of securities fraud, determine sentencing guidelines, Whistleblowers policies, penalties and codes for fraud attempts, conspiracies, and mail fraud, and amend the Employee Retirement Income Security Act (ERISA), while also setting guidelines for corporate responsibility for financial reporting (Congress of the United States, HR 3763).

Also issued in 2002 was Statement on Accounting Standards No. 99: Consideration of Fraud (SAS 99). The intent of the standard is to improve auditor performance in detecting material misstatements due to fraudulent financial reporting. Donald Cressey (Wells, 2007) developed the fraud triangle which includes the tenets of pressure, opportunity and rationalization while SAS 99 defines these concepts as incentives, opportunities and attitudes. SAS 99 discusses the description and characteristics of fraud, the importance of professional skepticism, the risk of material misstatements due to fraudulent behavior, measures to obtain the information to identify the risks of material misstatements, identifying, assessing and responding to risks as well as evaluating, communicating and documenting results (FASB, 2006). Reasonable person theory would suggest that with the implementation of SOX and SAS 99 the potential for, or, the statistical probability of fraud would be minimized. However, events have proven this assumption to be incorrect. Because, at the time, the financial bubble of the housing market was emerging.

On July 21, 2010, President Barack Obama signed the Dodd-Frank Wall Street Reform and Consumer Protection Act. Passed as a response to the continuing recession, the Act implements sweeping financial regulatory reform. The stated aim of the Act is “to promote the financial stability of the United States by improving accountability and transparency in the financial system, to end “too big to fail”, to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes” (Congress of the United States, HR 4173, p. 1). The provisions include strengthening consumer protections, ending “too big to fail” bailouts, protecting investors through new rules for transparency and accountability, extending whistle blower protection, and empowers regulators to aggressively pursue financial fraud.

METHODODOLOGY

We will report the findings of multiple sources including the Association of Certified Fraud Examiners (ACFE), Committee on Sponsoring Organizations of the Treadway Commission (COSO), Federal Bureau of Investigation, and Deloitte’s Forensic Center, in order to identify any relationship between the state of the economy and the prevalence of fraud. We will not be analyzing this data, but merely reporting the findings of these organizations in an effort to support our premise that during economic downturns, the commission of fraud increases. Topics will include indicators of economic downturn, fraud, and the likelihood that fraud exists in a number of organizational settings. Also, correlations between fraud and legislative deterrents such as SOX and SAS 99 will be discussed.

RESULTS

Fraud surveys agree that occupational fraud can be categorized into three broad categories: Asset misappropriation, corruption and financial statements. Asset misappropriation is generically defined as the movement of assets to a wrongful place. This definition could include theft, embezzlement or the misuse of an organization’s assets. Corruption is loosely defined as the process of changing one’s morals or principles from good to bad. In terms of fraudulent behavior we are looking at acts of bribery or conflicts of interest. Financial statement fraud encompasses overstated assets, understatements or concealment of liabilities, timing differences and largely misrepresenting the financial picture of an organization.

Using the ACFE’s Report to the Nation survey results, the results demonstrated that over 85%, 92.7% and 91.5% of the fraud cases reported were attributed to the category of asset misappropriation for the years 2002, 2004 and 2006 respectively; for those same years 12%, 30% and 30.8% of the frauds reported were attributed to corruption and the balance to financial
statement frauds. The 2008 report suggests a decline in percentages with 88.7% of fraud being perpetrated as asset misappropriations, 27.4% corruption schemes and 10.3% occurring in fraudulent financial statements.

In their 2010 *Report to the Nation*, the ACFE observed the percentage of occupational fraud cases decreased in the areas of corruption and financial statement fraud but within the area of asset misappropriation the actual percentage of fraud cases increased. In the areas of corruption and asset misappropriation the amount of financial losses actually dropped. The 2010 report noted fraudulent behavior was still on the rise in both private and public companies but the number of reports for government and not-for-profit organizations declined from previous years.

Survey results also demonstrate that asset misappropriation schemes increased to 89.8%, up 1.1% from 2008; corruption schemes decreased to 21.9% or 5% from 2008 and financial statement frauds decreased 7% from that of the survey results of 2008; Dropping from 10.3% to 4.3% (2010a). Information from COSO (2011) and the National Business Ethics Survey (2009) from the Ethics Resource Center highlight and corroborate the ACFE’s findings.

The number of cases reported by ACFE was 1,134 reported cases between January 2004 and January 2006. In 2008, 959 cases of fraud were reported for the time period between January 2006 and February 2008 and in 2010 the actual number of reported cases was 1,843 almost three and four times the number of cases reported in 2002 and 2004, these were 663 and 508 respectively. The cases here primarily deal with asset misappropriation, corruption and financial statement fraud.

Coincident with the passage of SOX, in July 2002, President Bush formed a task force comprised of senior executives from numerous federal agencies for the express purpose of addressing the torrent of corporate fraud cases that surfaced in the wake of the Enron scandal. As the lead agency, the FBI focuses its efforts on cases which involve accounting schemes, self-dealing by corporate executives, and obstruction of justice to conceal illegal activities from criminal and regulatory authorities. According to the 2005 FBI Crimes Report, the majority of corporate fraud cases pursued by the FBI involve accounting schemes designed to deceive investors and Wall Street analysts about the true financial condition of a corporation.

The 2009 FBI Crimes Report details the incidence of fraud more specifically when it states, “While the number of cases involving the falsification of financial information remains relatively stable, the FBI has recently observed a spike in the number of corporate fraud cases involving subprime mortgage lending companies” (p.3). Other areas of increase were noted in securities and commodities fraud which would include Ponzi schemes, foreign exchange frauds, and pyramid schemes.

Both the ACFE surveys and the FBI Crimes reports reveal a continual increase in the amount of reported fraudulent behavior. Although the ACFE surveys suggest that the increase is fraud with dips which may or may not be aligned with overall economic turmoil the overall tendency from 2002 to 2010 is a steady increase in fraud based behavior (Figure 1). The number of fraud cases that the FBI investigated continued to climb from 2005 through 2009 with no evidence of this decreasing as evidenced by the number of cases still pending.

![FBI Fraud Cases Pending](image)

*Figure 1: Number of Fraud Cases Pending (Source: FBI Crimes Report 2009)*
Recognizing once again that fraud by nature is a silent (concealed) crime and not easily detected makes it difficult to discover and even more difficult to quantify. Data from the 2004 Report to the Nation suggest that there is an increase in fraudulent behavior as well as an increase in the amount of financial loss over fraud reported in 2002. This information, supported by other reports such as the study conducted by the COSO Fraudulent Financial Reporting (Beasley et.al, 2010) and the FBI Crimes Reports demonstrate a rising trend in both crimes against the organization and crimes against the individual. In 2002, the estimated loss due to fraud was $600 billion, up from $400 billion in the 2000 study (Figure 2). In the 2004 Report to the Nation it was estimated that the average fraud losses were 6% of a typical organization’s average income: considering these results the estimated fraud loss was $660 billion. The 2006 Report to the Nation survey reports that the average fraud losses dropped to 5% with estimated losses approximating $652 billion. The 2008 (ACFE) report suggested that 7% of annual revenues would be lost amounting to an estimated loss of $994 billion dollars while the 2010 Report to the Nation suggest that worldwide losses could equal $2.9 trillion and losses within the United States would reach $988 billion.

Figure 2: Estimated Monetary Losses (Source: ACFE Report to the Nations 1996 – 2010)

ANALYSIS & DISCUSSION

As John Kenneth Galbraith commented, "the man who is admired for the ingenuity of his larceny is almost always rediscovering some earlier form of fraud." Fraud, according to Albrecht is "a generic term, which embraces all the multifarious means which human ingenuity can devise, which are resorted to by one individual, to obtain an advantage over another by false representations. No definite and invariable rule can be laid down as a general proposition in defining fraud, as it includes surprise, trickery, cunning and unfair ways by which another is cheated. The only boundaries defining it are those which limit human knavery" (Albrecht, Albrecht, Albrecht & Zimbekman, 2009, p. 3).

The root causes of fraud, as defined by the Association of Certified Fraud Examiner’s (ACFE) 2009 Fraud Examiner’s Manual, are “opportunity, pressure/incentive and rationalization”. In other words, “fraud is more likely to occur when someone has the pressure or incentive to commit the crime, there is a lack of oversight that provides the opportunity for the individual to commit the fraud, and the person can justify or rationalize the behavior” (p. 3). While the ACFE’s definition is considered the accepted approach to describing the elements of fraud, Wolfe and Hermanson (2004) introduced a fourth element for consideration dubbing their model the “fraud diamond”. New to the model is consideration of the individual’s capability: personal traits and abilities that play a major role in whether fraud may actually occur even with the presence of the other three elements” (p. 38). By enhancing the model to include the capability to commit fraud, the authors believe the critical question becomes whether or not the individual is actually capable of turning opportunity into reality.

As fraud, by its very nature, requires concealment, accurate observation is difficult. While frauds share certain characteristics, the motives are as individual as the fraudsters themselves. Although it is often assumed that people commit fraud for personal gain – basic greed – the reality can be more complex.

Motive often develops from financial pressure resulting from a fraudster’s excessive life style. As companies cut back on personnel, salaries, benefits, and other perks, the pressure to commit fraud to maintain a lifestyle beyond one’s reduced means increases. Adding credibility to this notion of motive, in the ACFE’s Report to the Nation (2010), behavioral flags displayed by the perpetrators were identified. The most frequently observed warning signs displayed by the fraudsters prior to detection were living beyond their means (43%) and experiencing financial difficulties (36.4%).
Pressure to meet budgets and targets in a struggling economy offers another potential motive. According to a Committee of Sponsoring Organizations of the Treadway Commission (COSO) study on financial statement fraud, “The SEC’s most commonly cited motivations for fraud included the need to meet internal or external earnings expectations, an attempt to conceal the company’s deteriorating financial condition, the need to increase the stock price, the need to bolster financial performance for pending equity or debt financing, or the desire to increase management compensation based on financial results” (p. 3).

Stakeholders at all levels, from employees to the board of directors, may be induced to falsify data to reach bonus targets and shareholder expectations. Studies have shown that the greater the fraudster's position of trust within the organization, the greater the cost of the fraud. Profiles of fraudsters also show that they are rarely caught after the commission of a single act. Most have engaged in numerous acts of fraud. KPMG, in a study of the profile of 360 fraudsters, found that 91 percent of the perpetrators were involved in multiple fraudulent transactions, and that every third perpetrator acted more than 50 times (2007). This suggests that there may be a growth process in fraud: fraudsters may mature from minor indiscretions to bold and flagrant misstatements.

Opportunity generally arises through weaknesses in internal controls. This creates an environment in which fraudsters believe the risk of detection is minimal. According to a 2010 survey by the ACFE, key fraud-prevention measures can mitigate losses significantly (McCartney, 2011). As profit is a function of the relationship between revenue and expenses, during a downturn in the economy, the focus frequently turns from increasing revenue to cutting expenses. The cost of internal controls may fall victim to cuts as it is not perceived as contributing directly to the bottom line. In addition, layoffs have been pandemic during this period, leaving holes in many organizations' internal control structures. According to a 2010 ACFE survey of CFIs working as internal fraud examiners, 11.9% said their organizations had decreased their spending on preventive controls such as employee support programs, fraud training for employees and managers, and segregation of duties; 6.9% said their organizations had decreased their spending on detective controls including fraud hotlines, internal audit departments, and independent audits (ACFE, 2010b). While these numbers may be encouraging, they involve cuts of some of the most effective controls.

### Table 1: Median Loss Based on Presence of Antifraud Controls

<table>
<thead>
<tr>
<th>Control</th>
<th>% of Cases Implemented</th>
<th>Control in Place</th>
<th>Control Not in Place</th>
<th>Percent Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotline</td>
<td>48.6%</td>
<td>$100,000</td>
<td>$245,000</td>
<td>59.2%</td>
</tr>
<tr>
<td>Employee support programs</td>
<td>44.8%</td>
<td>$100,000</td>
<td>$244,000</td>
<td>59.0%</td>
</tr>
<tr>
<td>Surprise audits</td>
<td>28.9%</td>
<td>$97,000</td>
<td>$200,000</td>
<td>51.5%</td>
</tr>
<tr>
<td>Fraud training for employees</td>
<td>39.6%</td>
<td>$100,000</td>
<td>$200,000</td>
<td>50.0%</td>
</tr>
<tr>
<td>Fraud training for managers/executives</td>
<td>41.5%</td>
<td>$100,000</td>
<td>$200,000</td>
<td>50.0%</td>
</tr>
<tr>
<td>Job rotation/mandatory vacation</td>
<td>14.6%</td>
<td>$100,000</td>
<td>$188,000</td>
<td>46.8%</td>
</tr>
<tr>
<td>Code of conduct</td>
<td>69.9%</td>
<td>$140,000</td>
<td>$262,000</td>
<td>46.6%</td>
</tr>
<tr>
<td>Antifraud policy</td>
<td>39.0%</td>
<td>$120,000</td>
<td>$200,000</td>
<td>40.0%</td>
</tr>
<tr>
<td>Management review</td>
<td>53.3%</td>
<td>$120,000</td>
<td>$200,000</td>
<td>40.0%</td>
</tr>
<tr>
<td>External audit of internal control over financial reporting</td>
<td>59.3%</td>
<td>$140,000</td>
<td>$215,000</td>
<td>34.9%</td>
</tr>
<tr>
<td>Internal audit/Fraud examination department</td>
<td>66.4%</td>
<td>$145,000</td>
<td>$209,000</td>
<td>30.6%</td>
</tr>
<tr>
<td>Independent audit committee</td>
<td>53.2%</td>
<td>$140,000</td>
<td>$200,000</td>
<td>30.0%</td>
</tr>
<tr>
<td>Management certification of financial statements</td>
<td>58.9%</td>
<td>$150,000</td>
<td>$200,000</td>
<td>25.0%</td>
</tr>
<tr>
<td>External audit of financial statements</td>
<td>76.1%</td>
<td>$150,000</td>
<td>$200,000</td>
<td>25.0%</td>
</tr>
<tr>
<td>Rewards for whistle-blowers</td>
<td>7.4%</td>
<td>$119,000</td>
<td>$155,000</td>
<td>23.2%</td>
</tr>
</tbody>
</table>

Source: ACFE Report to the Nations, 2010

In a recent study COSO found in their examination of financial statement fraud, that the audit committees and boards of the fraud companies seemed weak. Most audit committees rarely met, and the companies' boards of directors were dominated by insiders and others with significant ties to the company (COSO, 2010). In other words, the overseers were those most likely to be complicit in the fraud. When examining nearly 350 alleged accounting fraud cases investigated by the SEC, the COSO found in 89 percent of the fraud cases, the SEC named the CEO and/or CFO for involvement; within two years of the
completion of the SEC investigation, about 20 percent of CEOs/CFOs had been indicted; over 60 percent of those indicted were convicted (COSO, 2010).

Rationalization is another crucial component of the fraud triangle. Rationalization is the self-justification for an illegal act by individuals who generally consider themselves, and are usually perceived by others, as honest and trustworthy. According to criminologist Donald Cressey, since the majority of individuals who commit occupation fraud are not career criminals or sociopaths, they feel a strong need to justify their actions (Hutson, 2010). The most convenient rationalization, of course, is, “The company has plenty. It won’t miss this.” This rationalization has been used to justify crimes from the pilfering of condiments by fast-food employees to large scale embezzlement. Another rationalization is, “I was only borrowing the money. I was going to pay it back when things improved.” This may even have been the truth when the first act was committed. This person has convinced himself that the current situation is temporary and that they have not actually stolen anything. During a period of economic downturn, the pressure to maintain lifestyle may make this rationalization acceptable to an otherwise ethical person.

The most destructive rationalization, however, is the “I deserve it” or “the company owes me” justification. This rationalization may derive from a gap between an employee’s self-perceived importance and their remuneration. During an economic downturn, as workforces are reduced, remaining employees are often asked to do more work without additional compensation, or even at reduced compensation, bonuses, and benefits. Employees who feel they are not being given what they deserve may help themselves to what they are convinced is simply adequate compensation. The eroding morale of employees is evidenced in Deloitte’s 2010 Ethics & Workplace Survey which found the economic downturn has diminished employees’ trust and loyalty to employers. The survey found that nearly half of employed Americans planning to seek employment when the job market improves cite a loss of trust in their employer because of how decisions were made as the reason for leaving (Deloitte, 2010). In their analysis of Accounting and Auditing Enforcement Releases (AAERs) issued by the SEC in 2008, they found that in 81% of the cases company officers were named (Deloitte, 2011).

While these two studies focused on financial statement fraud, the ACFE conducted a broader study which included data compiled from 1,843 cases of occupational fraud that occurred worldwide between January 2008 and December 2009. While their 2010 Report to the Nations on Occupations Fraud and Abuse found fraudsters at all levels of the organization, they discovered that these high-level perpetrators cause the greatest damage to their organizations. The ACFE study reported that 46.2% of the US fraud cases were perpetrated by employees, 36.7% by managers, and only 17.1% by owner/executives; however, the owner/executive perpetrated frauds proved nine times more costly than the employee frauds and three times more costly than the manager frauds. This level of fraud also took much longer to detect (ACFE, 2010a).

![Position of the Fraudster](image)

**Figure 3:** Position of Perpetrator in the US – 968 Cases (Source: ACFE Report to the Nations, 2010)

A summary of the ACFE results shows the following profile of a perpetrator:
Table 2: Profile of Perpetrator

<table>
<thead>
<tr>
<th>Highest Frequency</th>
<th>Most Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
</tr>
<tr>
<td>Position</td>
<td>Owner/Executive</td>
</tr>
<tr>
<td>Age</td>
<td>over 60</td>
</tr>
<tr>
<td>Tenure</td>
<td>more than 10 years</td>
</tr>
<tr>
<td>Education</td>
<td>Postgraduate degree</td>
</tr>
<tr>
<td>Department</td>
<td>Finance</td>
</tr>
<tr>
<td></td>
<td>Executive/Upper Management</td>
</tr>
</tbody>
</table>

Source: ACFE Report to the Nations, 2010

The downturn in the economy has, in many ways, stimulated fraud by providing strong motives, increasing opportunities, and compelling rationalizations; however, in some areas, fraud detection may also increase during a downturn. Is it possible that the frauds we are seeing now actually occurred during periods of prosperity, but were only discovered because of the downturn? Had it not been for the two recessions during the decade, would Enron and Bernie Madoff still be two of the largest frauds in economic history? Several dynamics support this contention. The first is obvious: Ponzi schemes collapse. Ponzi schemes pay out huge returns to investors based not on profits, but on the payments from subsequent investors who are lured in by the historical and projected returns. The perpetuation of these schemes requires ever increasing inflows. During periods of economic prosperity, this is generally not a problem; however, during an economic downturn, inflows slow, or investors attempt to withdraw their money to meet other financial needs, and the schemes collapse.

Another factor that leads to an increase in fraud detection during a downturn in the economy is whistle blowing. According to the 2010 ACFE Report to the Nation, more fraud is initially discovered by tips than any other means. In fact, tips account for more than 40% of all fraud discovered; more than management review, internal audit, and external audit combined.

Figure 4: Initial Detection of Occupational Frauds (Source: ACFE Report to the Nations, 2010)

While tips have consistently been a primary source of detection, there is evidence that whistle blowing increases during periods of economic downturn, as the financial incentive to the whistleblower may overcome a conditioned aversion to "snitching." According to U.S. Department of Justice statistics, suites filed pursuant to the False Claims Act (31 U.S.C. §§ 3729-3733) have
significantly increased during the most recent recession with recent developments suggesting that the trend may accelerate despite the alleged economic recovery. During 2010, the Securities and Exchange Commission finalized the whistleblower provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Under these rules, whistleblowers providing original information resulting in successful enforcement actions of one million dollars or more may receive between 10-30% of the money as a reward. The Dodd-Frank Act also provides significantly greater protection to employee whistleblowers than was previously provided under the Sarbanes-Oxley Act (Finn, n.d.).

Also, a case can be made that in light of so many prosperous years we now tend to be living beyond our means. In a period of economic downturn, conspicuous consumption becomes obvious. This may engender suspicion among both internal and external stakeholders. Increased awareness of financial fraud as a result of the numerous high profile cases of the last decade make this suspicion all the more plausible.

The National Business Ethic Survey results show that in 2003 46% of employees surveyed reported observing misconduct in the workplace that violated company ethical standards (Ethics Resource Center, 2003). In 2005, the percentage rose to 52%, with the 2007 percentage increasing to 56% (Ethics Resource Center, 2005 & 2007). Finally, in 2009, there was a decrease to 49%. With this information in mind only 22% said that the recession negatively impacted the ethical culture within their specific company. Other NBES statistics show 14% of the workforce in 2004 felt pressure to commit misconduct, a number which decreased to 9% in 2009.

The Ethics Resource Center (ERC) states, “Overall, 78 percent of those interviewed this year (2009) said they or a colleague had been affected by company efforts to weather the U.S. recession”. Yet surprisingly, most of ERC’s key measures improved:

- Misconduct at work is down. Fewer employees said they had witnessed misconduct on the job; the measure fell from 56 percent in 2007 to 49 percent in 2009
- Whistle-blowing is up. More employees said they had reported misconduct when they observed it; 63 percent in 2009, up from 58 percent in 2007
- Ethical cultures are stronger. ERC’s measures of the strength of ethical culture in the workplace increased from 53 percent in 2007 to 62 percent this year – a positive sign
- Pressure to cut corners is lower. And overall, perceived pressure to commit an ethics violation – to cut corners, or worse – declined from 10 percent two years ago to 8 percent. (2009, p. 1)

The ERC contends, “This pattern has occurred before. During another period of economic anxiety and dislocation – from 2000 to 2003 – NBES data showed that ethics measures similarly had improved. This happened despite the sudden end of the “dot com bubble” in Internet-based companies’ stock, the events of 9/11 and a string of corporate scandals, not the least of which was Enron. A possible explanation is that during hard times, when a company’s well-being or even existence may be on the line and regulators are watching, management talks more about the importance of high standards to see the organization through the crisis. It may also be that some are less inclined to commit misconduct when management is on high alert” (Ethics Resource Center, 2009). They conclude, “The positive results of this study are likely to be temporary. We are beginning to see an important connection between workplace ethics and the larger economic and business cycle: when times are tough, ethics improve. When business thrives and regulatory intervention remains at status quo, ethics erode. We can expect this pattern to continue.”

The ACFE Occupational Fraud statistics state that the biggest factor contributing to an increase in fraud is increased pressure (49.1%), increased opportunity (27.1%) and increased rationalization (23.7%). But when you compare this information to the National Business Ethic Survey the statistics show that during times of economic downturn these measures are improved. Pressure decreases, opportunities within organizations decrease due to an increase in control measures and whistle blowing and, with the increase in ethical culture, rationalization decreases.

An interesting note is that much of our time line suggests that the recession officially ended in 2009 and this report would suggest that with the ending of the recession the rise in fraudulent behavior began to increase. The ACFE Report on Occupational Fraud (2010b) states that from early 2008-2009, 37.1% of the survey respondents said there was a slight increase in the number of frauds, 28.8% responded that there were approximately the same number of frauds and 18.1% said there was a significant increase in frauds.

As far as dollar amounts 28.8% of the respondents said that the dollar losses of fraud remained the same, 27.2% said there was a slight increase and 21.7% said there was a significant increase the balance of the respondents, 5.9%, would state that there was a decrease in observed change in dollar losses during the year (ACFE, 2010b).
LIMITATIONS

Acknowledging once again that fraud by nature is a silent (concealed) crime and not easily detected makes it difficult to discover and even more difficult to quantify. It is conceded, therefore, that the findings related to fraud only include a fraction of the actual cases and may not be representative of the whole as these only represent the fraudsters who were caught.

We were also limited in that our study only included reporting the findings of others. There are many opportunities for future research in the areas of organizational behavior and corporate culture. Better understanding of the psyche of the fraudster may provide tools for better detection; understanding the motives and rationalizations of the fraudster may supply the inputs necessary for better prevention measures. From an entity standpoint, insights into not just the internal control environment, but the organizational culture, may provide clues as to what allows, or perhaps even encourages, the individual to engage in fraudulent activity.

CONCLUSION

After studying data compiled by the major stakeholders in the fraud arena, the conclusion to be drawn is while the current US economy may be in a state of instability, there is no correlation between it and the increasing losses due to fraud. As Adam Smith wrote, “there’s little doubt we’re in a boom time for scams” (2009, p. 1). Coupled with information retrieved from the ACFE (2010b), it appears fraud cases have grown due to increasing financial pressures being felt by employees. However, employees do not shoulder the burden alone. As organizations feel the pain of a slumping economy it is easy to tighten the budgetary belt by doing away with previously implemented internal controls. This digression lends itself to a reasonable conclusion that when controls are stronger and people are more aware, fraudulent behavior decreases but once controls are removed or the awareness is decreased the behavior begins to rise.

Coenen argues, “The incidence of fraud in bad economic times might not really be higher overall than during times of prosperity” (2011, p. 37). Is it that as the economy turns downward companies lose the ability to manage revenues and therefore begin to focus on cutting expenses? Could this focus on decreasing expenses create a greater need to monitor financial behavior ultimately leading to an increase in fraud detection? Could it be that we merely think that there is a relationship between a downturn in the economy and an increase in fraud because of the focus placed on the sensational, negative stories played out in the popular press? Or, could it be that fraud monitoring tools are more effective at detecting the crimes and the rate of frauds being perpetrated is not on the rise but rather the number being detected is? Or, is it the case that as organizations feel the pain of shrinking profits, the impetus to prosecute fraud is greater?

The authors believe the ultimate question is, “Does it matter?” As fraud cases increase, companies need to remember to be diligent in their monitoring at all times. Strong internal controls and a well educated workforce go a long way toward maintaining the integrity of company resources. Every organization needs fraud prevention policies and procedures but, to date, there has not been tremendous focus on implementation of controls that directly address these risks. The prevalence of fraud in the workplace is real. Whether we are operating in good economic times or bad, we cannot take our eye off the possibility it is going to happen in our organization.

REFERENCES


THE IMPROVEMENT PROJECT PRIORITY DETERMINATION IN LEAN SIX SIGMA
A GREY MODEL BASED ON ENTROPY POWER THEORY

Lihong Zhang and Jiaqing Yang
1Beijing Institute of Technology and 2Georgia College & State University, CHINA

ABSTRACT

Lean Six Sigma is a new approach to quality concerns in a production system based on the theories of both Lean Production and Six Sigma. Problem priority setting (i.e. project priority determination) is one of typical application of this new approach in practice. According to the theories of Grey System and Entropy Power, an objective measurement model is proposed and a decision index system is established based on the features of project (problem) priority determination in lean six sigma management. The paper describes the proposed model for project (problem) priority determination in lean six sigma management, and a numerical example is used to illustrate the proposed model.

Keywords: Lean Six Sigma; Priority Determination; Grey System; Entropy Power, Selection Model.

1. INTRODUCTION

The first book of Lean Six Sigma (LSS) was published in 2001 (George 2001), which bright the attention of both entrepreneurs in practice and researchers in academic world about the benefit from Lean Six Sigma. More specifically, this new LSS system is an effort to take the advantage of integrating the benefits from Lean Production – through improving the production efficiency with fast visualized control procedure, with the advantages of Six Sigma – through optimizing data analysis and processing by the related statistical techniques. Therefore, Lean Six Sigma has been viewed as a new management approach with strategic and tactical characteristics to improve the production stability and speed at the same time (Sharman, 2004). Strategically, the final objective of Lean Six Sigma is to change peoples’ behavioral pattern, combining this new management approach with financial responsibility and incentive mechanism, so as to guide all employees to work more aggressively and actively to pursue work perfection and excellence (in some extent, also called as a kind of “enterprise culture reform”). Normally, in terms of quality improvement for a typical industrial organization, there will be several (if not many) areas which need to be improved with a specific and focused improvement actions. How to identify and select those targeted areas for the potential improvement projects have been viewed as the starting and penetrating point for a successfully Lean Six Sigma program in practice.

Research effort on the project priority determination originated from 1930s and the earliest one was applied in the selection and evaluation on R&D projects. The traditional LP (Linear Programming) model was first formulated for the project selection (Asher, 1962) and then related study of R&D projects proposed by Baker (1964), which are all viewed as relatively traditional and classical methods in the project priority determination. Since most practical projects are very difficult (if not impossible) to be expressed and formulated with LP model, additional effort has been continued to explore more practical and applicable research methods in the project priority determination field. Two different approaches are further developed in this field (Xie, 2005): the first is based on the statistical analysis theory established by (Wald, 1945) and the second is based on the modern decision theory promoted by (Simon, 1960), and the two are complementary to each other. In fact, the research effort on the methodology of the project priority determination field has been continuously developed from the single objective to multi-objective and from the individual decision to the group decision.

Many early research works on the Multiple-Criteria Decision Making (MCDA) problem are available in the current literature (Koopmans 1951; Kuhn 1951; Tucker 1951; Roy 1968; Bellman & Zadeh 1970; Carlsson 1985; Bit, Biswal, & Alam 1992; Lu, Zhang & Ruan 2008). Multiple Criteria Decision Making problems can be further classified into two groups: Multiple Attribute Decision Making (MADM) and Multiple Objective Decision Making (MODA). Since 1970s, the MODA has been a popular research topic in both Operation Research and Management Science fields, and some famous works include: Bernard Roy (1975), Keeney (1975), Zionts (1974) and Johnson (2000). In the following years, a large variety of models have been proposed and applied in the research issues of project selection and evaluation. For example, Chen (1990) was first to propose the multi-objective fuzzy optimization theory, multi-objective fuzzy clustering, and fuzzy recognition theoretical model, and applied them in a series of specific projects related to water conservation and hydropower resource system design, building construction system design, and environmental engineering system development successfully. Henriksen and Traynor (1999) further categorize the models and methods for the project priority determination and evaluation as: mathematical programming and optimization method; economic model; decision analysis; and interactive method. While the discussions on
the potential advantages and disadvantages of these modes and methods and their related limitation in application have been continuing, many of them have been applied in the practical priority determination of Lean Six Sigma improved project.

From Six Sigma and Lean Six Sigma, the real objectives of improvement projects have been evolved and today the LSS objectives (Foster, 2010) include at least three aspects: (1) increasing values to shareholders, (2) improving values to customers, and (3) lowering the actual cost. As such, this paper proposes a grey decision model for the LSS project priority determination based upon entropy power and multi-objective decision theories.

2. DECISION INDEX SYSTEM ESTABLISHMENT

The primary purpose to develop the LSS system is to meet the continuing increased demand of customers and view any things (i.e., a product, process, procedure, policy, etc.) deviated from the best possible requirements as "defects". Specifically, the objectives of LSS are to ensure both the value increase to all related shareholders and all current and potential customers at the same time, while keeping the high speed of production flow and the assurance of product or service quality. As such, the index system for determining LSS improvement project priority will be established from the following three dimensions: (1) the value to shareholders, (2) the value to customers, and (3) all other related factors. The specific indexes are developed as follows:

2.1 Shareholder Value Index

The index for shareholder value represents those values which can bring profits for investors (George, 2001). So in this research, the following indexes are designed for this purpose on the basis of empirical survey:

(1) Increased Profits from Improved Product Quality: the increase in enterprises' overall profit from reduced defect rate after the selected improvement projects implemented.

(2) Project Importance: the relative importance between the chosen projects in terms of the enterprise's critical strategic objectives as well as their potential positive effects regarding the company's management. The related data can be obtained through well-designed questionnaire surveys and expert opinion summary, and the index can then be divided into several levels with different assigned values. For example, the optimal value can be set at 10 while the worst value is 0, and other values in between. As such, the more important of a project ranked will assigned a higher value.

(3) Strategic Potential Benefit: the potential increase of market share, competitiveness, and overall effectiveness for the enterprise from the selected project improvement. This will be measured by the similar approach as above, i.e., through a specifically designed questionnaire survey and measured by a 10 points scale.

(4) Development of LSS Cultural Environment: the impact of the selected improvement projects' success on company's positive culture of employees and increase in firm's potential effectiveness. This index will also be measured by the similar approach discussed above.

(5) Benefits from Potential Reduction in Waste: the potential economic benefits as a result of selected improvement projects from the possible improvement in more efficient management process and procedure. This index can be measured, for example, with the reduction in inventory level, or reduced redundant works, decrease in reworks and reassembly, and etc.

2.2 The Indexes of Customer Value

In this research, customer value refers to customers' comprehensive evaluation on products and service quality of that enterprise (George, 2001). This index will be measured by the following:

(1) Quality Improvement: measured by the expected reduction in defective rate after the proposed improvement project implementation.

(2) Service Time Improvement: measured by the expected improvement in average lead time reduction after the proposed improvement project implementation.

(3) Customer Satisfaction Improvement: measured by the expected improvement in customer satisfaction measurement after the proposed improvement project implementation. Especially on those key quality related areas concerned by customers, and will be obtained through selected market research and expert ranking procedure with a 10 points scale.

2.3 The indexes of All Related Factors

The all other related factors here refers to all other related concerns and measurements for the proposed improvement projects, including all related costs resulting from manpower, financial resources, and material resources needed in the
selected improvement project implementation and resource availability, leadtime, successful possibility, and employee supporting. They will be measured by the following:

1. The total related cost: the estimated total cost in implementing those selected improvement projects.
2. Resource Acquisition: the ability of acquiring various kinds of resources, including manpower, material resources, and financial resources needed, which will be obtained through selected market research and expert ranking procedure with a 10 points scale.
3. Lead time of the Project Implementation: the estimated total leadtime to complete all proposed selected projects.
4. Successful Possibility: the degree of the successfulness of those improvement projects.
5. Employee Support: the overall employees’ supporting attitude on the selected improvement project implementation.

3. GREY MODEL BASED ON THE ENTROPY POWER THEORY

Grey system theory was first developed and introduced in 2002 (Deng, 2002) – which is basically a theory to study and resolve the analysis, modeling, prediction, decision, and control of the grey system. Assuming incomplete information with the complex interactions among many related factors – their relationships are needed to be mapping into a logical set of results, such a process is usually dynamic and complicated, like in the LSS improvement project determination process. Therefore, in a certain degree, such an LSS improvement project priority determination process is quite a perfect application of the grey system. Entropy power method is an appropriate objective weighting method, which determines the weights in accordance with the relationships among all involved factors within the original data. As such, it is believed that the weights obtained from the Grey theory model for all objectives will be more representing the related practical situations.

3.1 Define the event, countermeasure, objective, and effect sample

Let a_i represents event i, b_j for countermeasure j against the event, and then s_{ij} = (a_i, b_j), represents the situation in which the j countermeasure is used against i event.

Definition: Assuming \( A = \{ a_1, a_2, a_3, a_4, a_5 \} \) is event set and \( B = \{ b_1, b_2, \cdots, b_m \} \) is countermeasure set, among which a represents different LSS subject, b represents the improvement project to be chosen. Therefore, the situation set produced by A and B is Descartes set (Deng, 2002) of A and B:

\[
S = A \times B = \{ s_{ij} = (a_i, b_j) \mid a_i \in A, b_j \in B \}
\]

Situation \( s_{ij} \) represents the LSS improvement project priority index of different enterprise entities.

For the entity \( a_i \), they will carry out LSS improvement project, the selected project group is \( \{ b_1, b_2, \cdots, b_m \} \), so the decision is to determine each project’s priority from a group available for choice. However, whether it is appropriate or not is measured by the objective.

Definition: Assuming \( K = \{ 1, 2, \cdots, k \} = \{ \text{Increasing Shareholder Value, Improving Customer Value, and Improving All Other Related Performance Criteria} \} \) as the objective set.

Definition: Let the effect sample of situation \( s_i \) under the objective \( k \) is \( u_{ij}^k \) and call \( U^k \) the effect sample matrix under the objective \( k \).

\[
U^k = \begin{bmatrix}
u_{11}^k & u_{12}^k & \cdots & u_{1m}^k \\
u_{21}^k & u_{22}^k & \cdots & u_{2m}^k \\
u_{31}^k & u_{32}^k & \cdots & u_{3m}^k \\
u_{41}^k & u_{42}^k & \cdots & u_{4m}^k \\
u_{51}^k & u_{52}^k & \cdots & u_{5m}^k
\end{bmatrix}
\]

In the above model, because the objective set consists of three parts, so there will be three effect data matrix \( U^1, U^2, U^3 \) for the three objectives.
So, the events, countermeasures, objectives, and effect data constitute four factors in the decision process.

3.2. Define the Objective Polarity

For the effect data under a given objective, its major measurement is called “the polarity of objective”. According to the grey system theory, the objective polarity is usually divided into maximum value polarity (positive polarity), minimum value polarity (negative polarity), and moderate value polarity (medium polarity).

Objective 1: Increasing shareholder value.
The objective of increasing the shareholder value is the maximum polarity objective. That is, the value of the effect data under such an objective is “the larger the better”.

Objective 2: Increasing customer value.
Similarly, the customer value objective is also the maximum polarity objective as the customer value is also “the larger the better”.

Objective 3: Improving all related factors so as to reduce overall cost.
As such, the value for such an objective is “the smaller the better”, that is, such objective is the minimum polarity objective.

3.3 Effect Measurement

Because of different objective requirements, i.e. different objective polarities, the effect measurements on different objectives are different. The effect data matrix from 2.1 is the actual effect value and it is necessary to conduct normalization on the data to get the consistent effect measuring matrix.

Since the both Objective 1 and Objective 2 are maximum value polarity (positive polarity), they can be measured by the effect measure of upper limit:

\[ r_{ij}^k = \frac{u_{ij}^k}{\max_i \max_j \{u_{ij}^k\}} \]

Since Objective 3 is minimum value polarity (negative polarity), so it can be measured by the effect measure of lower limit:

\[ r_{ij}^k = \frac{\min_i \min_j \{u_{ij}^k\}}{u_{ij}^k} \]

Such two effect measures \( r_{ij}^k \) (\( i=1,2,\cdots,5; j=1,2,\cdots,m; k=1,2,3 \)) meet the following conditions:

I. \( r_{ij}^k \) dimensionless;
II. \( r_{ij}^k \in [0,1]; \)
III. The more ideal of the effect, the bigger of \( r_{ij}^k \).

Conduct effect measuring change on three effect sample matrixes \( U^1, U^2, U^3 \) to get the consistent effect measuring matrix \( R^1, R^2, R^3 \).

\[ U^1 \rightarrow R^1 \quad \text{(change on the effect measure of upper limit)} \]
\[ U^2 \rightarrow R^2 \quad \text{(change on the effect measure of upper limit)} \]
\[ U^3 \rightarrow R^3 \quad \text{(change on the effect measure of lower limit)} \]

\[ R^k = \begin{bmatrix}
  r_{11}^k & r_{12}^k & \cdots & r_{1m}^k \\
  r_{21}^k & r_{22}^k & \cdots & r_{2m}^k \\
  r_{31}^k & r_{32}^k & \cdots & r_{3m}^k \\
  r_{41}^k & r_{42}^k & \cdots & r_{4m}^k \\
  r_{51}^k & r_{52}^k & \cdots & r_{5m}^k
\end{bmatrix} \]
3.4 Obtain the Objective Weights by Entropy Power Method

The concept of entropy originated from thermodynamics and then was introduced it to the information theory, initiating a new era of the entropy in engineering technology and economic and social application (Deng, 2002). Entropy is an uncertain measurement of the system state (Deng, 2002). When the system is in \( n \) different states and the probability of each state is \( p_i \), the entropy of this system is:

\[
E = -\sum_{i=1}^{n} p_i \ln p_i
\]

In above, \( p_i \): \( 0 \leq p_i \leq 1 \); \( \sum_{i=1}^{n} p_i = 1 \)

In Section 2.3, we have described the effect measuring change on the effect data matrix under different objectives. Therefore, here, we just directly calculate the proportion of the scheme under the objective \( K \):

\[
f_j^k = \frac{\sum_{i=1}^{m} r_{ij}^k}{\sum_{i=1}^{m} \sum_{j=1}^{m} r_{ij}^k}
\]

And, meets the need of

\[
0 \leq f_j^k \leq 1, \quad \sum_{j=1}^{m} f_j^k = 1
\]

According to the definition of entropy, the entropy \( E \) evaluating \( m \) schemes for choosing with the objective \( K \) is:

\[
E = -\sum_{j=1}^{m} f_j^k \ln f_j^k
\]

From the extreme of entropy, we know that when \( f_j^k \) \( (j=1,2,\ldots,m) \) is closer to the equality, the conditional entropy will be bigger, and the uncertainty of the objective \( K \) on the evaluation and decision of the schemes for selection will be bigger. When \( f_j^k \) \( (j=1,2,\ldots,m) \) is equality, the conditional entropy reaches its maximum and equals \( E_{max} = \ln m \). Treat the above formula by normalization with \( E_{max} \) and we will get the entropy characterizing the importance of objective \( K \):

\[
e(k) = -\frac{1}{\ln m} \sum_{j=1}^{m} f_j^k \ln f_j^k
\]

For the \( K_0 \) objective, the bigger the differences on the objective evaluation value, the greater function on the scheme evaluation with a smaller entropy.

Conversely, the smaller of differences and the less function on the scheme evaluation, the entropy will be bigger. Therefore, in order to evaluate comprehensively, in the model, the weight \( \theta_k \) of objective \( k \):

\[
\theta_k = \frac{1}{3-E_{\varepsilon}}[1-e(k)]
\]

In above, \( E_{\varepsilon} = \sum_{k=1}^{3} e(k) \), and \( \theta_k \) meet: \( 0 \leq \theta_k \leq 1 \), \( \sum_{k=1}^{3} \theta_k = 1 \)

The objective weight is decided by the inherent information of the schemes. Therefore, the same evaluation norm may have different weights \( wk \) on different schemes. For a multi-objective decision, it should not ignore the experienced judgment of the decision maker. Therefore, we introduce another weight \( w_k \) to represent the subjective judgment of the decision maker which is determined by the method of expert consultation (i.e. called Delphi method in the literature).
The determined procedures of the weight of the subjective judgment of the decision maker are shown as follows:

Aiming at the three objectives of shareholder value, customer value, and other performance criteria, the experts (decision makers) will have the room of flexibility to determine the weight. Assuming there are m experts, each expert determines a group of estimated values of the index weight:

\[ w_{1i}, w_{2i}, w_{3i} \quad (1 \leq i \leq m) \]

According to the estimated weight value given by m experts, we may get a group of average estimated value after average procedure:

\[ w_k = \frac{1}{m} \sum_{i=1}^{m} w_{ik}, \quad (1 \leq k \leq 3) \]

Calculate the deviation between the estimated value and the average estimated value

\[ \Delta_{ik} = |w_{ik} - w_k|, \quad (1 \leq i \leq m, \ 1 \leq k \leq 3) \]

Invite i expert to reevaluate wik on the K objective weight estimated value with big deviation through several times of repetition until such deviation meets a certain requirement. In this way, we may get the average estimated correction \( w_k \) of the three objective weights like shareholder value, customer value, and other performance criteria.

Then compound the weight \( \theta_k \) determined by entropy power method and the subjective weight \( w_k \) of the decision maker into a practical weight \( p_k \) in accordance with the following formula:

\[ p_k = \frac{\theta_k w_k}{\sum_{k=1}^{3} \theta_k w_k} \]

\[ p_k \text{ meet: } 0 \leq p_k \leq 1, \quad \sum_{k=1}^{3} p_k = 1 \]

### 3.5 Establish the Comprehensive Effect Measurement

Make the comprehensive effect measurement of the situation combining the decision weight of each objective.

**Definition:** assuming \( p_k (k=1,2,3) \) as the decision weight of the objective \( k \sum_{k=1}^{3} p_k \), then we call \( \sum_{k=1}^{3} p_k r_{ij}^k \) as the comprehensive effect measure of the situation \( s_i \) and record it as \( r_{ij} = \sum_{k=1}^{3} p_k r_{ij}^k \).

In this model, the comprehensive effect measuring matrix of the situation \( s_i \) \( R^\Sigma = p_1 R_1^1 + p_2 R_2^2 + p_3 R_3^3 \)

\[
R^\Sigma = \begin{bmatrix}
    r_{11}^\Sigma & r_{12}^\Sigma & \cdots & r_{1m}^\Sigma \\
    r_{21}^\Sigma & r_{22}^\Sigma & \cdots & r_{2m}^\Sigma \\
    \vdots & \vdots & \ddots & \vdots \\
    r_{31}^\Sigma & r_{32}^\Sigma & \cdots & r_{3m}^\Sigma \\
\end{bmatrix}
\]

Here, the row vector \( r_i = \begin{bmatrix} r_{i1}^\Sigma & r_{i2}^\Sigma & \cdots & r_{im}^\Sigma \end{bmatrix} \) is the comprehensive effect measuring space of the event \( a_i \) (different enterprise entities).
3.6 Satisfactory Solutions of the Priority of Improvement Projects

The final solution step of the proposed model is to determine the priority of the improvement projects, in this model, called the “row decision”, i.e. for ith kinds of enterprise entities, the priority of the improvement projects is

$$r_{ij}^* = \max_j r_{ij}^* = \max_j \left\{ \frac{\sum_{i} b_{ij}}{\sum_{j} b_{ij}} \right\}$$

The relevant situation $s_{ij}^*$ is the optimal solution of the priority of the improved project of the event a,

$$r_{ij}^* \Rightarrow s_{ij}^* = (a_i, b_j^*)$$

That is to say, for the entity $i$, $b_j^*$ will be its initially implemented project.

4. NUMERICAL EXAMPLE ILLUSTRATION

The example described in this section is for a specific manufacturing company. For this company, the investment decision analysis on the four items of LSS improvement projects in the primary list will focus on the following: reduce the volume of work in process $X_1$, speed up the cycle of R&D $X_2$, shorten the marketing procedure time $X_3$, and improve soldering tin quality $X_4$.

4.1 Shareholder value (SV) evaluation about the four improved projects

The estimated decision index figure of shareholder value about the four improved projects is shown in Table 1.

<table>
<thead>
<tr>
<th>Improved Project</th>
<th>Project balances</th>
<th>Project importance</th>
<th>Strategic profit</th>
<th>LSS cultural construction</th>
<th>Additional amount of the economic benefit due to reduced time</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_1$</td>
<td>150</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>90</td>
</tr>
<tr>
<td>$X_2$</td>
<td>200</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>60</td>
</tr>
<tr>
<td>$X_3$</td>
<td>300</td>
<td>9</td>
<td>6</td>
<td>8</td>
<td>70</td>
</tr>
<tr>
<td>$X_4$</td>
<td>220</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>80</td>
</tr>
</tbody>
</table>

So, we can get the evaluated matrix for shareholders:

$$X = (x_{ij})_{4 \times 5} = \begin{pmatrix} 150 & 6 & 7 & 7 & 90 \\ 200 & 7 & 6 & 5 & 60 \\ 300 & 9 & 6 & 8 & 70 \\ 220 & 8 & 8 & 7 & 80 \end{pmatrix}$$

Conduct standardized treatment on the evaluated matrix, and here conduct standardized treatment with the method of linear scale transformation.

In the evaluated matrix $X = (x_{ij})_{4 \times 5}$, all of the indexes are positive indexes. For the positive indexes, we take $x_j^* = \max_{c=1,4} x_{ij}$, then $y_{ij} = \frac{x_{ij}}{x_j^*}$. Conduct standardized treatment on the evaluated matrix $X=(x_i)_{4 \times 5}$ to get the standardized matrix

$$Y = (y_{ij})_{4 \times 5} = \begin{pmatrix} 0.5 & 0.6667 & 0.875 & 0.875 & 1 \\ 0.667 & 0.7778 & 0.75 & 0.625 & 0.6667 \\ 1 & 1 & 0.75 & 1 & 0.7778 \\ 0.7333 & 0.8889 & 1 & 0.875 & 0.8889 \end{pmatrix}$$
Here we think each index is equally important and we can get the implemented priority of the four projects in the shareholder value:

$$SV = \begin{pmatrix} 0.7833 & 0.6972 & 0.9056 & 0.8772 \end{pmatrix}$$

### 4.2. Customer Value (CS) Evaluation

The acquired decision index numbers of customer value through the market survey are shown in Table 2.

<table>
<thead>
<tr>
<th>Improved project</th>
<th>Service time</th>
<th>Quality level</th>
<th>Customer voice</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_1$</td>
<td>40%</td>
<td>50%</td>
<td>3</td>
</tr>
<tr>
<td>$X_2$</td>
<td>50%</td>
<td>70%</td>
<td>4</td>
</tr>
<tr>
<td>$X_3$</td>
<td>60%</td>
<td>90%</td>
<td>5</td>
</tr>
<tr>
<td>$X_4$</td>
<td>20%</td>
<td>60%</td>
<td>3</td>
</tr>
</tbody>
</table>

From this, we can get the evaluation matrix of customer value:

$$X = (x_{ij})_{4 \times 3} = \begin{pmatrix} 30\% & 50\% & 3 \\ 50\% & 70\% & 5 \\ 60\% & 90\% & 4 \\ 20\% & 60\% & 3 \end{pmatrix}$$

By the same way as above, standardized treatment on the evaluation matrix and the standardized matrix $Y=(y_{ij})_{4 \times 3}$:

$$X = (x_{ij})_{4 \times 3} = \begin{pmatrix} 0.5 & 0.5556 & 0.6 \\ 0.8333 & 0.7778 & 1 \\ 1 & 1 & 0.8 \\ 0.3333 & 0.6667 & 0.6 \end{pmatrix}$$

The priority order of the 4 improvement projects in customer value dimension:

$$CS = \begin{pmatrix} 0.5519 & 0.5222 & 0.9333 & 0.5333 \end{pmatrix}$$

### 4.3 Other Performance Criteria Evaluation

The acquired decision index value of the 4 improvement projects in the all other related performance criteria dimension is shown in Table 3.

<table>
<thead>
<tr>
<th>Improved project</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
</tr>
</thead>
<tbody>
<tr>
<td>The total related cost</td>
<td>160</td>
<td>100</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>Resource acquisition</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Lead time of the project implementation</td>
<td>80</td>
<td>50</td>
<td>60</td>
<td>70</td>
</tr>
<tr>
<td>Successful possibility</td>
<td>90%</td>
<td>70%</td>
<td>80%</td>
<td>50%</td>
</tr>
<tr>
<td>Employee support</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

In measuring the Objective 3, all other related performance criteria, we can use efficacy coefficient method to evaluate factors involved in the model. The efficiency coefficient method is to transform the dissimilarity measure units into corresponding dimension efficacy coefficient without unit, and then conduct comprehensive evaluation.
Calculate the efficacy coefficient of each index according to the original data of multiple indexes of related factors in which there are positive indexes and reverse indexes. Therefore, the calculation of the efficacy coefficient will be divided into two situations: for the positive indexes, the efficacy coefficient is

\[
d_j = \begin{cases} 
    \frac{x_j^p - x_j^r}{x_j^p - x_j^p}, & x_j^p > x_j^r \\
    0, & x_j^p \leq x_j^r 
\end{cases}
\]

For the negative indexes, the efficacy coefficient is

\[
d_j = \begin{cases} 
    \frac{x_j^r - x_j^p}{x_j^r - x_j^r}, & x_j^r > x_j^p \\
    0, & x_j^r \leq x_j^p 
\end{cases}
\]

Among which, \(x_j^p\) is the satisfactory value of the index and \(x_j^r\) is the unsatisfactory value. The value range of the efficacy coefficient is \(0 \leq d_j \leq 1\). Here, we adopt the method of weighted arithmetic mean to calculate the total efficacy coefficient, i.e. the total efficacy coefficient is as the follows:

\[
d = \sum_{j=1}^{n} w_j d_j
\]

Among which, \(w_j\) is the weight of each index.

Conduct comprehensive evaluation on the input value of the 4 projects. For the positive index, we take its maximum value as the satisfactory value and its minimum value as the unsatisfactory value; for the reverse index, we take its minimum value as the satisfactory value and its maximum value as the unsatisfactory value. Here, we think each index is equally important. The evaluated result is shown in Table 4.

<table>
<thead>
<tr>
<th>Improved project</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
</tr>
</thead>
<tbody>
<tr>
<td>The total related Cost</td>
<td>0</td>
<td>1</td>
<td>0.6667</td>
<td>0.1667</td>
</tr>
<tr>
<td>Resource acquisition</td>
<td>1</td>
<td>0</td>
<td>0.6667</td>
<td>0.3333</td>
</tr>
<tr>
<td>Lead time of the project implementation</td>
<td>0</td>
<td>1</td>
<td>0.6667</td>
<td>0.3333</td>
</tr>
<tr>
<td>Successful possibility</td>
<td>1</td>
<td>0.5</td>
<td>0.75</td>
<td>0</td>
</tr>
<tr>
<td>employee support</td>
<td>0.6667</td>
<td>0</td>
<td>0.3333</td>
<td>1</td>
</tr>
<tr>
<td>Total efficacy coefficient</td>
<td>0.5333</td>
<td>0.5</td>
<td>0.6167</td>
<td>0.3667</td>
</tr>
</tbody>
</table>

The comprehensive evaluated result by the efficacy coefficient method indicates that the total efficacy coefficients of the related performance criteria of the 4 projects (reduce the volume of work in process \(X_1\), speed up the cycle of R&D \(X_2\), shorten the marketing procedure time \(X_3\) and improve soldering tin quality \(X_4\)) are respectively:

\[
D = (0.5333, 0.5, 0.6167, 0.3667)
\]

4.4 Overall Evaluation

First, confirm the event, countermeasure, objective, and effect sample data. In this case, the event is \(A=\{\text{some manufacturing company}\}\), \(B=\{\text{reduce the volume of work in process} X_1, \text{speed up the cycle of R&D} X_2, \text{shorten the marketing procedure time} X_3 \text{and improve soldering tin quality} X_4\}\) is the countermeasure set, and then the situation set produced by \(A\) and \(B\) is the Descartes set of \(A\) and \(B\):

\[
S = A \times B = \{(a_i, b_i) | a_i \in A, b_i \in B\}
\]
The situation $s_i$ means the priority of the 4 projects selected by the management subject (some manufacturing company) when it introduces lean Six Sigma to its company, then there will be four situations, i.e. $s_1$, $s_2$, $s_3$, $s_4$.

The three objectives are: shareholder value, customer value and all related factors so as to reduce overall cost. On the above analysis, we can get the effect sample matrix of each situation.

Objective I: the shareholder value

$SV = (0.7833 \ 0.6972 \ 0.9056 \ 0.8772)$

Objective II: customer value

$CS = (0.5519 \ 0.5222 \ 0.9333 \ 0.5333)$

Objective III: related factors so as to reduce overall cost

$D = (0.5333 \ 0.5 \ 0.6167 \ 0.3667)$

The consistent effect matrix $R$ on the three objectives is:

$$R = \begin{pmatrix} 0.7833 & 0.6972 & 0.9056 & 0.8772 \\ 0.5519 & 0.5222 & 0.9333 & 0.5333 \\ 0.5333 & 0.5 & 0.6667 & 0.3667 \end{pmatrix}$$

So we can get the weight of each objective by the method of entropy power:

**Table 5: Result of Comprehensive Evaluation**

<table>
<thead>
<tr>
<th>LSS Project</th>
<th>Objective I: shareholder value</th>
<th>Objective II: customer satisfaction</th>
<th>Objective III: related factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>0.7833</td>
<td>0.5519</td>
<td>0.5333</td>
</tr>
<tr>
<td>X2</td>
<td>0.6972</td>
<td>0.5222</td>
<td>0.5</td>
</tr>
<tr>
<td>X3</td>
<td>0.9056</td>
<td>0.9333</td>
<td>0.6167</td>
</tr>
<tr>
<td>X4</td>
<td>0.8772</td>
<td>0.5333</td>
<td>0.3667</td>
</tr>
<tr>
<td>$\Sigma$</td>
<td>3.2633</td>
<td>2.5407</td>
<td>2.0167</td>
</tr>
</tbody>
</table>

For Objective 1:

$$e(1) = \frac{1}{\ln 4} \left[ \frac{0.7833}{3.2633} \ln \frac{0.7833}{3.2633} + \frac{0.6972}{3.2633} \ln \frac{0.6972}{3.2633} + \frac{0.9056}{3.2633} \ln \frac{0.9056}{3.2633} + \frac{0.8772}{3.2633} \ln \frac{0.8772}{3.2633} \right]$$

$$= 0.9962$$

For Objective 2:

$$e(2) = \frac{1}{\ln 4} \left[ \frac{0.5519}{2.5407} \ln \frac{0.5519}{2.5407} + \frac{0.5222}{2.5407} \ln \frac{0.5222}{2.5407} + \frac{0.9333}{2.5407} \ln \frac{0.9333}{2.5407} + \frac{0.5333}{2.5407} \ln \frac{0.5333}{2.5407} \right]$$

$$= 0.9755$$

For Objective 3:

$$e(3) = \frac{1}{\ln 4} \left[ \frac{0.5333}{2.0167} \ln \frac{0.5333}{2.0167} + \frac{0.5}{2.0167} \ln \frac{0.5}{2.0167} + \frac{0.6167}{2.0167} \ln \frac{0.6167}{2.0167} + \frac{0.3667}{2.0167} \ln \frac{0.3667}{2.0167} \right]$$

$$= 0.9880$$

$$E_e = \sum_{k=1}^{3} e(k) = 0.9962 + 0.9775 + 0.9880 = 2.9597$$

So we can get the relative importance of the objective $K$, i.e.: entropy power:

$$\theta_i = \frac{1}{3 - E_e} [1 - e(1)] = \frac{1}{3 - 2.9597} (1 - 0.9962) = 0.0943$$
The Improvement Project Priority Determination in Lean Six Sigma a Grey Model Based on Entropy Power Theory

\[ \theta_1 = \frac{1}{3 - E_v} [1 - e(2)] = \frac{1}{3 - 2.9597} (1 - 0.9755) = 0.6079 \]

\[ \theta_2 = \frac{1}{3 - E_v} [1 - e(3)] = \frac{1}{3 - 2.9597} (1 - 0.9880) = 0.2978 \]

Without the consideration of the weight of subjective judgment, the comprehensive effect measuring matrix of the situation \( s_1 \) is:

\[
R^\Sigma = \theta_1 R = (0.0943 \quad 0.6079 \quad 0.2978) \begin{pmatrix} 0.7833 & 0.6972 & 0.9056 & 0.8772 \\ 0.5519 & 0.5222 & 0.9333 & 0.5333 \\ 0.5333 & 0.5 & 0.6167 & 0.3667 \end{pmatrix} = \begin{pmatrix} 0.5682 & 0.5321 & 0.6528 & 0.5161 \end{pmatrix}
\]

It can be seen that the situation \( s_3 \) is the optimal situation without the consideration of the weight of subjective judgment. That is, for the company, the priority improved project should be the third project, i.e. shorten the marketing procedure time.

Next we discuss the optimal situation selection after the consideration of the weight on subjective judgment of the decision maker. As a matter of fact, for the manufacturing company, the lean Six Sigma management is a kind of system engineering. Therefore, the initially chosen project is to gain short-term effect as soon as possible to encourage the employee members to further popularize the lean Six Sigma management comprehensively. Consequently, we will take customer value and shareholder value more seriously in the project determination. The weights of the subjective judgment by the method of expert consultation are \( w_1=0.3, w_2=0.5, \) and \( w_3=0.2. \) So the practical weights of the three objectives are respectively:

\[
\begin{align*}
p_1 &= \frac{\theta_1 w_1}{\sum_{k=1}^3 \theta_k w_k} = \frac{0.0943 \times 0.3}{0.0943 \times 0.3 + 0.6079 \times 0.5 + 0.2978 \times 0.2} = 0.0722 \\
p_2 &= \frac{\theta_2 w_2}{\sum_{k=1}^3 \theta_k w_k} = \frac{0.6079 \times 0.5}{0.0943 \times 0.3 + 0.6079 \times 0.5 + 0.2978 \times 0.2} = 0.7758 \\
p_3 &= \frac{\theta_3 w_3}{\sum_{k=1}^3 \theta_k w_k} = \frac{0.2978 \times 0.2}{0.0943 \times 0.3 + 0.6079 \times 0.5 + 0.2978 \times 0.2} = 0.1520
\end{align*}
\]

After the consideration of the weight of subjective judgment, the comprehensive effect measuring matrix \( (R^\Sigma) \) of the situation \( s_1 \) is:

\[
R^\Sigma = \theta_1 R = (0.0722 \quad 0.7758 \quad 0.1520) \begin{pmatrix} 0.7833 & 0.6972 & 0.9056 & 0.8772 \\ 0.5519 & 0.5222 & 0.9333 & 0.5333 \\ 0.5333 & 0.5 & 0.6167 & 0.3667 \end{pmatrix} = \begin{pmatrix} 0.6223 & 0.5314 & 0.8832 & 0.5328 \end{pmatrix}
\]

It can be seen that the situation \( s_3 \) is still the optimal situation under the consideration of the weight of subjective judgment, the second better is \( s_1. \) That is to say, for the company to push LSS management, The priority sequence of 4 improved projects is as the follows: shorten the marketing procedure time \( X_5 \), reduce the volume of work in process \( X_1 \), improve soldering tin quality \( X_4 \), speed up the cycle of R&D \( X_2. \)

5. CONCLUSION

This paper presents a Grey System model and proposes a method of decision analysis aiming at the issue of LSS improvement project determination. In this method, subjective weights and objective weights are combined, avoiding the
subjective randomness and making the weight of the project determination accord with the practical situation. Such a method, with the characteristics of the simple and practicality, makes an overall consideration on various factors and provides an effective analyzing tool on the priority of the improvement project determination for the strategic consideration of LSS management.

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CRITICAL FACTORS TO FACILITATE COOPERATIVE LEARNING IN IT DEVELOPMENT TEAMS

Rajesh Aggarwal¹, Jong-Sung Lee¹ and Rahul Paul²
¹Middle Tennessee State University, USA and ²University of Memphis, USA

ABSTRACT
To survive in today’s highly competitive environment, organizations have made improvements in efficiency and work performance in all functional departments. High productivity is a must in Information Technology (IT) departments since this department significantly influences the entire organization. Cooperative learning behavior is known to positively influence the work performance in IT development teams. This paper determines the critical factors that facilitate cooperative learning behavior among team members. These critical factors include organizational climate, team cohesion, personality traits, demographic diversity, autonomy, leadership behavior, structural diversity and organization commitment.

Keywords: Cooperative Learning, Leadership Behavior, Organizational Climate, Personality Traits, and Team Cohesion.

INTRODUCTION
Recent years have seen the growth of competition in almost all industries. This increased competition is the result of globalization which has been brought about by the availability of internet and other computerized technologies throughout the world. To survive in this highly competitive environment, organizations have to achieve greater efficiency and better quality. Self-managing work teams can be helpful in improving productivity, quality, and morale while reducing costs at every level of the value chain. Previous empirical research has shown that self-managing teams lead not only to productivity improvement, and cost savings, but also to the greater satisfaction of different stakeholders including employees (Janz, 1999).

Information systems (IS) departments, similar to any other functional departments, in business organizations are under pressure to be more productive and efficient. IS departments have to develop and maintain very high quality information systems for the organization with minimum resources. To achieve the goals of the IS department, a team approach is needed to do most of the projects in IS as they are complex and cannot be completed by any one individual. Cooperation among team members is the most critical factor in a team’s success to achieve its goals. Therefore, cooperative learning among team members is a critical success factor in a team’s achievements.

Despite the importance of cooperative learning for successful implementation of self-managed work teams, there has been little research on antecedent factors that encourage this behavior among team members. Previous research has established the relationship between self-managing teams and their higher work performance (Janz, 1999). Some researchers are of the opinion that IS organizations have not been very successful in achieving the true potential of self-managing work teams. This study examines the factors that encourage cooperative learning behavior among IS development teams. The results of this study will create a better understanding of the mechanisms underlying the workings of self-managed teams. A clearer understanding of the antecedent factors governing the cooperation among the members of self-managed teams will help in more effective and successful implementation of these teams and hence in the realization of effective information systems at lower costs.

SURVEY OF LITERATURE
A self-managing team can be defined as a group of independent individuals that can self-regulate their behavior to complete a project (Cohen et. al., 1996). The design of these work teams includes a clearly defined development project, team members possessing a variety of skills relevant to the project, discretion over decisions such as schedule, assignments of members and methodology.

Self-managing or autonomous or composite work teams are a direct outcome of the socio-technical systems theory. Theories that have been used to explain self-managed team effectiveness include a). the work design theory which focuses on task design, b). Self-Leadership theory which focuses on supervisory behaviors, and c). participative management theories which focus on organizational context (Cohen et. al., 1996). Researchers and practitioners have proposed several different models for general group effectiveness. These models include several predictors such as work design, group characteristics, and...
group processes. These models form the basis for determining the effectiveness of self-managed teams. For any individual, gaining knowledge and learning new techniques, leads to more effectiveness in task achievement. Cooperative learning among group members is a form of organizational learning that focuses on learning among team members and applying this learning to improve work outcomes. Therefore, cooperative learning influences the performance, effectiveness, and satisfaction of team members of IS development teams.

**Cooperative Learning Theory**

Cooperation, coordination and collective approaches are desirable in a team. Cooperative learning takes place when team members work together to maximize their own knowledge and that of their teammates. Several studies indicate that cooperative learning among team members leads to higher work performance and worker satisfaction. Cooperative learning takes place when three essential conditions are met: positive interdependence, promotive interaction, and group processes.

Positive interdependence exists when members of a group are linked in such a manner that each member feels that one cannot be successful unless all other members of the group are successful. One way to achieve positive interdependence is by having a shared group goal, a goal which each member accepts and identifies with. If positive interdependence is structured correctly then group members feel individually accountable to the group as well as for the group’s output. Face-to-face promotive interaction is the degree to which members of the group identify each member's strengths and weaknesses and seek to assist others in developing the skills necessary for the group to achieve its goals. Adequate social skills are a necessary prerequisite for effective promotive interaction. Group process refers to the tools and processes needed for continuous improvement of groups’ achievements by periodically assessing: (a) tasks it has done effectively; (b) tasks it has done ineffectively; and (c) measures to address the identified weaknesses.

This research on cooperative learning is done within the IS development context. IS function is unique in several ways. For example, Janz(1999), outlines some of the main attributes of IS function:

1. The complexity and size of IS work requires the use of groups or teams. From the very inception, the IS work has been team based.
2. The IS development process consists of the translation of business requirements of the users into IS language.
3. IS development process provides a whole task to be accomplished as a project. This project orientation promotes self-managed work.
4. In many organizations the administrators may not be experts in the technologies being used by their team members to complete the IS development projects. Therefore, IS function is best suited for self-managed teams as a certain degree of autonomy is a must for the IS development teams.
5. The implementation of any management technique, including self-managed teams, is context specific. Therefore, the research in cooperative learning needs to be done within the specific context of IS development teams.

**Determinants of Cooperative Learning**

Cooperative learning has its basis in organizational climate, personality traits, demographics, structural diversity, organizational commitment, leadership behavior, autonomy, and team cohesion (Figure 1).

**Organizational Climate**

Climate of the organizational has the most significant effect on teams’ performance and team member satisfaction. There are many factors that constitute the organizational climate but in this study only those factors are selected that are known to have empirical relationships with work performance and/or knowledge sharing. These organizational factors include: risk, reward, warmth, support and the degree of formalization. Risk measures the attitude of the organization towards chances of failure. An organization with higher propensity to take risk is more willing to grant greater autonomy to development teams. Increased autonomy for teams encourages knowledge sharing and cooperative learning within the team. Reward is a measure of the degree to which the organization recognizes and rewards performance of employees. A reward system that is based upon team performance rather than individual performance generally fosters cooperation and coordination among team members (Bartol & Srivastava, 2002). Support is a measure of the facilities that are provided to the employees and team members by the organization to accomplish organizational goals. Higher levels of organizational support for team based knowledge sharing initiatives, like wikis or other communication tools, encourage and facilitate the process of knowledge sharing among team members.
Warmth measures the friendliness of the work environment in the organization. A friendlier environment creates opportunities for both formal and informal exchange of information. This results in higher levels of knowledge sharing interaction. Formalization is the degree of structure in the organization, that is, organizational activities are in writing and well documented procedures, policies, job descriptions and regulations exist. Earlier studies have found that a low degree of formalization permits openness and variation, which encourages new ideas, experimentation, knowledge generation and dissemination. Some researchers believe that the lack of formal structure in an organization enables members to communicate and interact with one another to facilitate cooperative learning.

**Personality Traits**

The influence of individual personality on group process and task outcomes has been well documented in many previous studies (DeBiasio, 1986). The five factor model discussed by Barrick and Mount in 1991 provides a comprehensive framework for examining an individual’s personality traits and their effect on a team’s performance and group processes. The five factors are extraversion, emotional stability, agreeableness, conscientiousness, and openness to experience. Many studies have observed the effect of conscientiousness, emotional stability and agreeableness on cooperativeness among team members.

Barrick et al, 1998 points out that a higher level of conscientiousness translates into more concern for the success of the team. The relationship of conscientiousness and team processes has been found to generalize across different types of tasks (Barrick and Mount, 1991). Therefore, a higher level of conscientiousness should be developed in teams engaged in the development of systems in the IS function. Other personality factors such as emotional stability and agreeableness generally result in positive social interactions leading to greater cooperation among team members. Agreeableness personality trait has
been defined as the tendency of a person to be helpful, warm, trusting and tolerant (Barrick et al, 1998). In a group, the more agreeable each member is, the greater is the likelihood of them working together as a team. Team members having high levels of agreeableness would have decreased levels of conflict and improved cooperation among them. Emotional stability (calm, poised and secure) leads to a more relaxed work environment and promotes cooperative learning behavior. In short, higher is the level of agreeableness, emotional stability and conscientiousness higher will be the level of cooperation and cooperative learning among the team members.

The personality trait of openness to experience goes hand in hand with personality traits such as imaginativeness, sensitivity, intellectual, and curiosity. These traits tend to support and encourage cooperative learning among team members. Extraverts are defined as sociable, enthusiastic, energetic, and optimistic people. Extravert people have the desire to work with others and increase cooperation among their fellow team members. Barry and Stewart (1997) found that the relationship between the number of extravert members and group effectiveness is non-linear. Too many extraverted members would create a team full of leaders and there would be no followers to fill complimentary roles. A curvilinear relationship exists between numbers of extraverted members and group effectiveness. In other words, the higher the variance in the extraversion scores of the team members the higher the level of cooperation.

Demographic Diversity

There have been several studies that examine the effect of demographic diversity on group performance. Some studies have shown that diversity leads to favorable performance, while some other studies have shown that diversity leads to unfavorable performance (Ojha 2005), and some studies link diversity to both favorable and unfavorable performance (Watson et al. 1993). For example, Ojha (2005) examines the effect of team demographics on knowledge sharing behavior. This study claims that the relationship of an individual's demographic traits is more important in a team environment than those traits are in isolation. For example, the level of qualification of team members may influence their knowledge sharing behavior but the proportion of people of similar educational profile is more likely to influence the knowledge sharing behavior of the individuals. According to this study demographic diversity has a negative effect on cooperative learning.

Pelled (1996) proposes that highly visible demographic variables have a negative effect on group performance. Similarly, diversity that is not related to a person's job has a negative effect on group performance. The same framework can explain the effect of demographic variables on group cooperative learning behavior. In other words, highly visible demographic variables that are not related to job performance are most likely to negatively affect cooperative learning behavior because they introduce affective conflict. Affective conflict is characterized by interpersonal clashes, anger, distrust, fear, frustrations and other forms of negative effects (Pelled, 1996). On the other hand, variables that are job related and have low visibility promote substantive conflict. Substantive conflict is defined by Guetzkow and Gyr (1954) as “intellectual opposition among participants, deriving from the content of the agenda” allowing for more discussion and constructive exchange of ideas. Table 1 classifies the demographic variables into high/low visibility and job related categories.

<table>
<thead>
<tr>
<th>High Visibility</th>
<th>Job- Unrelated</th>
<th>Job-related</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Sex</td>
<td>Work experience</td>
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<tr>
<td></td>
<td>Age</td>
<td>Educational Qualifications</td>
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<table>
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<tr>
<th>Low Visibility</th>
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Structural Diversity

With the rise of globalization, work teams increasingly consist of team members that are located at different geographic locations, responsible for different functional assignments, reporting to different managers, and working in a variety of business functional units. According to Cummings (2004), structural diversity is an important factor that influences the propensity of team members to share external knowledge. He emphasized four types of structural diversity that are important for knowledge sharing: geographic locations, functional assignments, reporting managers and business units.

When the team members are in diverse geographical locations, there are more opportunities for external knowledge sharing as different members can access different environments. Similarly, a wide variety of functional assignments for the team broadens the knowledge base of the team members. It also allows the reception and transmission of knowledge from the external environment resulting in a higher level of external knowledge sharing. Multiple reporting relationships among team members
can also encourage external knowledge sharing. Integrating team members across different business functional units results in a more integrated organizational structure that allows for knowledge to flow freely among the different functional units of the organization. In conclusion, greater the structural diversity among team members the greater will be the opportunities for the team for knowledge sharing due to easy access to a greater number and more diverse social networks.

Leadership Behavior

Srivastava, Bartol and Locke (2006), believe that the cooperative learning behavior is not automatically ingrained in teams. Their study indicates that team leadership has a significant effect on whether team members are willing to share knowledge or not. If the leader recognizes team members for their contribution to the team, then team members are motivated to share more knowledge with others. Also, if the decision making style of the leader is participative then members feel that their contribution is meaningful. If leader provides them positive feedback then members are more likely to participate and contribute in decision making. If leader is a good coach then the coach can effectively change team behavior. A leader playing the role of a coach encourages team members to solve problems as a team by sharing their expertise. Coach creates more opportunities for knowledge sharing and cooperative learning. There is definitely a positive relationship between leadership behavior and cooperative learning behavior within a team.

Autonomy

Autonomy is the extent to which an individual or a team is allowed to determine the course of actions and given resources to implement the decisions. In the context of self-directed teams autonomy includes responsibility for the management of tasks, that is, task scheduling and task assignment to group members (Janz, 1999). It is predicted that greater autonomy should increase the tendency among group members to share knowledge. Therefore, logically it follows that greater autonomy to teams would encourage the behavior of cooperative learning among team members.

Organizational Commitment

Organizational commitment is defined as “the strength of an employee's identification and involvement in a particular organization” (Lin, 2006). The level of cooperation among team members tends to be higher when they identify themselves with the organization. This higher level of cooperation generally translates into willingness to share knowledge and to help each other to accomplish the goals of the organization. This indicates that a higher level of organizational commitment in individuals would encourage cooperative learning behavior among employees in a team.

Team Cohesion

Team cohesion is a prerequisite for team cooperation. Team cohesion is the result of internal and external forces acting on team members that binds them to participate as a team. Participation in the group requires cooperation among team members, receiving and giving help to achieve organizational goals. Team cohesion can also be defined as the glue binding the team together and maintaining relationships to one another. Team cohesion has many dimensions such as inter-personal dimension, a task dimension and others. The inter-personal or social cohesion can be defined as the dedication of the members for the other team members. Social cohesion is defined to include factors such as communication patterns among the members, conflict and its resolution, individual inputs and their importance, and distribution of tasks among team-members. Task cohesion can be defined as the extent to which the team works together to achieve a certain goal. Team cohesion should in theory have a positive impact on the level of information that is shared among team members. This implies that cohesion would positively impact cooperative learning behavior in the development teams.
Table 2: Critical factors influencing cooperative learning behavior

<table>
<thead>
<tr>
<th>Critical Factor</th>
<th>Impact / Relationship Summary</th>
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<tbody>
<tr>
<td>Organizational climate</td>
<td>1. Higher the orientation of the organization towards risk, higher the level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>2. Higher the orientation of the organization towards group based rewards, higher the level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>3. A warmer organizational climate results in higher level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>4. Higher the organizational support, higher the level of cooperative learning among IS development teams.</td>
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<td></td>
<td>5. Lower the degree of formalization in an organization, higher the level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>6. Lower the degree of centralization in an organization, higher the level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td>Personality</td>
<td>1. Higher level of aggregate conscientiousness results in a higher level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>2. Higher level of aggregate agreeableness results in a higher level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>3. Higher level of aggregate emotional stability results in a higher level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>4. Higher level of variance in extraversion results in a higher level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>5. Higher level of aggregate openness to experience results in a higher level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td>Demographics</td>
<td>1. Lower variance in sex of team member results in a higher level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>2. Lower variance in age of team member results in a higher level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>3. Higher variance in work experience of team member results in a higher level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td></td>
<td>4. Higher variance in educational qualifications of team member results in a higher level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td>Structural Diversity</td>
<td>1. Higher level of diversity in geographical locations results in a higher level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td></td>
<td>2. Higher diversity of functional assignments results in a higher level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td></td>
<td>3. Higher number of reporting relationships results in a higher level of cooperative learning among IS development teams.</td>
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<tr>
<td></td>
<td>4. Higher level of integration across different business units result in a higher level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td>Leadership Behavior</td>
<td>Supportive leadership behavior leads to higher level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td>Autonomy</td>
<td>Higher degree of autonomy results in a higher level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td>Organizational Commitment</td>
<td>Higher degree of organizational commitment results in a higher level of cooperative learning among IS development teams.</td>
</tr>
<tr>
<td>Team Cohesion</td>
<td>Higher degree of group cohesion results in a higher level of cooperative learning among IS development teams.</td>
</tr>
</tbody>
</table>

CONCLUSION

This study identifies several factors that determine and influence cooperative learning behavior among team members in an IT development environment. This is particularly useful to IT managers, who are under pressure to improve performance and increase efficiency in the IT department. Factors such as organizational climate and leadership support can be made more conducive to enhance cooperative learning behavior. On the other hand, factors such as personality and demographics can be
taken into account when forming teams or human resource managers could consider these variables while hiring new employees. Cooperative learning has been established as a factor that influences team work performance. This paper contributes to research by determining the factors that can encourage cooperative learning.

LIMITATIONS AND FUTURE RESEARCH

While this paper makes an important contribution to literature by identifying the antecedents of cooperative learning, it suffers from some limitations. First, our discussion of the antecedents of cooperative learning is purely theoretical and derived from a wide range of literature. An opportunity for further research could involve the statistical testing of the model proposed in this paper. This will be a natural extension of our work that would verify the proposed relationships in the model.

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THE DECREASE IN THE VELOCITY OF MONEY IN THE UNITED STATES: SOME POSSIBLE CAUSES AND SOME IMPLICATIONS

Harrison C. Hartman
Emory University, USA

ABSTRACT

Some have noted that the velocity of money in the United States has been decreasing. This study reviews the equation of exchange to consider the implications for the ability of expansionary monetary policy to stimulate real GDP in an economy where velocity is decreasing. Some possible benefits of the expansionary monetary policy not necessarily obvious based only on equation of exchange analysis are considered. Increases in the money supply could have prevented further losses of real GDP during the recent recession. The greater money supply could have also prevented debt deflation. The expansionary monetary policy could have also increased the effectiveness of fiscal policy. Regression analysis finds some tentative evidence supporting the view that a decrease in interest rates may have contributed to the recent decrease in the velocity of M1 in the United States. The decrease in real GDP and other factors could also have contributed to the decrease in the velocity of money. Additionally, a tentative conclusion is that changes in the velocity of M1 may have become more sensitive to interest rates and changes in real GDP.

Keywords: Velocity of Money, Equation of Exchange, Macroeconomics.

INTRODUCTION

Velocity

The velocity of money in economics refers to the number of times per year on average that a dollar trades in a transaction that is part of Gross Domestic Product (GDP). Refer to Mishkin (2004, p. 518) for more. More specifically, Dornbusch, Fischer, and Startz (2008, p. 386) note that this measure of velocity is income velocity rather than transactions velocity, the latter of which measures the average number of times per year that a dollar trades in all transactions. Guest Michael Darda and Host of Bloomberg News’ Surveillance Midday Tom Keene (2011) discussed the decrease in the velocity of money in the United States. Earlier, the recent decrease in the velocity of money was noted by Hansen (2009) and also appears in data from www.economagic.com. This decrease in velocity raises questions about the degree to which monetary policy generated increases in real GDP in the U.S. during the current recovery, particularly during a time when short-term interest rates were very low. However, the increases in money supply may have been beneficial by preventing a larger recession.

This paper acknowledges that the U.S. economy may be either in a liquidity trap or close to a liquidity trap, as in Hartman (2010). Krugman (2011), Mason (2008), and others also view the U.S. economy to be in a liquidity trap. Uncertainty may exist as to whether liquidity traps have practical applicability outside of economic models. If liquidity traps exist, very low interest rates, likely approaching zero per cent, are often listed as a feature of a liquidity trap. Monetary policy may be less able to increase real GDP when interest rates are very low if the quantity of money demanded is highly responsive to interest rates. (Dornbusch, Fischer, and Startz 2008, pp. 253-4, 261) Krugman and Wells (2009, pp. 879-80) also provide some background information. For more on liquidity traps and associated references, see Gärtner and Jung (2011).

This study considers a relatively simple approach to help analyze the impact of monetary policy on real GDP starting in the first quarter of 2008 based on the equation of exchange and the concept of the velocity of money. Further, this study lists some possible benefits of the recent increases in the money supply in the United States. This study also uses regression analysis for a tentative, preliminary answer to the question as to whether the recent decrease in interest rates in the United States had an impact on velocity. Additionally, the study offers tentative insight regarding whether a change in the relationship between velocity and interest rates occurred recently in the U.S. Before concluding, the study discusses price increases possibly due to recent increases in the money supply that are not measured in GDP.

Data

The data for this study were found on www.economagic.com unless otherwise noted. The Federal Reserve compiles data on M1, M2, the velocity of M1, the velocity of M2, and the effective federal funds rate. The Bureau of Economic Analysis compiles data on real GDP and the implicit GDP deflator. The study uses seasonally adjusted data for real GDP, the implicit GDP
deflator, M1, and M2. Real GDP is measured in billions of chained 2005 dollars and at an annualized rate. M1 and M2 are also measured in billions of dollars. Monthly federal funds rate data (and M1 and M2 data for calculating velocity) are converted in this study to quarterly data by averaging the three months of data in the quarter.

**Equation of Exchange and Velocity**

The relationship between money supply (M), velocity (V), real GDP (Y), and price levels (P) has long been well established through the equation of exchange, which states that by definition, \( M \times V = P \times Y \). (Mishkin, 2004, p. 518) In the equation of exchange, \( P \times Y \) = nominal GDP. In measuring production, nominal GDP assigns a value for each good produced equal to its price in the period in which it was produced. On the other hand, real GDP (a better measure of production) assigns a value to each good produced equal to its base year price. (Mishkin 2004, pp. 20-1)

M1 is the narrowest measure of money in the United States. The components of M1 are the general public’s holdings of currency, travelers’ checks, and funds in checking accounts with unlimited check writing privileges. M2 is comprised of all components of M1 plus some assets such as money market deposit accounts that are not quite as liquid as the assets in M1. (Burton and Lombra 2006, p. 28)

Based on data on www.economagic.com, the GDP deflator (compiled by the Bureau of Economic Analysis) divided by 100 appears to be the measure of the price level in the equation of exchange. As Mishkin (2004, p. 518) and others point out, velocity can simply be calculated as nominal GDP divided by the money supply.

According to data on www.economagic.com, the velocity of M1 in the United States has decreased from 10.3695 (its maximum value listed) in the fourth quarter of 2007 to 7.7876 in the second quarter of 2011. Figure 1 below displays this data in graphic form. The decrease in velocity means that each dollar, on average, is being spent fewer times per year in a GDP transaction than before when velocity was larger. The author calculates that the velocity of M1 decreased by approximately 25 per cent from the fourth quarter of 2007 to the second quarter of 2011.

![Figure 1: The Velocity of M1 in the United States, 1959 (quarter 1) through 2011 (quarter 2)](image)

Data from www.economagic.com also show that the velocity of M2, a larger measure of money, has also decreased recently. The velocity of M2 reached its greatest level (at least since 1958) at 2.1287 in the third quarter of 1997, roughly one decade earlier than when the velocity of M1 reached its peak in the fourth quarter of 2007. After decreasing below 1.86, the velocity of M2 reached a local maximum of 1.9586 in the second quarter of 2006. After reaching a local minimum of 1.644 in the second quarter of 2009, the velocity of M2 remained below 1.70 at least through this writing and was 1.6605 in the second quarter of 2011. Based on this data from www.economagic.com, the author calculates that the velocity of M2 decreased by approximately...
16 per cent from the second quarter of 2006 through the second quarter of 2009. However, the author calculates that the percentage decrease in the velocity of M2 from the third quarter of 1997 through the second quarter of 2009 was approximately 23 per cent.

At least recently, M1 was probably the monetary aggregate in the U.S. that best fit the definition of money. (Burton and Lombra 2006, p. 29) Thus, this study will focus primarily on the velocity of M1.

LITERATURE REVIEW

Dornbusch, Fischer, and Startz (2008, p. 387) note that the classical school of macroeconomic thought assumed velocity was nearly constant. According to Mishkin (2004, pp. 518-9), Irving Fisher, whose work on velocity was consistent with the classical school, found that some of the factors influencing transactions velocity were features of the payments system and how technology related to the payments system.

Economists realized during the Great Depression, according to Mishkin (2004, p. 521), that velocity can decrease substantially during a downturn. In particular, Mishkin (2004, p. 521) notes that Keynes (1936) did not assume constant velocity of money. Regarding the impact of interest rates on money demand, Keynes (1936) specified, according to Mishkin (2004, p. 523), that real money demand (the quantity of money demanded divided by the price level) depended on the interest rate and real GDP or real income. In this analysis, higher interest rates lead to a decrease in the quantity of money demanded as people prefer to hold less wealth as money and place more buying power in bonds. (Mishkin 2004, pp. 106) An increase in real income leads to an increase in the quantity of real money demanded. (Mishkin 2004, p. 523)

Mishkin (2004, p. 523) points out that after solving the equation of exchange for velocity, the real money demand function can be substituted into the equation for velocity to show that velocity is a function of the interest rate and real GDP. In the resulting equation for velocity, an increase in the interest rate leads to a decrease in velocity, all other things equal, contrasting with the classical perspective of velocity. (Mishkin 2004, p. 523)

Burton and Lombra (2006, p. 516-7) note that the monetarist school of thought assumes that velocity is predictable. An important work in the monetarist school of thought is Friedman (1956). According to Mishkin (2004 p. 529), Friedman (1956) assumed that real money demand depended on factors including permanent income, the return of money compared with other assets (such as stocks, bonds, and goods, the latter of which depends in part on forecated inflation), and labor income versus investment income; where permanent income is the present value of total income to be received in the future. However, according to Mishkin (2004, p. 531), Friedman's real money demand function depends mainly on permanent income, so that interest rates do not have much impact on real money demand or velocity.

Studies estimating a velocity function include Duczynski (n. d.) and Omer (2010). Duczynski (n. d.) estimates velocity functions for many countries, finding that interest rates may have had a positive impact on velocity in at least some of the countries considered. Omer (2010) estimates an equation for the change in velocity in Pakistan based on Friedman’s (1956) analysis of money demand. Findings of Omer’s (2010) study include that interest rates impact velocity for only one of three monetary aggregates considered.

Attention now returns to the equation of exchange to raise questions about the ability of monetary policy to increase real GDP when velocity is decreasing. Afterward, correlation and regression analysis begin to address the degree to which interest rates have affected velocity.

INCREASES IN THE MONEY SUPPLY WHEN VELOCITY DECREASES

Equation of Exchange Analysis

Increases in the money supply may be insufficient to stimulate the economy when velocity decreases. (Posner 2011, pp. 202-3) Whether or not the U.S. economy is either in a liquidity trap or close to a liquidity trap, the equation of exchange implies that a reduction in velocity means a smaller increase in nominal GDP associated with a given increase in the money supply (or perhaps a larger decrease in nominal GDP if the decrease in velocity dominates). Assuming no decrease in the GDP deflator, the smaller increase or larger decrease in nominal GDP implies a smaller increase or larger decrease in real GDP.

Because the velocity of money is an average of all dollars circulating in the economy, the reader certainly cannot assume that the dollars that were in circulation in December 2007 (when the velocity of M1 peaked in the fourth quarter of 2007) continued to trade on average roughly 10.4 times (on an annualized basis) in GDP transactions each quarter after the fourth quarter of
2007. However, to help illustrate the potential difficulty of increasing real GDP with monetary policy when velocity is decreasing, suppose that it is reasonable to assume that the velocity of the dollars part of M1 in December 2007 continued to have a velocity of 10.4 times per year. That assumption would imply that the velocity of the dollars issued from January 2008 through June 2011 would have been roughly 1.6 (on an annualized basis) in the second quarter of 2011 so that the velocity of all dollars in the money supply in the second quarter of 2011 fell to approximately 7.8 (on an annualized basis). (Note that this does not imply that the velocity of all dollars issued beginning January 2008 was roughly 1.6 on an annualized basis every quarter from the first quarter of 2008 through the second quarter of 2011.) To the extent that this analysis holds, questions arise about the ability of increases in the money supply to stimulate spending when velocity decreases substantially.

Based on data from www.economagic.com, the author calculates that nominal GDP increased by approximately 5.2 per cent between the fourth quarter of 2007 (when nominal GDP was approximately 14.253 trillion dollars) and the second quarter of 2011 (when nominal GDP was roughly 14.997 trillion dollars). M1, however, increased by roughly 42 per cent (from 1.3736 trillion dollars to 1.9474 trillion dollars) from December 2007 through June 2011. (Over the same period, M2 increased from 7.4947 trillion dollars to 9.1114 trillion dollars, an increase of approximately 22 per cent.) The net gain in nominal GDP over that time interval was due to an increase in price levels, not due to an increase in production in the economy. In fact, the author calculates that real GDP in the second quarter of 2011, at roughly 1.326 trillion dollars, was still roughly 0.5 per cent less than its peak in the fourth quarter of 2007. Between the fourth quarter of 2007 and the second quarter of 2011, the GDP deflator increased roughly 5.7 per cent.

**Possible Benefits of Increases in the Money Supply**

The study cannot conclude, however, that the increases in the money supply beginning in the first quarter of 2008 were not beneficial. An important question is whether real GDP would have decreased more during the recession or failed to increase as much during the recovery without the increase in the money supply. For example, suppose the money supply remained at its level during the fourth quarter of 2007 from the first quarter of 2008 through the second quarter of 2011. Although not necessarily a likely assumption, if velocity would have taken the same values from the first quarter of 2008 through the second quarter of 2011 as in the actual data despite the assumption of no change in the money supply, nominal GDP would have been much lower. In that case, without a substantial decrease in the GDP deflator, real GDP would also have been much lower.

As discussed near the end of this paper, the greater money supply could have enhanced the impact of fiscal policy on real GDP. Dombusch, Fischer, and Startz (2008, pp. 263-4) and others note that increases in the money supply can keep interest rates lower so that expansionary fiscal policy can increase real GDP.

Decreasing price levels such as the GDP deflator could lead to a debt deflation. In a debt deflation, incomes decrease as price levels decrease, while at least some borrowers have fixed nominal interest rate loans. Thus, defaults increase as some borrowers have no reduction in the dollars they owe but they have less income. This could result in a loss of real GDP. For more on debt deflation, see Burton and Lombra (2006, p. 285-6). Chairman of the Board of Governors Ben Bernanke was concerned about the impact of deflation on the economy. (Wiseman, 2011) Thus a benefit of the expansionary monetary policy was to avoid deflation. Hansen (2009) also noted some may be concerned about possible deflation occurring in the United States. This concern was at least in part based on the decrease in velocity.

**CORRELATION AND REGRESSION ANALYSIS**

**Correlation Analysis**

This study uses the federal funds rate to represent interest rates. The federal funds rate is the interest rate charged by a bank for a very short-term loan to another bank. (Mishkin 2004, p. 393) Data from www.economagic.com show that the federal funds rate was at or near 5.25 per cent from July 2006 through July 2007 and decreased from 4.24 per cent in December 2007 to 0.09 per cent in June 2011. Could the recent decrease in the federal funds rate have been a factor in the decrease in the velocity of M1? Did a change in the relationship between the velocity of M1 and the federal funds rate occur as the velocity of M1 began to decrease in 2008? This study considers correlations and some regression analysis to offer tentative, preliminary answers.

A change in the relationship between the velocity of M1 and the federal funds rate may have occurred. Based on the data from www.economagic.com, the correlation between the velocity of M1 and the federal funds rate has likely increased. From the first quarter of 2008 through the second quarter of 2011, the correlation between the velocity of M1 and the federal funds rate was approximately +0.918. The estimated correlation between the velocity of M1 and the federal funds rate between the first
quarter of 2000 and the fourth quarter of 2007 was approximately +0.62. Over the entire sample period beginning in 1959, the estimated correlation was approximately -0.041.

The reader may wish to note that the correlation between the change in the federal funds rate and the change in the velocity of M1 from the second quarter of 2000 through the fourth quarter of 2007, approximately +0.596, was slightly higher than the correlation between the same two variables from the second quarter of 2008 through the second quarter of 2011 (approximately +0.590). This could be due in part to a reduction in the absolute value of the change in the federal funds rate as the federal funds rate has approached zero. As the federal funds rate has become closer to zero, the decreases in the federal funds rate in recent quarters have tended to become smaller. Perhaps this is evidence of the zero interest rate bound as in Dornbusch, Fischer, and Startz (2008, p. 254) and elsewhere. The study considers some regressions to analyze further the relationship between the velocity of M1 and the federal funds rate as velocity decreased.

**Regression Analysis**

The current study seeks to focus on the decrease in the velocity of M1 that began in 2008 and may continue for an unknown time into the future. Hence, this study is in the preliminary phase of analysis, and the reader should realize that any conclusions should be viewed as tentative. This may be of particular importance when considering the following regression analysis.

Recalling that Mishkin (2004, p. 523) notes that Keynes’ (1936) money demand function implies that velocity is a function of interest rates and real GDP, the current study uses regressions where real GDP and interest rates could impact velocity. According to Hamilton (1994, p. 1), a U.S. money demand function due to Goldfeld (1973) had (among other variables) two different interest rates contemporaneously impacting money demand. Similarly, the regressions in this study assume that the federal funds rate can affect the change in velocity within the same period. However, this study also assumes that changes in real GDP impact velocity only after a delay because dollars must be spent in order to be part of GDP.

As Hamilton (1994, pp. 557-62) and others note, the use in regressions of non-stationary data that are I(1) or integrated of a higher order could invalidate hypothesis testing without modification. The decisions of whether to use variables in levels or first differences in regressions were based largely on results from augmented Dickey-Fuller unit root tests. References include Dickey and Fuller (1979) and Dickey and Fuller (1981). Augmented Dickey-Fuller test results suppressed here conclude that over the full sample period, velocity, real GDP, and the federal funds rate are I(1), or stationary after the first difference. However, the federal funds rate was I(0) at the sixteen per cent level based on probabilities from MacKinnon (1996). Additionally, would a change in the federal funds rate today lead to a change in all future forecasted values of the federal funds rate (as the author believes would be the case if the federal funds rate has a unit root and the author’s understanding of unit roots in Hamilton (1994, p. 439-41) is correct)? Thus, the study uses the federal funds rate in levels (R) but the first differences of velocity (D_V) and real GDP (D_Y). The letter D represents the first difference or the change in either velocity or real GDP.

The quarter for each variable value appears in parentheses after the name of the variable. For example, R(t) represents the federal funds rate in the same quarter as the change in velocity (D_V(t)), the dependent variable in the regressions. Four lagged values of D_V (D_V(t-1) through D_V(t-4)), R (R(t-1) through R(t-4)), and D_Y (D_Y(t-1) through D_Y(t-4)) appear on the right-hand side of the regression equations with the goal of trying to eliminate serial correlation in the error terms. For more on serial correlation, see Hamilton (1994, pp. 225-7).

Tables 1 and 2 summarize some of the regression results from EViews. Note that the use of differenced data and lags causes a reduction in the sample period for the first regression. Table 1 has results from the full sample period (except for the loss of five quarters due to lags and differenced data). Table 2 presents results for a sample beginning in the first quarter of 2000.
When considering the entire sample period, it appears that the federal funds rate had a positive impact on the change in velocity at least contemporaneously, although the impact was small, with the estimated coefficient on the federal funds rate approximately 0.0215. Although it would be a large change in the federal funds rate for one quarter, consider for computational ease an increase in the federal funds rate of ten percentage points. The estimated coefficient of approximately 0.0215 for R(t) implies that, all other things equal, an increase in the federal funds rate by ten percentage points in one quarter would cause an increase in the change of velocity in the same quarter (D_V(t)), but by only 0.215 on an annualized basis. Likewise, a decrease in the federal funds rate, all other things equal, would cause a decrease in the change in velocity. The Breusch-Godfrey test statistic of 0.837517 (with a probability of 0.857863) fails to reject the null hypothesis of no serial correlation at two lags. It may be worth noting that none of the estimated coefficients for D_Y are statistically significant, and regarding velocity, only the coefficient for the first lag of the change in velocity (D_V(t-1)) is statistically significant.

However, the current study cannot place much confidence on estimates given that an omitted variables problem may exist. Recall that Mishkin (2004, p. 529) listed several factors impacting money demand in Friedman (1956). Some of these factors, such as forecasted inflation, are not included in the regressions in the current study. Inclusion of other potentially important variables could alter the estimates.

| Table 1: Ordinary Least Squares Regression Results; Dependent Variable: D_V(t) |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| **Sample:** 1960q2 through 2011q2 |
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| C | 0.007164 | 0.017826 | 0.401905 | 0.6882 |
| D_V(t-1) | 0.538439 | 0.095717 | 5.625343 | 0.0000 |
| D_V(t-2) | 0.018513 | 0.103992 | 0.178021 | 0.8589 |
| D_V(t-3) | 0.081350 | 0.107170 | 0.759076 | 0.4487 |
| D_V(t-4) | -0.030293 | 0.098177 | -0.308553 | 0.7580 |
| R(t) | 0.021544 | 0.007408 | 2.908302 | 0.0041 |
| R(t-1) | 0.003078 | 0.012178 | 0.252725 | 0.8008 |
| R(t-2) | -0.041881 | 0.012691 | -3.300113 | 0.0012 |
| R(t-3) | 0.036922 | 0.012909 | 2.860151 | 0.0047 |
| R(t-4) | -0.018942 | 0.008438 | -2.244728 | 0.0259 |
| D_Y(t-1) | -3.16E-05 | 0.000166 | -0.189795 | 0.8497 |
| D_Y(t-2) | 0.000166 | 0.000167 | 0.997907 | 0.3196 |
| D_Y(t-3) | -0.000200 | 0.000169 | -1.183161 | 0.2382 |
| D_Y(t-4) | -8.76E-06 | 0.000160 | -0.054829 | 0.9563 |

R-squared | 0.478010 |
Adjusted R-squared | 0.442482 |
Breusch-Godfrey test statistic | 0.837517 |

Table 2: Ordinary Least Squares Regression Results; Dependent Variable: D_V(t)

| **Sample:** 2000q1 through 2011q2 |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| C | -0.189454 | 0.083808 | -2.260564 | 0.0307 |
| D_V(t-1) | 0.260604 | 0.228028 | 1.142861 | 0.2616 |
| D_V(t-2) | -0.220318 | 0.226823 | -0.971320 | 0.3387 |
| D_V(t-3) | -0.460162 | 0.232534 | -1.978897 | 0.0565 |
| D_V(t-4) | -0.039383 | 0.234345 | -0.168055 | 0.8676 |
| R(t) | 0.186310 | 0.057630 | 3.232858 | 0.0028 |
| R(t-1) | -0.307127 | 0.105232 | -2.918575 | 0.0064 |
| R(t-2) | 0.247796 | 0.114666 | 2.157265 | 0.0386 |
| R(t-3) | -0.013931 | 0.115152 | -0.129079 | 0.9045 |
| R(t-4) | -0.064815 | 0.061685 | -1.050738 | 0.3012 |
| D_Y(t-1) | 0.000135 | 0.000377 | 0.357266 | 0.7232 |
| D_Y(t-2) | 0.000853 | 0.000369 | 2.309771 | 0.0275 |
| D_Y(t-3) | 5.56E-05 | 0.000401 | 0.138508 | 0.8907 |
| D_Y(t-4) | 5.60E-05 | 0.000407 | 0.137462 | 0.8915 |

R-squared | 0.714522 |
Adjusted R-squared | 0.598546 |
Breusch-Godfrey test statistic | 0.032865 |
A change in the relationship between the federal funds rate and the change in velocity may have occurred. The study was not able to perform the same regression as in Table 1 but with data starting in 2008 (after the velocity of M1 peaked) because of insufficient observations. Thus, Table 2 presents results from the first quarter of 2000 through the second quarter of 2011. The impact of interest rates on velocity may have increased, as the absolute values of the estimated coefficients for the federal funds rate terms tend to be greater in Table 2 than in Table 1. In the shorter sample period, an increase in the federal funds rate of ten percentage points would lead to an increase in velocity of 1.86 (on an annualized basis) in the same quarter, all other things equal. The results also suggest that a change in real GDP two quarters ago ($D_Y(t-2)$) has a positive, statistically significant impact on the change in velocity in the current quarter, while an increase in velocity three quarters ago ($D_V(t-3)$) leads to a decrease in velocity in the current quarter. Similar to the results from the regression with the longer sample period, the Breusch-Godfrey test statistic ($0.032865$) fails to reject the null hypothesis of no serial correlation at two lags with a probability $0.983702$, although serial correlation may exist for a greater number of lags.

Future work could further analyze the results. If the federal funds rate is non-stationary, future work could also use the change in the federal funds rate rather than the federal funds rate in levels in regression analysis. If the federal funds rate, real GDP, and the velocity of M1 are all non-stationary, this raises the possibility of cointegration, as in Engle and Granger (1987) and others, among the variables.

**PRICE INCREASES NOT MEASURED IN GDP?**

Declining interest rates may have been partly responsible for the recent decline in velocity in the United States. As mentioned earlier, M1 has increased substantially, but real GDP in the second quarter of 2011 was still below its pre-recession peak from the fourth quarter in 2007. The author calculates that real GDP increased from the trough in the second quarter of 2009 through the second quarter of 2011 by only roughly five per cent despite the aforementioned increase in M1 of approximately 42 per cent from December 2007 through June 2011.

The percentage increase in the implicit GDP deflator has also been much less than the percentage increase in M1. From the fourth quarter of 2007 through the second quarter of 2011, the GDP deflator increased by roughly 5.7 per cent. Has the increase in money supply spurred price increases not included in nominal GDP?

Some (for example, Hamilton (2010)) suggest that the recent expansionary monetary policy in the United States likely led to an increase in commodity prices. Although Hamilton (2010) may not have specifically addressed gold, the recent increase in the price of gold provides an example. The price of gold was below 715 U.S. dollars per ounce in late 2008 but reached roughly 1,900 dollars per ounce in August 2011. (en.wikipedia.org/wiki/Gold_as_an_investment) Although the author is not certain, much of the gold that is sold was probably produced in the past. As Krugman and Wells (2009, p. 595-6) and others note, sales of pre-owned items are not included in real GDP (although if productive value is contributed, the value added would be included). Further, Burton and Lombra (2006, p. 163) and others find a negative relationship between interest rates and stock prices, at least in the short term. The decrease in the federal funds rate and other interest rates in the United States could have helped to increase equity share prices. For example, in early 2009, the Dow Jones Industrial Average was below 7,000 but reached over 12,000 in part of 2011. (en.wikipedia.org/wiki/Dow_Jones_Industrial_Average) The purchases and sales of stocks do not directly contribute toward real GDP. (Krugman and Wells 2009, p.596)

**COMBINING FISCAL AND MONETARY POLICY**

In recent decades, monetary policy (or changes in money supply and interest rates) has been used more often than fiscal policy (changes in government spending and changes in taxes) in an effort to reduce inflation and increase real GDP growth. Dornbusch, Fischer, and Startz (2008, pp. 420-2) provide a comparison of fiscal policy versus monetary policy. As noted earlier, the ability of monetary policy to generate increases in production could be much lower when interest rates are very low.

However, Krugman and Wells (2009, p. 893) note that some including Milton Friedman suggested that the ability of fiscal policy to stimulate real GDP could be limited by a constant money supply. Without an increase in the money supply, higher interest rates arising from fiscal expansion as the government borrows could reduce investment by firms in physical capital, leading to crowding out. (Dornbusch, Fischer, and Startz 2008, pp. 260-1) Dornbusch, Fischer, and Startz (2008, pp. 263-4) point out that increasing the money supply can reduce crowding out by keeping interest rates lower, but this assumes that real GDP is less than a quantity consistent with full employment.

Expansionary fiscal policy has been used to try to stimulate real GDP in the U.S. during the recent recession and recovery. The American Recovery and Reinvestment Act of 2009 was passed with one of the goals being preventing the economy from
getting worse. The legislation was criticized for several reasons (en.wiki.org/wiki/American_Recovery_and_Reinvestment_A ct_of_2009). Based on the discussion above, recent increases in money supply could have helped the effectiveness of fiscal policy. Perhaps the fiscal and monetary policy measures that were implemented could be further reviewed to improve the ability of both forms of policy to stabilize the economy when real GDP decreases or grows slowly in the future. One of the findings of Gärtner and Jung (2011) is a special case where, under certain conditions, only the combination of fiscal policy and monetary policy can stimulate the economy.

CONCLUSION

This study has noted (as others have pointed out) that the velocity of money in the U.S. has decreased. A decrease in velocity increases the difficulty of increasing real GDP by increasing the money supply, all other things equal. However, the expansionary monetary policy enacted recently in the U.S. may have been beneficial by preventing further production losses.

Tentative conclusions include lower interest rates and lower real GDP as possible causes for the decrease in velocity, although real GDP has been increasing in recent quarters. Regression analysis over the entire sample period found a small, positive relationship between the federal funds rate and the velocity of M1. Thus other factors could also have been responsible for the decline in velocity. Also, the relationship between the federal funds rate and velocity may have changed, so that changes in velocity have become more sensitive to interest rates. Perhaps policymakers could find ways to improve the usage of fiscal policy and monetary policy together to increase growth.

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SALES NEOPHYTE STRUGGLE IN TODAY’S B2B BUSINESS

J. D. Williams
Kutztown University, USA

ABSTRACT
For an extended period of years there have been discussions, even heated arguments, regarding which was the best: quota-based earnings or salary-based earnings for business-to-business (B2B) salespeople? Having been a salesperson and sales manager myself for almost 20 years, your author has heard this topic being bantered around on multiple occasions. When your author was with IBM years back, your author even presented a research paper on the subject and, since that time, your author has consulted with a few firms overseas on similar topics. And, considering the plethora of articles and research papers on the subject matter, your author would conclude that the topic still remains alive and seemingly without resolution...at least not until this research project.

Keywords: Neophyte Sales Struggle; B2B; Quota-Based Earnings; Salary-Based Earnings

RESEARCH OBJECTIVE
The research objective has been to discover the relevant qualitative characteristics and value determinations of selling under a quota-commission structure versus a fixed-salary compensation program or combination of quota-commission and fixed-salary compensation for new entrants into a class-five (complex, high value, industrial & international-oriented) B2B selling environment.

RESEARCH APPLICATION AND VALUE
This research has focused on new entrants into the professional B2B sales arena, an area that has been largely overlooked in previous research. In addition, this paper has addressed the psychological implications of selling in the 21st Century and how specially planned compensation programs can ease much of the anxiety. This paper has attempted to shed new light on the subject, quota-based earnings or salary-based earnings, by having culminated and condensed the exhaustive list of secondary writings, having taken into consideration my own sales experience, and by having gained a well researched perspective. The purpose of this research has been to offer the industrial sales and marketing community ample justification and application for a compensation program that seeks to offer multi-pronged benefit to the sales staff, sales management and the overall marketing department.

INTRODUCTION
For a new or inexperienced sales person, or possibly a salesperson operating in a new business environment, a tremendous uneasiness would likely confront that person to not only achieve at an exceeding high level as well as to find a way through the gauntlet of sales training, field training, product and business relationships. When beginning a sales career, particularly in a level five, B2B firm (the highest order of a sales complexity), which would invariably challenge that person’s ability to learn the ‘ropes’ of both the internal and external business structures, cultures and formalities, logically, that person would likely experience initial feelings of vulnerability, doubt, confusions and possibly high states of anxiety (Joseph & Thevarajan, 1998). Not only does this new sales person have to deal with such feelings for up to 2 years, he or she would logically also be concerned with their compensation plan. Risk aversion plays a role in that the compensation plan may or may not meet their initial and early phase (6 months to 1 year) needs, much less their 2nd year of field sales activities (Basu, Lal, Srinivasan & Staelin, 1985).

According to William Cron, in addressing new sales persons in B2B environments …exploration-stage people (neophytes) would likely be most critical of their jobs and managers. These negative attitudes would be reflected in their low performance on average vis-à-vis other salespeople. This stage would follow, in time, by a desire to establish themselves in their present capacity, which would have prompted them to increase their performance. Doing this, in turn, would lead to his/her job satisfaction (Cron, 17). A firm and its management must realize the initial trauma that these new sales persons would be experiencing and attempt to create some form of salary compensation that would ease the inexperienced sales persons’ entry into the business of professional selling.
Cron and Slocum wrote that the career stage should be relevant to sales management because sales would not only be an entry level position in many firms, but one in which many (sales)persons have remained for their entire career (Cron & Slocum, 1986). Cron and others have suggested that one’s career stage has a correlated effect on sales performance and motivation of a salesperson. One of utmost challenges for sale management, including myself as sales manager, has been coping with the transitioning of these sales persons from the ‘exploratory’ stage to the ‘established’ stage. It is believed by many researchers in this area, that there needs to be a system in place for managers to deal with the changes in attitudes and interests through the early career stages, particularly for the entry sales neophytes (Dalrymple & Strahle, 1990; Dubinsky, Michaels & Cron, 1988; Harrison, Johnson, McInnes & E. Elisabet Rustrom, 2005; and Markin & Lillis, 1975).

Today’s 21st century selling cycle for neophytes tends to be rather lengthy in B2B settings, 6-12 months. Research has shown that sales persons, in the exploration stage of their sales career, prefer a fixed salary compensation plan over a commission due to being inexperienced and commonly being rather risk-averse. As FIGURE 1 has shown, 93% of neophytes have exhibited some levels of risk aversion associated with their sales career and specifically effectively conducting the sales cycle (Cadsby, Song & Tapon, 2007). Out of the remaining 7%, 3.5% of neophytes are risk neutral while the other 3.5% are risk loving (Cadsby, et. al., 395). Also, research has shown by Cron and Slocum, that 14% of a typical B2B sales force was neophytes (ranging from 20 to 43 years of age). Some of these new sales persons would actually be classified as ‘explorators’, individuals whom are concerned with making long-term commitments to a particular organization (Cron & Slocum, 14).

During this early stage of a selling career, many of these persons have not yet had an opportunity to set aside a reasonable savings from past employment. Given that most B2B environments require a minimum education level of bachelor’s degree to enter into a sales career, and entry-level commonly means those persons having just recently graduated from college, it would be quite understandable for these neophytes to have been strapped for cash having approached $27,000 or more of financial debt responsibilities from college. As such, this financial burden from college would have created an even greater initial desire for a secure salary program to help reduce some of the uncertainty factors within the sale environment to include financial stability, while recovering from past debt and/or other burdens (Falvey, Jack, 1990; Hockenhull, 2007; Honeycutt, Harris & Castleberry, 1987). It would be of utmost importance that B2B sales managers to be quite understanding of these new entrants during the first two years of the neophytes’ sales career until an appropriate level of ‘steady’ income have been generated. A means of steady income would help the new salesperson to adjust to this life changing decision to settle in to a company and begin a long sales career (Abowd, 1990; and Barkem & Gomez-Mejia, 1998).

Since most neophytes have not had the experience of meeting or surpassing quotas they have yet fully understand the level of work-effort that would be needed to achieve these company sales goals. A supporting article from the Journal of Personal Selling and Sales Management argued that, “…given the high level of uncertainty, salespeople in exploration are likely to have low expectancy and instrumentality estimates. Salespeople may not feel that if they increase their efforts they will increase their performance and, also, if they increase their performance they will increase the rewards they will receive. In light of this, salespeople, in exploration, are expected to reject a compensation mix favoring incentive pay, resulting in reduced levels of job satisfaction and increased turnover intentions. However, if paid a fixed salary, the concerns of the salespeople may be alleviated (Flaherty, 2002).”

There has existed documented evidence that many organizations, whom were interested in a faster ramp-up of sales development for neophytes due their sizable invested large amounts of money, time, and human resources in their sales training programs and whom may have created more problems that anticipated due to overly stressing their respective neophytes through not properly linking them to a sufficiently seasons veteran to assist the neophytes in field training development (Shiply & Jobber, 2004; Pelham, 2002; Srinivasan, 1981; and Raju & Srinivasan, 1996). On average, firms spend between 3 to 9 months training new salespersons with an average cost of $100,000 (Cummings, 2004). The desired return-on-investment that the firm seeks from the neophytes would suggest a commission-based, pay-for-performance earnings structure, however, that goes against the initial desires/needs of the neophyte. Today’s research has shown that approximately 31% of U.S. firms use straight-salary compensation when paying new sales employees (Runner, 2003).

A rather unique aspect of these sales neophytes was that the majority of them, those of whom have established themselves as ‘career-oriented’ salespersons (explorators), would rather expeditiously change their sales compensation plan towards...
commission-based income due to its traditionally higher earnings potential. The B2B sales environment has created a phenomenon which sets in motion a desired earnings appetite transition process, which could only be achieved with a flex-earning compensation program of commission-based earning along with a base salary or just a strict commission-based earnings structure. This increased desire for compensation would occur slightly before or during the early next phase of their respective sales career. This change has been identified as the ‘establishment phase,’ in which salespersons shift focus from searching for an organization to committing to an organization. This growing financial desire sets forth a challenge for that business to determine when and how can it capture that sales transition knowledge and make the appropriate compensation adjustment in a timely manner.

Of course when the opposite corporate response occurs in that the firm had no mechanism for recognizing the needed change in sales compensation structure, a potentially devastating phenomenon would be that the neophytes may continue to increase their pessimistic attitudes toward their jobs because they do not feel an ‘ownership’ of their job. Cron’s research has revealed that, salespeople in the exploration (neophyte) stage of their careers would likely to have more negative attitudes than salespeople in other career stages. Although they find the job somewhat challenging, they are not highly involved in it (i.e., do not psychologically identify with the job), nor do they feel successful...people in the exploration stage of their careers are generally less satisfied with all aspects of their job than those in other career stages (Cron et.al. 15). This situation has traditionally taken place at different speeds for different people, in which the more mature person would tend to ramp-up faster. Some people learn faster than others and adapt to their surroundings at both a higher degree as well as a quicker pace to make their mark on the company (Leigh, 1987; Posner, 2007).

![Figure 2: Relationship Between Career Concerns and Age](image)

Once their attitudes become more positive towards their work, their level of understanding and appreciation for their institutional role will increase. As work level increases, the sales persons’ will desire to have their pay to reflect their level of job success. This is why once a person establishes themselves within a company they prefer a commission-based arrangement over their previous salary plan (Cron et. al., 14). A relative understanding of salesperson performance has been determined to relate to rewards and personal satisfaction, which has been presented by FIGURE 3.
Sales Neophytes Struggle in Today’s B2B Business

Personal, organizational & environmental variables

Roles perception

Aptitude

Skill level

Performance

Rewards - internally mediated

External rewards

Satisfaction - intrinsic

Extrinsic rewards

Figure 3: The Determinants of Salesperson Performance


Table 1

Sales Performance Matrix for 56 Reps in Year 2

<table>
<thead>
<tr>
<th>Category</th>
<th>Age</th>
<th>Aggregate Calls</th>
<th>Contractor Calls</th>
<th>Avg. Sales Per</th>
<th>Rep.</th>
<th>Avg. Contribution</th>
<th>N</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compromisers</td>
<td>48.3</td>
<td>1120</td>
<td>563</td>
<td>$2514</td>
<td>$1249</td>
<td></td>
<td>9</td>
<td>(7)</td>
</tr>
<tr>
<td>Lightweights</td>
<td>41.0</td>
<td>1006</td>
<td>521</td>
<td>$2551</td>
<td>$922</td>
<td></td>
<td>6</td>
<td>(4)</td>
</tr>
<tr>
<td>Laggards</td>
<td>41.0</td>
<td>997</td>
<td>414</td>
<td>$1487</td>
<td>$331</td>
<td></td>
<td>4</td>
<td>(1)</td>
</tr>
<tr>
<td>Ney's</td>
<td>34.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Recruits</td>
<td>38.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>(2)</td>
</tr>
<tr>
<td>Sluggokes</td>
<td>38.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td>Medium</td>
</tr>
<tr>
<td>Solid Citizens</td>
<td>36.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td>High</td>
</tr>
</tbody>
</table>

Sales Revenue: Medium ($000) $4,078

Satisfaction - intrinsic

Rewards - externally mediated

TABLE 1, prepared by Cron, has illustrated the four career stages along with the percentage of the sales force, within a given firm and their respective representation. This chart also shows the average age range of each stage. The first two combined stages, exploration and establishment, represent a significant sales population therefore merit serious concern. Dr. Cron’s chart also has revealed that the ages overlap considerably to which other research has shown that this is due people developing at different rates. It seems, in this 21st Century, that fewer persons are clearly directed towards what they want to do with their lives and what it takes to achieve their goals. Those that do have been able to move through the exploratory stage of the careers relatively fast (2-4 years) and can reach the establishment stage in their mid to late twenties. On the other hand, the majority of persons, whom have likely flittered around multiple jobs and disciplines in today’s marketplace, tend to take longer to commit to a career and an organization. Yet, in spite of the potentially vast differences in age ranges between the highly career directed persons and the late entrants into the sales arena, both groups tend to reflect similar concerns about commission-based experiences.

Table 2: Sales and Marketing Management Magazine’s 2nd Annual Compensation Survey (2001)

<table>
<thead>
<tr>
<th>Sale Personnel</th>
<th>Full Compensation</th>
<th>Base Salary</th>
<th>Bonus + Commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive-level</td>
<td>$122,899</td>
<td>$87,178</td>
<td>$35,721</td>
</tr>
<tr>
<td>Top Performer</td>
<td>$139,459</td>
<td>$78,483</td>
<td>$60,976</td>
</tr>
<tr>
<td>Mid-Level Performers</td>
<td>$77,179</td>
<td>$49,144</td>
<td>$28,035</td>
</tr>
<tr>
<td>Low-Level Performer(neophytes)</td>
<td>$51,992</td>
<td>$37,698</td>
<td>$14,294</td>
</tr>
</tbody>
</table>

Legend for Chart: B - TOTAL COMPENSATION; C - BASE SALARY; D - BONUS PLUS COMMISSION
Source: SMM/Equation Research survey of 2,644 sales and marketing executives, 2002

Additional research has shown that among salespeople in the exploration stage, turnover intentions were significantly higher when incentive pay is received and lower when fixed salary was received (Flaherty, 138). The inverse would be true when evaluating neophytes’ job satisfaction. Job satisfaction has been higher when fixed salaries were offered the establishment stage; they have been lower when they were paid on full commission compensation and higher still if paid a fixed salary. Job satisfaction for these salespeople was significantly higher when they were paid strictly on commission and lower when they were limited to a fixed salary (Anonymous, 1987; Anonymous, 1998; Anonymous, 2004; and Caballero, 1988).

FIGURE 4, has shown the average salary for sales persons for the year of 2002. This chart has depicted explorators to achieve less sale revenues and their contribution margin, to be expected, was not as high as the established sales representatives. As neophytes will evaluate their salary as compared to more senior sales persons it is likely that a dramatic metamorphous will occur causing the neophyte to transform into a higher performing salesperson along with an insatiable money-hungry demeanor. This phenomenon has created a plausible sign that the work level would have increased and the job satisfaction for these salespeople will have been higher when paid on full commission compensation and lower when they were paid strictly on commission.

The next survey presented in TABLE 2, depicted the average compensation among sales persons during the year 2001, pointing out changes in pay totals and how this was forcing managers to reevaluate their compensation plans. Respondents were asked to provide their own compensation information along with that of their low-level performers (neophytes).
Taken all of the above into consideration, the neophyte transition to the establishment stage has been considered to be the most exciting time period of their careers. During this stage of their career, “…salespeople would be concerned with salary increases, promotion, achieving success, and (in light of their interests in a long-term relationship with their firm) job security (Flaherty, 135).” Since these sales persons were more involved and took more ownership in their work, salespeople in the establishment stage would have lesser turnover and higher performance levels than those in the exploration stage. In support of this aforementioned statement, Flaherty wrote, “Salespeople in the establishment stage exhibited greater involvement in their work, and they experience greater job success (Flaherty, 136).” The net position of this relationship between higher sales and greater interest in commission-based earnings would become more apparent as the salespersons’ higher efforts and greater sales revenue generation could no longer achieve financial satisfaction within a fixed salary structure.

LITERATURE REVIEW

(Presented in APPENDIX-A)

RESEARCH METHODOLOGY

The four principal research questions were:

When hiring inexperienced sales persons:
1. Which of the two sales compensation plans would be the most palatable and
2. Which plan would be better in preparing those persons for a meaningful long-term career in sales?

When hiring experienced sales persons or developing sales persons beyond the neophyte stage:
3. Which of the two sales compensation plans would be the most beneficial and
4. Which plan would be the better in supporting those persons towards the continuation of meaningful long-term career in sales?

HYPOTHESES:

H0: Today’s 21st century neophytes (2 years or less in a large firm, level five B2B sales status) tend to favor commission-based compensation over fixed salary due to a confidence that they will meet, if not exceed their respective company’s sales quotas, to which they feel would exceed a typical full salary offer for the same type of job and effort.

H1: It is postulated that firms who modify their salary and commission program(s) to adjust to the changes from sales neophyte to more established sales mature professional persons will experience a reduced level of turnovers.

H2-a: As expressed by neophyte B2B salespersons, it is postulated that there exists a distinctly positive correlation between risk aversion and fixed-salary compensation.

H2-b: It is postulated that there exists an inverse correlation between reductions in risk aversion over time and desire for higher earnings, usually derived from commission-based salary.

H3: Can past research confirm that the ‘Agency Theory perspective’ and risk attitudes of salespersons help to determine how to compensate different levels of risk-averse sales persons?

H4: Does a correlation between degrees of risk including, risk-averse, risk-neutral, and risk-loving sales agents?

H5: It is postulated that there exists both qualitative and quantitative links between sales training programs, in terms of levels of personal and professional attainment and the fast ramp up speed of the salesperson to increase their sales while reducing turnover. As such, would it become plausible to follow an excellent sales training with a commission-based program for neophytes?

H6: Is there a distinct model or theory that can shed a light on risk attitudes of salespersons and commission programs that may help to determine how to compensate different levels of risk adverse of B2B sales persons?

H7: Will organizations that are interested in a faster ramp-up of sales development for neophytes significantly invest money, time, and human resources in their sales training programs?

RESEARCH LIMITATIONS

Overall, the basis of the qualitative research has left a few fissures necessitating primary research examination. This study did not address salary differentials between men and women as well as the potential differences in behavior of risk management. In addition, this study did not address B2C sales compensation relationships. Nor did this study address the vast array of behavior factors that humans experience in today’s work environment. However, a development of several survey questions as a foundation of the primary investigation may help to address some of these gaps. Considering this economically trying era, would salespersons desire somewhat of a reversal in sales compensation (from commission-based back to salary-based, recognizing the overall earnings would also be commensurately reduced? This would be a question for future research. A new study may want to set forth a questionnaire with the following inclusions and parameters:
- SALES PERSONS FROM INDUSTRIAL B2B COS. AS COMPARED TO B2C FIRMS
- YEARS IN SALES DELINEATED (1-2, 3-5, BEYOND)
- COMPENSATION PLANS (COMMISSION BASED; SALARY BASED; COMBINATION; PHASED IN TRANSITION FROM FULL SALARY TO PARTIAL COMMISSION TO FULL COMMISSION)
- DETERMINE LEVELS OF ANXIETY & STRESS
- FINANCIAL RISK ASSESSMENT

**RESEARCH FINDING**

**Addressing H1:** Previous research has suggested that an earlier sales career stage may be compromised in terms of both sales performance and motivation levels. Research has also shown that there would need to be a system in place for managers to have dealt with the changes in attitudes and the movement through the career stages. This would allow sales managers to better understand their salespeople relative to their abilities as they progress through the various career stages.

**Hypothesis H1** has additionally questioned the relationship between forms of compensation mix and job satisfaction, again, based upon stages within a sales career. During exploration stage, the neophyte would primarily be concerned with making a lifelong commitment to a particular occupation. Cron has explained that the exploration-stage people were most critical of their jobs and managers. These negative attitudes were reflected in their low performance on average vis-à-vis other salespeople. This stage was followed, in time, by a desire to establish themselves in their present capacity, which prompted them to increase their performance. During this stage it also, in turn, lead to an increased focus towards his/her job satisfaction (Cron, 17).

Years back, this was your author’s personal situation when joining IBM, having just completed my Bachelors and Masters over consecutive years while having amassed a tremendous amount of college loans with very apprehensive feelings about taking on a ‘sales’ job to which income would be volatile. Thanks to IBM’s training program and field management, I slowly became more and more confident that I could achieve both personal goals as well as financial needs.

Previous authors have pointed out that a salesperson chooses a compensation plan based on the level of aspiration to which he/she decides compared to other compensation opportunities. Those agents (salespersons) who have a higher degree of ambition and ability would most likely choose a variable pay compensation plan (Cadsby, Song & Tapon, 2007). This research determined that employees under a variable compensation scheme were more likely to contemplate leaving their jobs if they were more averse to risk. Since fixed salary offers a certainty of financial outcome, while pay for performance involves financial uncertainty, the latter does expose an agent to risk (Cadsby et. al., 389). Those who were risk averse would choose a fixed salary, because of the least amount of financial uncertainty involved. Overall, when an agent whom was exposed to a high risk situation, when that agent chose pay for performance (commission only), because of the elusiveness of the pay plan and the insecurity of not knowing one’s potential achievement. Clearly, institutional ‘choice’ seems to have been the underlying basis of Cadsby’s argument. And, since neophytes have not had the experience of surpassing quotas they do not know what level of work would be needed or if they can even achieve those company set quotas. Karen Flaherty had stated, “Given the high level of uncertainty, salespeople in exploration are likely to have low expectancy and instrumentality estimates. Salespeople may not feel that if they increase their efforts they will increase their performance and, also, if they increase their performance the $ y $ will increase the rewards they will receive. In light of this, salespeople in exploration are expected to reject a compensation mix favoring incentive pay, resulting in reduced levels of job satisfaction and increased turnover intentions. However, if paid a fixed salary, the concerns of the salespeople may be alleviated (Flaherty, 136).”

Remembering back to your author’s IBM salary negotiation prior to joining the firm, your author had quite adamantly expressed my concern over the prospects of a heavily laden commission plan. It turned out that IBM’s extensive experience in hiring sales neophytes had already taken into consideration my needs for a hefty fixed salary plan for the first year, then a combination compensation thereafter, which would be still be annually reviewed and discussed with my management.

In another source, Alex Runner explained, “Traditionally, companies start inexperienced salespeople, or sales ‘rookies,’ on a salary and slowly wean them onto commission. 31 percent of companies pay entry level salespeople a straight salary with no commission, while an even greater number, 41 percent, use a pay scale that combines salary and commission compensation. Only 11 percent start inexperienced salespeople out on full commission…Survey results showed that 54 percent of companies pay their veteran salespeople on full commission (Runner).” It has become abundantly clear that these neophytes were justifiably concerned about what was to be expected of them within their new careers. They may have been anxious to get started with the rest of their career lives, but wanted to have a stable income while they were learning the ‘ropes’. This may be an additional reason as to why they preferred salary compensation over commission.
Within the exploration-stage, salespersons have not been able to recognize and rationalize that they will be rewarded for being effective performers, a concept yet to be experienced. Salespeople in this stage have a significantly lower instrumentality estimates on the sales quota factor, which is the most important performance measure for salespeople in this sample. The reason may be a belief that exceeding sales quotas was not always rewarded or uncertainty (reduced instrumentality estimates) about the chances for obtaining various organizational rewards for exceeding sales quotas was not always sufficient (Cron, 86). However, what was most interesting to have researched was that recently, within the past few years, 41% of U.S. firms have used a combination of salary plus commission/bonus with only 11% o firms using straight-commission compensation (Wotruba & Thurlow, 1976). So, it would seem that the majority of U.S. businesses have recognized the financial conundrum of their newer sales force as well as their desire to eventually achieve higher earnings.

Based upon an extensive set of supporting arguments, this author feels that H1 should be accepted.

Addressing H2-a: It was states earlier in this paper that research has shown that 93% of neophytes have exhibited some levels of risk aversion associated with their sales career and specifically effectively conducting the sales cycle. Out of the remaining 7%, 3.5% of neophytes are risk neutral while the other 3.5% are risk loving (Cadsby et.al.).

A risk averse employee would be, “...those who would rather have a smaller income whose magnitude is certain than an uncertain income that is somewhat larger on average but is subject to uncontrollable variability (Cadsby et.al. 389).” If choice would be available, a risk-averse sales agent would most likely to choose a fixed salary over variable compensation due to the risk involved of meeting a quota. Example: An individual selects a compensation contract on the basis of its perceived desirability compared to other available compensation options. Psychologists have noted that pay for performance is more attractive to those higher in cognitive ability and need for achievement.

In your author’s case, your author had already worked for a few years, holding two associate degrees in engineering, as a junior civil engineer prior to joining IBM. Therefore, a familiarity with corporate institutions was somewhat better understood and therefore less ‘prickly’ than the typical neophyte joining a firm right out of college. None-the-less, it was an awesome eye-opening experience from day one until your author left the company.

Variable pay should stimulate a higher performance if the financial reward equals or exceeds the risk taken on and the level of performance the sales agent would incur. If the monetary reward was adequate enough compared to the achievement then it should be worth the high effort of performance. The sales agent must also distinguish that the more effort they put into their performance the higher value the firm would be place on their pay. In addition, a more risk-averse person assigned to a pay-for-performance system with its uncertain payoffs one might well experience considerable discomfort and stress compared to a less risk-averse person (Cadsby et.al. 391). Due to vague payoffs, a risk-averse sales agent could possibly experience more distress in comparison to a less risk-averse salesperson. Along the same line of thinking, Cadsby stated that individuals who expect to perform poorly are almost certain to choose fixed salary, regardless of their risk aversion levels. In contrast, those who expect to perform well will be more subject to risk aversion effects, as they have a rational basis for choosing pay for performance that could be undercut by fear of failure under such a plan (Cadsby et.al. 390).

<table>
<thead>
<tr>
<th>Risk Averse</th>
<th>Compensation Type</th>
<th>Significance test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Salary</td>
<td>Incentive</td>
</tr>
<tr>
<td>n=66</td>
<td>n=48</td>
<td>n=18</td>
</tr>
<tr>
<td>turnover</td>
<td>1.80</td>
<td>3.12</td>
</tr>
<tr>
<td>satisfaction</td>
<td>4.09</td>
<td>3.41</td>
</tr>
<tr>
<td>motivation</td>
<td>3.93</td>
<td>3.53</td>
</tr>
<tr>
<td>performance</td>
<td>4.01</td>
<td>3.53</td>
</tr>
<tr>
<td>stress</td>
<td>3.01</td>
<td>3.32</td>
</tr>
<tr>
<td>Risk Seekers</td>
<td>n=148</td>
<td>n=83</td>
</tr>
<tr>
<td></td>
<td>turnover</td>
<td>2.31</td>
</tr>
<tr>
<td>satisfaction</td>
<td>3.70</td>
<td>4.50</td>
</tr>
<tr>
<td>motivation</td>
<td>3.63</td>
<td>4.20</td>
</tr>
<tr>
<td>performance</td>
<td>4.00</td>
<td>4.16</td>
</tr>
<tr>
<td>stress</td>
<td>2.99</td>
<td>3.20</td>
</tr>
</tbody>
</table>

A slightly different perspective was offered from dissertation written by Karen E. Flaherty from University of Massachusetts. She addressed the well-known concept Agency Theory and the level of risk aversion but uniquely applied the theory to sales.
persons. Flaherty stated that the preference for commission versus fixed salary may be moderated by risk attitudes. She also states that when a salesperson was a risk seeker, "...output-based pay would lead to significantly higher levels of satisfaction and lower levels of stress and turnover intentions, than behavior-based pay (Flaherty, 2000)." TABLE 3, has described the means of the outcome measures – compensations type times risk preferences. Among salespeople who would be considered risk seekers, turnover intentions would likely be higher when salary was received (M=2.31), rather than incentive pay (M=1.18). Also, satisfaction would be higher for those paid on incentive (M=4.50) than for those paid on fixed salary (M=3.70). Motivation was higher for the incentive group (M=4.20) than for the salary group (M=3.63) (Flaherty, 2000). The aforementioned table has helped to identify risk attitudes toward incentive pay, and shows that motivation and satisfaction is higher, while turnover is lower than those who are on fixed salary compensation.

As there seems to be ample researched information supporting hypothesis H2-a, the author considers this hypothesis to be accepted.

**Table 4: Hypotheses Regarding the Choice of Sales Force Control Systems**

<table>
<thead>
<tr>
<th>Factors Influencing the Control System</th>
<th>Ouchi's Theoretical Approach</th>
<th>Agency Theory</th>
<th>TCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncertainty of the environment</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Company Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the sales force</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Management's willingness to assume risk</td>
<td></td>
<td>Outcome</td>
<td>Behavior</td>
</tr>
<tr>
<td>Measurability of outcome</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Measurability of behavior</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Knowledge of transformation process</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Salesperson Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transaction specificity</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Risk aversion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness of selling effort</td>
<td></td>
<td>Outcome</td>
<td></td>
</tr>
<tr>
<td>Minimum utility requirement</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Interaction Effect</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Uncertainty x transaction specificity</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Behavior = sales force control system should be behavior-based. Outcome = sales force control system should be outcome-oriented.

Addressing H2-b: Agency Theory as well as Ouchi’s Theoretical Approach compares and contrasts where and how behavior and outcome control systems can take place. Ouchi and Maguire’s study revealed that one may expect an increase in outcome-based control as the company gets larger. This was due to the manager’s increasing need to provide legitimate evidence of performance with increasing company size. In a personal selling setting, this would mean that it would be easier for a sales manager to use output measures as a sales force becomes larger (Rylander, 2007). As the organization grows it would seem that it must provide substantial evidence of what the sales agent has accomplished or provide justifiable evidence of performance. In the above TABLE 4, a control system should be utilized depending upon such factors as, size of the sales force, measurability of outcome, measurability of behavior, and effectiveness of selling effort. IBM offered all of their marketing reps an extensive monitor and control system designed to protect the employee and the firm, which was most reassuring.

Based upon the contributions of various researchers in this area, there seems to be sufficient credible evidence to support (accept) hypothesis H2-b.

Addressing H3: Essentially, the concept of the Agency Theory would mean that there exists a distinct relationship between the principle (firm) and the agent (respective sales person(s)). It would assume that the interest of the principle and the agent have divergent goals and different risk attitudes. So the Agency Theory would focus on designing compensation and control systems (behavior-based control system and outcome-based control system) so that it can realign the incentives of both parties and therefore aim towards the same outcome. A control system would be defined as, “…an organization’s set of procedures for monitoring, directing, evaluating, and compensating its employees (Anderson & Oliver, 1987).” The Agency Theory clearly has been an important tool used in directing an organization towards viewing a sales person who may be risk averse, depending upon the level of capability. As such, a control system and compensation scheme should be determined for the sales person at hand.
In a sales organization such Agency Theory systems influence employee behavior, ideally in a way that should enhance the welfare of both the firm and the employee. In an outcome based control system: relatively little monitoring of salespeople by management should be involved, relatively little managerial direction or effort to direct salespeople should be involved, and straightforward objective measures of results (outcomes), rather than measures of the methods salespeople use to achieve results, would be used to evaluate and compensate the salesforce (Anderson et.al. 76). Without holding to the above-mentioned principles, the concepts of Agency Theory and a behavior-based control system would not likely hold true.

Due to little managerial monitoring and direction of a salesforce, an outcome-based control system would be geared towards a less risk averse sales agent. With little to no supervision a sales agent would be measured upon a clear-cut set of objectives, which in turn should lead to a compensation based on achievement. This would correspond to the Anderson and Oliver study which stated, “Outcome-based control approximates a market contracting arrangement wherein salespeople are left alone to achieve results in their own way using their own strategies. Salespeople are held accountable for their results (outcomes) but not for how they achieve the results (inputs or behavior)” (Anderson et.al. 76).

Your author’s personal experience with this concept was quite different from the experience with IBM and then later with Chase Bank Information Services Division. IBM was straight forward in that the plans were well documented and constantly being reviewed and, when needed, adjusted. Chase sales plans changed without notice and placed your author’s sales people were in higher states of concern as they felt that they may be taking on more risks without the added just compensation.

Table 5: Agency Theory

<table>
<thead>
<tr>
<th>Variable</th>
<th>Theory</th>
<th>Transaction Cost</th>
<th>Cognitive Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Variables</td>
<td>Agency</td>
<td>Organization</td>
<td></td>
</tr>
<tr>
<td>High demand uncertainty</td>
<td>Behavior</td>
<td>Behavior</td>
<td>Outcome</td>
</tr>
<tr>
<td>High sales volatility</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High volatility, nonspecialized</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>reps</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High volatility, specialized reps</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willing to assume risk</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small salesforce size</td>
<td></td>
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<tr>
<td>Humanistic atmosphere</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome measurement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impossible</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inaccurate</td>
<td>Behavior</td>
<td></td>
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</tr>
<tr>
<td>Objective</td>
<td>Behavior</td>
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<tr>
<td>High cost</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior measurement</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult/expensive</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transaction process</td>
<td>Outcome or clan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>unknown</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational feedback</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controlling feedback</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salesperson Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goal congruence</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk aversion</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High sales “expectancy”</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience/specialization to</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>firm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic motivation</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>preference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extrinsic motivation</td>
<td>Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>preference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Other Circumstances</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Anderson and Oliver concluded that if a salesperson was risk neutral (willing to select the option with the highest expected value regardless of risk), an all-commission system would be recommended (Anderson et.al. 79). This would be where the agent or sales person needs little to no managerial monitoring, he/she can achieve their objectives in any which way they choose, therefore the sales agent’s level of risk aversion would end up being very low. Look now at TABLE 5 that depicted the conclusions of how to compensate a sales force based on the Agency Theory, which “Predicts that behavior control would be used when measuring outcomes and when uncertainty puts the salesperson at risk. “Outcome control would be used when measuring outcomes, which was less expensive than measuring inputs and when environmental uncertainty would be low” (Anderson et.al. 80).

Based upon a substantive set of theories applied to this hypothesis, H3 has been accepted.

Addressing H4: Research has been conducted focusing on the correlation between degrees of risk including, risk-averse, risk-neutral, and risk-loving sales agents. Higher levels of productivity would be associated with a higher probability of selecting pay
for performance. The second factor was each participants risk aversion, as measured by the lottery mechanism- the participants were highly risk averse, with 93 percent exhibiting some degree of risk aversion; of those remaining, 3.5 percent were risk neutral, and another 3.5 percent were risk loving (Cadsby et.al. 394).

Although there seems to be some researched evidence that supports this hypothesis, the author does not feel it is sufficient to support Ha4’s contentions; as such hypothesis H4 would be neither accepted nor rejected.

Addressing H5: Sales training that encompassed a thorough knowledge of the product and a how-to approach to sales has been suggested to be essential to the financial growth and employee stability of a company. According to the research sighted, training over the period of 3 to 9 months at a minimum cost of $20,000 per individual has provided U.S. companies with a substantial growth in profit. Training also has helped minimize turnover within the sales force. According to the Leach and Wesley study, only 30% of US companies provide sales-training. The article sightings suggested a rather positive outlook on the sales industry. Unfortunately, much of what would be called ‘sales-training’ was nothing more than familiarizing the sales rep with the product to be sold. Despite this evidence of the majority of firms, those few companies who do offer training seem to still be experience increased productivity in this 21st Century, which further supports the importance of a training program.

Recent statistical data reflected that U.S. companies spend $7.1 billion annually on training salespeople and an average salesperson spends more than 35 hours per year in training. In technical markets, the cost associated with the development of just one salesperson were often in excess of $100,000, and because of high initial costs, it may have taken as long as two years before profit is realized from a new sales hire. As such, understanding how sales training aids salespeople effectiveness would be of critical importance to selling firms. The consortium for Research on Emotional Intelligence in Organizations estimated that eight million people undergo training annually at a cost of over $12 billion. And, the cost of providing these programs to the sales force may have been as high $1.7 billion dollars annually (Leach & Wesley, 2005).

Research showed that nearly 42 percent of firms reported needing six to twelve months of training to prepare the sales agent. This substantial number of months suggested that in order for firms to advance its sales programs it would have been essential to have invested much time in training new salespersons to assure short-term and long-term success for the company. However, according to the Cummings study, businesses that have offered intensive sales training program have actually brought new reps up to speed in one or two months. (The company’s annual sales reached nearly $135 million just recently, up more than 14 percent.) That reflected a striking difference from the speed most companies see: In S&MM’s survey, 80 percent of respondents said a minimum of three months was needed to fully prepare reps, and 42 percent reported needing six to 12 months to do so. It was because of this training, wrote Cummings, that the company was never troubled by vacancies within its sales team because of the ramp-up expediency of the neophytes (Cummings pg. 3).

IBM’s sales training program lasted one year for your author and other sales neophytes. It was estimated to have cost IBM close to 1 million dollars per person. Now, that was an investment!

One novel approach, offered by Cummings, was to circulate new sales employees between several different occupations of a firm as it would build not only the salespersons knowledge of the company and what they are about in terms of their respective skill level(s), but also it would ultimately prepare them for the selling environment sooner enabling them to have a taste for the level of rigor that is involved with the career they embarked upon. By doing this it would also help the firm to weed out persons who could not meet what the job entailed (Cummings, 4).

Researcher Edwards offered the example of the Altera Corporation, which since 2002, Altera corp. CEO John P. Daane has spent nearly $11 million on training, using self-proclaimed ‘empathy consultants’ to help his sales force identify with customers' situations, feelings, and motives. Over an extended period of time, training was considered to have been the key element of a healthy, growing sales force. “A company must be willing to invest the time and money necessary to the development of a training curriculum that not only presents its product to a new hire, but also equips him with the tools of the sales trade (Edwards, 2006).”

There seems to have been sufficient evidence to support (accept) H5.

Addressing H6: The strongest method to address H6 would be the concept of agency theory, which focuses on designing compensation and control systems (behavior-based control system and outcome-based control system) so it could realign the incentives of both parties so that they aim at the same outcome. A control system would be defined as an organization’s set of procedures for monitoring, directing, evaluating, and compensating its employees (Anderson et.al 76). The agency theory
would be an important tool used to direct an organization's compensation scheme towards specific sales persons who are likely to be risk averse, depending upon the level of capability a control system.

In an outcome based control system: relatively little monitoring of salespeople by management was involved, relatively little managerial direction or effort to direct salespeople was involved, and straightforward objective measures of results (outcomes), rather than measures of the methods salespeople use to achieve results, would be used to evaluate and compensate the salesforce (Anderson et.al 76). With little to no supervision a sales agent would be measured upon a clear-cut set of objectives, which in turn should lead to a compensation which would be based on achievement. Suggested by Anderson and Oliver, an outcome-based control would be one where the sales agent would most likely be placed under a variable pay scheme. Each sales person would be held accountable for his/her own outcomes, and would be compensated under a commissions program (Anderson et.al 77). Shifting risk to the sales person ultimately shifts the probability of the outcome on them as well, whatever the outcome may be the firm also takes part in the rewards or incentives that the sales agent attains.

The agency model addressed the risk-bearing preferences of the firm and the salesperson. The firm had two choices about the allotment of risk in the selling environment; an outcome-based control system is one of the two. “If a salesperson was risk neutral (willing to select the option with the highest expected value regardless of risk), an all-commission system would be recommended” (Anderson et.al. 79). This would occur where the agent or sales person needs little to no managerial monitoring, as such, he/she could achieve their objectives in any which way they choose, therefore the sales agent’s level of risk aversion would be very low.

Table 6: Hypothesis regarding Choice of Sales Force Control System

<table>
<thead>
<tr>
<th>Factors Influencing the Control System</th>
<th>Ouchi’s Theoretical Approach</th>
<th>Agency Theory</th>
<th>TCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty of the environment</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the sales force</td>
<td>Outcome</td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Management's willingness to assume risk</td>
<td>Outcome</td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Measurability of outcome</td>
<td>Outcome</td>
<td>Outcome</td>
<td></td>
</tr>
<tr>
<td>Measurability of behavior</td>
<td>Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of transformation process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salesperson Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transaction specificity</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Effectiveness of selling effort</td>
<td></td>
<td>Outcome</td>
<td></td>
</tr>
<tr>
<td>Minimum utility requirement</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Interaction Effect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncertainty x transaction specificity</td>
<td></td>
<td>Behavior</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Behavior = sales force control system should be behavior-based; Outcome = sales force control system should be outcome-oriented.

Look now at TABLE 6, which has categorized this phenomenon in outlining which control system should be utilize depending upon such factors as, size of sales force, measurability of outcome, measurability of behavior, and effectiveness of selling effort. A behavior-based control system would be intended to gear towards the risk adverse sales agent, who was monitored by administration and is most likely on fixed salary compensation. Anderson and Oliver stated, “Behavior-based control system: considerable monitoring of salespeople’s activities and results is involved, high levels of management direction of and intervention in the activities of salespeople are involved, and subjective and more complex methods based largely on (1) what salespeople bring to the selling task (e.g., aptitude, product knowledge), (2) their activities (e.g., number of calls), and (3) their sales strategies, rather than sales outcomes, are used to evaluate and compensate the sales force (Anderson & Oliver, 1987).” Salespersons knowledge, activities and strategies would be the basis of evaluation in terms of compensating the risk adverse sales agent. Active managers, backed by a significant management information-gathering staff, would vigorously monitor and direct the operations of the salesforce. Managers typically have had a well-defined idea of what they want salespeople to do and work to ensure the salesforce behaves accordingly (Anderson et.al. 77). When risk is assumed in a sales agent by the firm, typically the supervision increases and managers follow the agent’s performance to make sure they are achieving what is
necessary. This system would appeal to the sales agent, who would usually assumed to be risk averse whereas the firm would assumed to be risk neutral" (Anderson et al. 79).

High risk was a norm at Chase Information Services Division during my sales management career. It was understood that many of the sales persons and new sales managers would not survive. Your author was uncomfortable with the program from day one and although the combined compensation was substantial exceeding 6 figures after my first year with them, your author remained uncomfortable throughout the entire employ with Chase.

John and Weitz wrote, “A greater role for salary is suggested for salespeople operating in an uncertain environment. Salary is needed to maintain income continuity (reduce risk) when salespeople are confronted with volatility due to seasonality or uncertain economic environments, when they have little experience with the job, or when they are engaged in selling new products or new customers (John & Weitz, 1989).” These thought have been widely published (Joshi, Liao & Jackson, 2004; Mantrala, Sinha & Zoltners, 1994; Steinbrink, 1978; Ghosh & John, 2000; Lai & Staelin, 1986; and Coughlin et al. 99).

Based upon the aforementioned researched evidence, Hypothesis 6 was accepted.

Addressing Hypothesis H7: Research has pointed out that sales training, which encompasses a thorough knowledge of the product and also a how-to-approach towards effective sales techniques, have been considered to be key elements towards generating financial growth and employee stability of a company. Thorough sales training programs have also assisted in minimizing turnover within the sales force. Consider a case story, offered by Cummings, which clearly exemplified the value of quality sales training:

The company offers a sales training program so intensive it brings new reps up to speed in one month. (The company's sales reached nearly $135 million last year, up more than 14 percent.) That’s a striking difference from the speed most companies see: In S&MM's survey, 80 percent of respondents said a minimum of three months is needed to fully prepare reps, and 42 percent reported needing six to 12 months to do so. It's because of this training, Parker says, that the company is never troubled by vacancies within its sales team. At any given time, the company has 20 new hires on what the organization calls "the bench," where, for 12 to 16 weeks, reps learn about the company from the ground up by working in warehouses, shipping, and other areas that help them gain product knowledge before they ever sell. Once a week they conduct sales role-playing sessions with a regional trainer or sales manager. During those first few weeks, "if we decide they're not for us then they go," Parker says. The move avoids the costly error of putting a new seller in the field who can't hack it (Cummings, 3).

By circulating new sales employees between several different occupations of a firm, it would potentially build not only the salespersons' knowledge of the company while enhancing their broadened base skill level, but it also ultimately prepares them for the selling environment so that they have a taste for the level of rigor that would be involved with the career they will be embarking upon. By going through this process it would also help the firm to weed out persons who could not fully understand what the job entails.

"We're one of the few companies that train salespeople before we have a need for them," Parker says. "But in our business, we can't afford to wait until a rep leaves and then start to recruit and train them in a position. The training program is very costly" she says. Reps in training, which aren't bringing in sales, get paid as much as $40,000. "But the investment strongly outweighs that cost," adds Parker, who says the company receives 300 résumés each month (Cummings, 4).

Companies have realized that a rigorous sales training program would be an essential factor in the overall sales and marketing programs. It would seem that companies whom considered the cost and time dedicated to developing an effective training program as an investment factored into their overall profit (Corbo & Kleiner, 1991; Webster, 1966; and Sykes, 2007). The next case study example offered by Posner focused its attention on salary management for the new sales employees:

PSS invests anywhere from $20,000 to $25,000 in an aspiring salesperson during his or her first 18 to 24 months. That figure includes the salary earned during the initial months and the support received during the subsequent year, when the salesperson is still a cash drain on the business until he or she is on full commission (Posner, 1989).

If these new employees would put forth the knowledge and skill-development that was acquired in their training programs as well as learn how to build long-term internal relationships with their fellow employers, the company clearly would set itself along a winning path. Consider another case example that recognized its top performing sales forces through tailoring the training based upon four areas: content, source, length, and method:

Top sales forces train differently in four areas: content, source, length, and method. Top performing sales force managers provide 3 to 9 months of training for new salespeople while their low performance counterparts provide less than 3 months of training. Also, top sales force managers broaden the methods, sources, and content of training. Data suggest that training new salespeople under 3
months is inadequate and training over 9 months is unnecessary. Training new salespeople under 3 months carries high penalties. It substantially reduces the chances for a sales force to gain top performance ranking. Training over 9 months does not substantially increase the chances of the sales force to gain a higher performance ranking. Factor analysis is a statistical tool used to reduce a large number of variables into component categories, clusters, or "factors." All training content variables were factor analyzed to find out which training categories or modules emerge. When we combined training content data for sales forces in all performance groups, five key content areas emerged for new salespeople's training (El-Ansary, 1993).

The assumption that training for a maximum of 9 months produces successful results was further supported in the next case examples. These examples not only supported the quantitative aspect of the training, but also suggested the qualitative features of the training process:

ASTD estimates that only 30 percent of U.S. companies provide sales training, despite a marked increase in productivity as a result of selling skills-related training. But to many experts, 30 percent is optimistic. "Thirty percent seems incredibly high to me," says Sam Parker, co-founder of JustSell.com. "And most training deemed sales training is nothing more than delivering product knowledge. It's not teaching the skills to move to closure." Out of a U.S. $57.9 billion corporate training industry, only 14 percent or U.S. $8.1 billion is spent on sales training, according to JustSell.com's research. Most salespeople are still learning at the School of Hard Knocks (Atuahene-Gima, Kwaku & Haiyang Li (2006); Honeycutt Jr., Earl D., Clide E. Harris Jr. & Steven B. Castleberry (1987)).

A survey was conducted by the Dartell Corporation in 1992 to determine the cost of training and their time frame in training. Results have been presented in Table 9. Without question, B2B sales training should be comprehensive. It should give the rep a thorough knowledge of the product he or she will be presenting to a potential buyer. The new rep should be able to know his/her way around the administrative offices, production centers, and warehouses, as well as having gained familiarity with the transporting of the product(s) and clearly understood the products' and their respective attributes. Having amassed this knowledge would enable the rep to present the product(s) and related services with confidence. It has been well understood in the industrial selling environment that success produces confidence and confidence sells products.

Table 9: Cost of Training Graph

<table>
<thead>
<tr>
<th>CO. SIZE</th>
<th>TRAINING PERIOD (Months)</th>
<th>1990</th>
<th>1992</th>
<th>1990</th>
<th>1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $5M</td>
<td>2.9</td>
<td>3.9</td>
<td>$3,975</td>
<td>$5,530</td>
<td></td>
</tr>
<tr>
<td>$5M-$25M</td>
<td>4.3</td>
<td>3.7</td>
<td>$6,100</td>
<td>$6,227</td>
<td></td>
</tr>
<tr>
<td>$25M-$100M</td>
<td>3.8</td>
<td>3.9</td>
<td>$11,176</td>
<td>$8,083</td>
<td></td>
</tr>
<tr>
<td>$100M-$250M</td>
<td>3.5</td>
<td>3.0</td>
<td>$5,220</td>
<td>$3,750</td>
<td></td>
</tr>
<tr>
<td>More than</td>
<td>5.2</td>
<td>4.7</td>
<td>$4,671</td>
<td>$6,588</td>
<td></td>
</tr>
<tr>
<td>OVERALL</td>
<td>3.9</td>
<td>3.9</td>
<td>$6,096</td>
<td>$6,226</td>
<td></td>
</tr>
</tbody>
</table>

Source: Sales Force Compensation, Dartell Corp. 1992

Based upon the multitude of case study examples, Hypothesis-7 was accepted.

SUMMARY AND CONCLUSION

In conclusion, 7 of the 8 hypotheses (remembering that H2 had two components) were accepted, which was a strong indication of the supporting secondary information researched for this project.

It would seem abundantly evident that these research finding have implications for sales managers and sales executives, particularly those who have direct responsibility in designing sales earnings programs. To avoid problems with sales force job satisfaction, high turnover rates, and poor sales performance output, managers would need to be aware and understand the attitudes changes through the sales persons’ career stages. Managers would need to evaluate their prospective salespeople in terms of hiring those whose career concerns match those of the firm’s vision. For example, if the firm is in a cut throat industry and is competing fiercely with other companies they might want to hire people in the establishment stage. This will ensure that their employees will be hungry for money and be a high performer for the firm. Managers would need to communicate with their neophytes to let them know if this is the career for them or if they need to move from sales to another functional discipline/department within the company that is more suitable for their career needs and expectations (DeWitt, 2005; John & Weitz, 1989; Weinberg, 1975; and Winer 1973).

Training should be comprehensive. It should give the rep a thorough knowledge of the product he or she would be presenting to a potential buyer. As mentioned, one practice was to have been the new rep work from the ground up. If selling for a
wholesale food distributor, the new rep should be able to know his way around the warehouse, be familiar with the transporting of the product and know the product and its attributes. Having this knowledge enables the rep to present the product along with the servicing involved with confidence (Darmon, Rigaux-Bricmont & Balloffet, 2003).

Equipping a new sales hire with the tools of selling will, as all of the sightings imply, yield a larger return than the cost involved. By preparing a hire to deal with the target market of that company, and by giving the inexperienced rep a working knowledge of the product, the company is placing itself and the rep in a position for a successful sale. Success produces confidence and confidence sells products. The motivation to achieve higher and higher goals was produced by this success weather it the sales was commission based or not.

One of the more important directives for sales managers should be to insure that there are systems in place to accommodate salespersons that are moving between career stages. If an explorator was ready to be 'established' in the company, there needs to be rather expediently implementable mechanisms in place to support this movement. Companies would need to have a system of salary plus bonuses to facilitate this kind of transition, until the salespersons were ready for a strictly commission compensation plan.

Today’s 21st century neophytes, in the exploration stage of their large firm selling career, in consideration of avoiding financial risks, would tend to favor fixed salary over commission. This would be primarily based on the need to meet college debt obligations, on average equaling $27,600 of financial responsibilities along with the fear and uncertainty of not meeting sales quotas and/or being financially unstable during the first two years of their sales career. This research has shown that there exists a distinct view/perspective/need for B2B neophytes to achieve a personal financial balance of an acceptable fixed-salary prior to comfortably taking on a commission-based salary program (Raju & Srinivasan, 1996).

On the other side of this situation, firms need to have systems in place to bring members of the sales force up for evaluation to see if they would be ready for a more incentive based compensation mix. If the salesperson was not meeting a predetermined level of performance and was still not ready to be established in the company, the firm needs to have mechanisms in place to deal with this situation by answering these key questions, 1) Should this/these person(s) receive more training? 2) Should they be able to remain on the present salary plan until their next evaluation? or 3) Should they be fired?

Based upon the research conducted, this last chart brings for a comprehensive plan that should recognize the needs of the neophyte throughout his/her stages as a B2B sales person:

<table>
<thead>
<tr>
<th>Sales Period</th>
<th>Training Period</th>
<th>Compensation Salary % / Commission %</th>
<th>Evaluation Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 9-12 mos.</td>
<td>9 mos.</td>
<td>100 / 0</td>
<td>every 3 mos.</td>
</tr>
<tr>
<td>1-2 years</td>
<td>periodic</td>
<td>80 / 20</td>
<td>every 6 mos.</td>
</tr>
<tr>
<td>2-5 years</td>
<td>periodic</td>
<td>50 / 50</td>
<td>annually</td>
</tr>
<tr>
<td>5 – 10 years</td>
<td>periodic</td>
<td>30 / 70</td>
<td>annually</td>
</tr>
<tr>
<td>10+ years</td>
<td>periodic</td>
<td>20 / 80</td>
<td>annually</td>
</tr>
</tbody>
</table>

Over a period of 20 years, I worked in sales and sales management capacities for 3 sales- and market-drive companies, IBM, Chase Bank Information Services, and Anthony Industries. All three of these companies was well respected in the industry and considered strong competitors. One firm was very well prepared to deal with the neophytes with a viable monitor and control systems and a flexible salary program that made it easier to transition from full salary compensation at the initial stage to a gradual commission and base salary structure as I and other neophytes progressed with the firm. Another firm, although offering a sizable income for sales and sales management positions, was at times ruthless and unforgiving for most all of its sales staff to include its rookies. And still another firm literally had no idea how to handle its new employees, even though some of us were hired in at the mid-management level of Regional Sales Managers. The first company was truly a joy to work for; the next filled my pockets but gave me ulcers; and last ended up in a class-action law suit that I and my fellow managers won.

As a former sales person, sales manager and marketing manager, your author can attest to the useful value of this area of research and the need for it to continue.
APPENDIX-A

LITERATURE REVIEW

1. Career Stages
The following journal articles were used as secondary research for developing hypotheses Ha1, Ha2, and Ha2-1. The information obtained from this data was used to determine career stages of neophytes and which method of compensation they would prefer.


2. Risk Aversion and Agency Theory
The following journal articles were used for our research through secondary data. These journal articles apply to hypotheses Ha3 and Ha3-1. The next groups of articles address risk aversion of an inexperienced sales person and importance and usage of Agency Theory.


3. Training
The next group of articles addressed employee sales training through secondary information. This data has shown how new employees are trained within a level five (most complex) business-to-business sales organization as well as how much money certain companies are spending on their sales employees.


4. Sales force Compensation
The following secondary information was obtained for measuring compensation levels for a new and inexperienced sales force. General knowledge information about compensation was obtained from reading these particular articles. Each compensation method, including straight-salary, straight-commission, salary plus commission and/or bonus and commission with certain portions guaranteed, was addressed.
• Sykes, Claire (June 2007). ay to Play, Learn How to Profitable Compensate Your Sales Staff. Wearables Business 49-51.
• (Joshi, Liao & Jackson, 2004; Mantrala, Sinha & Zoltners, 1994; and Steinbrink, 1978)

5. Motivation
This portion of our literature review was mainly addressing to our original three problem statements. The information below was more for gaining knowledge to coincide with our research than to be used throughout our paper.
• Doyle, Stephen X. and Benson P. Shapiro (May-June 1980). What counts most in motivating you sales force? Harvard Business Review. 133-140
6. **Dissertations**

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AN EXAMINATION OF THE INTERACTION OF PUBLIC AND PRIVATE LONG TERM CARE INSURANCE: PARADOX AND POLICY

Kimberly S. Davey¹ and Tom J. Sanders²
¹University of Alabama at Birmingham, USA and ²University of Montevallo, USA

ABSTRACT

The demand for long-term care (LTC) insurance should grow dramatically in the future due to aging of the U.S. population driven by a growing numbers of baby boomers with substantially longer life expectancies than prior generations and the availability of new technology and treatment modalities. The cost of LTC has been growing much faster than consumer inflation rates. Traditional insurance theory suggests that the demand for insurance should increase as an asset protection strategy as risk increases from escalating costs and as the population at risk grows. However, demand for private LTC insurance has been limited – substantially below expectations. A number of studies have examined this phenomenon. Interaction between public and private insurance markets is a major complicating factor. Medicare and Medicaid exert significant pressures suppressing demand in the private LTC market. Recent legislative changes such as the health care reform legislation of 2010 and the Community Living Assistance Services and Support (CLASS) Act may provide an opportunity to rationalize this paradoxical situation or further complicate it. This paper reviews research to date to explain the seeming paradox of weak demand for private LTC insurance and the impact of recent legislation and suggest key questions that need to be examined in future research to aid policy development to address this problem.

Keywords: Long-Term Care, Insurance, Medicare, Medicaid, Health Reform.

INTRODUCTION

By 2050 more than 20 million Americans over age 85 are projected to need long-term care (Oxford Analytica, 2007) versus 11.5-12.5 million in 2007 (Ng, Harrington, and Kitchener, 2010). Private long-term care insurance is a strategy for patients and families to manage the financial risk and healthcare costs associated with aging. Long-term care insurance has been defined as covering services that allow an individual to function independently either in the community (i.e. home) or in an institution (i.e. nursing home) (Kaiser Family Foundation, 2009a) versus health insurance that is defined as providing coverage for services ranging from preventive to acute care and provided in a variety of care settings. Long-term care services and supports assist individuals with performing instrumental activities of daily living (ADLs), including “assistance with eating, dressing, and toileting to assisting with managing a home, preparing food, and medication management” (Kaiser Family Foundation, 2009a). Both types of insurance serve as a means for individuals to minimize financial loss related to uncertain medical events. Total spending on long-term care totaled $190.4 billion in 2007 with Medicaid paying for the majority of services (42%), followed by Medicare (25%), out-of-pocket expenditures (22%), and private long-term care insurance (11%) (Hartman, Martin, McDonnell, and Catlin, 2007). The demand for insurance theory asserts, the greater degree of risk aversion and larger the size of possible loss, the greater the demand for insurance (Morrissey, 2008). Researchers are puzzled why only around 10% of individuals over age 60 have some type of private long-term care insurance policy (Brown and Finkelstien, 2009). Why is it that individuals, who are risk adverse and may have significant out-of-pocket expenses, related to long-term care, do not purchase private long-term care insurance? The purpose of this paper is to examine the role that public health insurance, including Medicare and Medicaid, plays in the private long-term care insurance market for individuals over age 65 to further understanding of the low level of demand for private long-term insurance and aid development of possible policy interventions. Relevant literature is reviewed next, followed by a discussion of findings, and then by conclusions and recommendations.

LITERATURE REVIEW

An extensive study of long-term care in the U.S. was conducted by Kaye, Harrington, and LaPlante (2010). These researchers assessed the size of the long-term care market, characteristics of individuals in the U.S. needing long-term care, the distribution of paid and unpaid care providers (i.e. family, friends), and individual and national long-term care expenditures. These researchers found that, while only 50% of total long-term care in the U.S. was provided to those over age 65 versus those under age 65, this represented four-fifths of long-term care expenditures. Most long-term care expenditures were made to long-term care institutions, most commonly nursing homes, while a substantial amount of unpaid care was rendered. It was estimated in 2007 that family members provided informal care, a form of community-based services, to an estimated 10-11 million people, while institutions provided care to approximately 1.5 million. Also, the study found that services provided in the community cost one-fifth of those provided in an institution.
In terms of long-term care expenditures, Kaye, Harrington, and LaPlante (2010) looked at sources of payment for services and found that Medicare and Medicaid were the primary payers followed by out-of-pocket payments by individuals. For approximately the first three months, Medicare paid for post-acute care or rehabilitation services and around the sixth month Medicaid became the primary payer. This movement through the payer system was based primarily on program eligibility and treatment coverage. The gap between Medicare and Medicaid payment was due to “spending down” assets on the part of individuals to meet Medicaid eligibility requirements. Further, the study found that individuals incurred 10.7% of out-of-pocket expenses during the first thirty days, 28.3% during the fourth through twelfth months, and 15.9% after three years. Medicare covered 20% of expenses initially until Medicaid eligibility requirements were met, at which point Medicaid covered 80% of long-term care expenses.

As the previous study by Kaye, Harrington, and LaPlante (2010) notes, Medicare and Medicaid play significant roles in the long-term care market. The two programs were developed to serve two different needs; however, today the lines of Medicare and Medicaid regarding long-term care are beginning to blur. Medicare was established in 1965 to provide hospital and physician coverage for individuals over age 65 and later those that were disabled. Medicare is a federal program and has evolved over the years to provide drug benefits and other forms of health coverage. Medicaid was established to provide health coverage to low income individuals, including children, the elderly, pregnant women, and individuals with disabilities. States manage Medicaid programs in accordance with federal laws and regulations (Morrisey, 2008). The interaction of private long-term care insurance with Medicare and Medicaid is complex.

Ng, Harrington, and Kitchener (2010) looked at the interaction of Medicaid programs and Medicare post-acute services. These authors found that there is a significant gap in the coordination of benefits between the two programs. Medicare pays for individuals that require skilled care for short periods of time ranging from physical therapy to hospice. If an acute event is not rehabilitated in the period covered by Medicare, individuals have to pay for long-term care with Medicaid, out-of-pocket, or with private insurance. These authors found that Medicare coverage for home health, hospice and nursing home care rose substantially between 1999 and 2007. Nursing home utilization increased from 32% to 88%, home health utilization increased from 15% to 59%, and hospice utilization increased from 110% to 229%. Additionally, the portion of nursing home services covered by Medicare increased from 23% in 1999 to 32% in 2007 and home health remained relatively unchanged over this same period at 80%. Post-acute care that was still needed shifted from the hospital to other community or institutional settings. Many states reported overloaded systems and in some cases waiting lists for community-based services. Medicaid’s primary expenditures, related to long-term care, were directed toward institutions (i.e. nursing homes) and not community-based services. This research indicates that currently Medicare’s involvement is limited and the burden of long-term care falls disproportionately on Medicaid. However, the need for long-term care is growing and Medicare is being called on to provide more support for post-acute events. The literature suggests that, with a poorly coordinated system, individuals face significant financial risks associated with long-term care (Ng, Harrington, and Kitchener, 2010).

A study by Kemper, Komisar, and Alexcix (2006) used a micro-simulation model to look at individual experiences and risks of those 65 and older regarding the length of long-term care utilization and long-term care expenditures. This study attempted to examine the long-term care risk individuals face. The researchers found that on average individuals needed long-term care for three years prior to death. In concert with the Kaye, Harrington, and LaPlante (2010) study, the researchers found that family or in-kind long-term care was significant and accounted for two-thirds of the long-term care provided. The study also found that public insurance (i.e. Medicaid and Medicare) was the primary means of paying for long-term care followed by significant out-of-pocket expenditures. The study also found that individuals age 65, in 2005, would have had to set aside $45,000 to pay for long-term care expenditures over their lifetime. This means an individual at age 65 would have needed to invest the money into some type of interest bearing account and use the earnings to pay for long-term care. Despite whether or not an individual relied on Medicaid, there was a sizable out-of-pocket component to long-term care costs. The study found that individuals that relied on Medicaid for long-term care would have an average out-of-pocket expenditure of $35,000. The distribution of out-of-pocket expenses varied based on individual characteristics and ranged from 52% of individuals with Medicaid paying less than $10,000 out-of-pocket, to 10% of these individuals paying over $100,000 out-of-pocket. For individuals that did not have Medicaid, average out-of-pocket expenditures were estimated at $38,600. Variation in distribution of out-of-pocket expenditures was also observed in this group with 60% having less than $10,000 in out-of-pocket expenses and 13% having over $100,000 in such expenses. The public implications for long-term care that emerged indicated that Medicaid incurred substantial costs, with 30% of individual relying on Medicaid for some form of long-term care, and around 7% of retirees having long-term care expenditures over $100,000. Overall, the study found that individuals over age 65 faced substantial financial risks associated with long-term care for which they are not adequately prepared.

Findings of the Kemper, Komisar, and Alexcix (2006) study raise the issue of how individuals react to risk in the private long-term care insurance market. That is, what evidence can be found in the private long-term care insurance market as to how
individuals respond to risk? Insurance theory suggests that individuals should demand more insurance when faced with substantial loss and a high degree of risk aversion (Morrisey, 2008). Stevenson, Cohen, Tell, and Burwell (2010) look at the state of the private long-term care market and found modest growth. From 1987-2001, the market grew annually by approximately 18%; however, annual growth rates for 2000 and 2005 decreased to 15% and 9%, respectively. During 2000-2005, the composition of long-term care policies changed substantially. Policies moved from providing just nursing home care to providing both nursing home and home care services. The duration of the policy elected also changed with individuals preferring policies that ranged from five to eight years versus lifetime policies. This supports work by Kemper, Komisar, and Alecxih (2006) that found, on average individuals needed long-term care for three years prior to death. From 1990 to 2005, the nursing home daily benefit doubled, and the home care daily benefit quadrupled (Kemper, Komisar, and Alecxih, 2006).

Inflation protection and the average annual premium almost doubled, with the average annual premium increasing from $1,071 to $1,918. Long-term care purchaser data suggested that educated and affluent individuals were attracted to long-term care insurance, not average wealth individuals. These are findings one would expect as the affluent ten to purchase insurance in an effort to safeguard assets (Morrisey, 2008). These data suggested that the middle class market did not develop as one might have thought and bears some responsibility for the declining growth rate of the market. Why are individuals that face substantial risk only moderately purchasing private long-term care insurance? These authors suggest that Medicaid crowd-out was responsible for the absence of growth among middle and low income individuals. Crowd-out occurs when individuals substitute public coverage for private market coverage (Morrisey, 2008). Medicaid crowd-out was also documented in studies by Stevenson, Cohen, Tell, and Burwell (2010) and Brown and Finkelstien (2008).

The relationship between public and private funding of long-term care coverage was examined by Stevenson, Cohen, Tell, and Burwell (2010). These authors were interested in how incentives were structured and how such incentives could be aligned to create an efficient and sustainable long-term care system, advancing the concept that public and private financing of long-term care coverage could complement one another. In this study, Medicaid crowd-out was seen as a reason for modest growth in the private long-term care insurance market, particularly between the middle and lower portions of the wealth distribution. These researchers found that approaches to developing a private long-term care insurance market would have to be multifaceted, raising the question of why median wealth individuals do not generate higher demand for long-term care insurance as insurance theory would suggest.

The inability of the private long-term care insurance market to attract a significant portion of the middle class was examined specifically in a study by Brown and Finkelstien (2008). This study found that Medicaid significantly crowded-out demand for private long-term care insurance, aligning with Stevenson, Cohen, Tell, and Burwell (2010) and Kemper, Komisar, and Alecxih (2006) findings. The availability of Medicaid explained why as many as two-thirds of individuals did not purchase private long-term care insurance, even if such policies were offered at actuarially fair prices. Medicaid provides poor and median wealth individuals with a full range of needed long-term care services free of charge if eligibility requirements are met. Brown and Finkelstien (2008) concluded that Medicaid imposed an implicit tax on insurance purchasers since it paid for 65%-70% of services private insurance would have provided. This implicit tax resulted in only about a 30% benefit for median wealth individuals that purchased private long-term care insurance. Purchasing private long-term care insurance is a way of protecting personal assets, implying that individuals would not likely meet Medicaid eligibility. Private long-term care insurance for median wealth individuals simply replaces paying for services that Medicaid would pay for. This could explain why in Stevenson, Cohen, Tell, and Burwell (2010) growth rates were declining and resulted in a smaller private long-term care insurance market in comparison to the sizable risk that individuals face. Where Medicare supplemental insurance fills coverage gaps, the structure of Medicaid does not allow individuals to derive a large enough benefit from private long-term care insurance to induce the purchase of such insurance. In addition, Brown and Finkelstien (2008) found that due to the implicit Medicaid tax, state Medicaid reforms would have little effect on demand for private long-term care insurance and that state and/or federal subsidies likewise would have little effect, due to Medicaid being the secondary payer for individuals that have private long-term care insurance.

Brown and Finkelstein (2007) examined the high loads of private long-term care insurance policies. In addition to the implicit tax, Brown and Finkelstein (2007) found that, compared to other types of insurance premiums, long-term care had materially higher loads. A loading fee is defined as what is paid over the expected loss and is used in calculating gross premiums (Morrisey, 2008). Individuals have varying degrees of willingness to purchase based on the demand for insurance theory. Kemper, Komisar, and Alecxih (2006) found that just as individuals face significant risk related to long-term care, insurance firms face significant risk related to providing this insurance, so loading is used in the insurer’s rate-making process to reflect the level of risk present in the market. Brown and Finkelstein (2007) looked at the price of private long-term care insurance to determine if the insurance was being offered at an actuarially fair market price. When compared to health insurance policies, long-term care policies were marked up significantly via loading fees. The study found that a long-term care policy load ranged from 0.18 to 0.51, while loads on health insurance range from 0.06 to 0.10. This study also found significant differences in
loads based on gender, with men having a load that was almost 50 cents higher per dollar than women. While the load was higher for men, there was not a significant difference in coverage. The idea that these policies were held by married couples, with this accounting for the lack of coverage difference, was dispelled as over half the policies were held outside of married households. Additionally, loads were not found to rise with the comprehensiveness of a plan in any type of predictable way. The study found that high loads however were not enough to explain the limited size of the private long-term care market and other supply and demand side factors needed to be explored.

Brown and Finkelstien (2009) also examined how supply and demand side factors contributed to the limited size of the private long-term care insurance market. Supply side factors reviewed included: contracting, transaction costs, imperfect competition, and asymmetric information. It was found that contracting and asymmetric information contributed to high policy loads. However, it was also found that if the supply side of the market was operating perfectly, meaning policies were being offered at actuarially fair values, individuals still would not purchase long-term care policies. Demand side factors reviewed included: consumer understanding, state-dependent utility, available substitutes (i.e. informal care or in-kind care, Medicaid), and financial transfers (i.e. housing equity, bequests). This study concluded that Medicaid’s implicit tax explained a significant portion of why the private long-term care insurance market is so small. However, the authors noted that supply and demand side factors should not be eliminated in formulating policy, raising the question of what possible policy solutions might spur the private long-term care market.

Limited work has been done to explore how state tax incentives might be used to induce individuals to purchase long-term care insurance. The effect that state tax incentives have on the private long-term care insurance market was examined by Stevenson, Frank, and Tau (2009). This study found that two-thirds of states had tax incentives related to long-term care insurance and that tax incentives had modest effects on private long-term care insurance take-up. Tax incentives primarily induced affluent individuals to purchase long-term care insurance, while the cost did not outweigh the benefit for low to middle income individuals. This result supports findings from Brown and Finkelstien (2008) and Stevenson, Cohen, Tell, and Burwell (2010). Brown and Finkelstien (2008) that found due to the implicit Medicaid tax, state Medicaid reforms or subsidies would have little effect on demand for private long-term care insurance. Stevenson, Cohen, Tell, and Burwell (2010) found that educated and affluent individuals were attracted to long-term care insurance, not average wealth individuals.

Medicaid reform by states has implications for long-term care insurance demand. States have been concerned primarily with possible utilization changes that might ensue due to adverse selection and moral hazard. Grabowski and Gruber (2007) looked at state level changes in Medicaid to see what type of impact policy changes related to adverse selection and moral hazard might have on nursing home utilization. This study found that these policy changes had no effect on nursing home utilization, which suggested that nursing home care was inelastic. The resulting implication for policy makers was that more generous Medicaid benefits would not necessarily lead to significant increases in nursing home utilization. With the passage of the 2005 Deficit Reduction Act (DRA), there was concern that Medicaid policies that had mostly dominated since the 1990’s might spur demand for long-term care. The DRA tightened the rules related to personal assets and Medicaid eligibility. Individuals with more than $500,000 in housing equity were not eligible for Medicaid, unless a spouse or child was living in the house. An important change was made related to housing equity, which now requires individuals to “spend down” housing equity before qualifying for Medicaid. These authors believe that this will not reduce nursing home utilization, rather it will simply push the cost to individuals that will bear a larger out-of-pocket expense, which could spur demand for long-term care insurance.

Another important trend is that both federal and state governments are looking at ways to meet an imminent long-term care crisis by moving care from institutional settings to community settings. A study by Kaye, LaPlante, and Harrington (2009) explored whether redistributing care from institutional to community settings could reduce costs and expand services. This study examined differences in growth of Medicaid expenditures for long-term care services based on the extent of a state’s Medicaid home and community-based services (HCBS). Based on earlier work, the researcher’s hypothesized that states that had extensive HCBS would see less of an increase in Medicaid expenditures than states that had limited HCBS. This hypothesis is consistent with Kaye, Harrington, and LaPlante (2010) that subsequently found that services rendered in the community cost one-fifth of what services cost in an institution. The 2009 study found that initially there was an initial increase in Medicaid expenditures for states that were implementing HCBS; however, over time states that had extensive HCBS showed a slowing of Medicaid expenses in comparison to states that had limited HCBS. This study examined all states, significantly increasing the ability to generalize the findings. Also, this study found that there is a lag between the cost of investment in HCBS and Medicaid savings. Once HCBS were launched or expanded, demand for services remained relatively unchanged. This echoes Grabowski and Gruber (2007) findings that changes in Medicaid and long-term services may not lead to an increase in nursing home utilization.
DISCUSSION

This literature review explored the question of why it is that individuals, who are risk adverse and may have significant out-of-pocket expenses related to long-term care, do not purchase private long-term care insurance. The literature reviewed indicates that individuals, states, the nation, and the healthcare system face a substantial and growing amount of risk related to long-term care for individuals over age 65. In response to this risk, individuals have not purchased private long-term care insurance as traditional insurance theory suggests. Research findings suggest that the potential reason for this phenomenon is Medicaid crowded-out of private long-term care insurance. Medicaid imposes an implicit tax on the purchase of private policies. Private long-term care policies are expensive and duplicate the majority of Medicaid benefits for those who qualify, making private insurance unattractive. Individuals do not see the utility of purchasing a policy and paying for the majority of services they would otherwise receive from Medicaid, if eligible. As a result, private long-term care policies are attractive primarily to affluent individuals that are not likely not “spend down” enough assets to become eligible for Medicaid and thus derive utility from private coverage. While research suggests that Medicaid crowd-out is the primary reason for the underdevelopment of the long-term care market, researchers Brown and Finkelstein suggest that both demand and supply side factors are salient in the development of this market. For example, offering long-term care policies at actuarial fair value may not be enough to stimulate demand. Demand side factors such as financial literacy, substitutes, and state-dependent utility may need to be considered. This point is important for policy-makers, which have seen a minimal response to state tax incentives and subsidies related to the purchase of long-term care insurance. To counter rising costs and increasing enrollees, policy-makers are doing just what the literature suggests they might do; that is, move toward providing more community-based services. Policy makers recently addressed long-term care in the Health Reform Act (HRA) of 2010. Bundled in this massive legislation is a largely unpublicized new law intended to help families meet the costs of long-term care services.

The Community Living Assistance Services and Support (CLASS) Act (H.R. 1721, S. 1951) is the first federal voluntary insurance program to provide long-term care coverage to facilitate community living services and supports (Catholic Health, 2010). This law recognizes that the portion of the population that requires long term care assistive services now numbers some 10 million and is rapidly growing and will continue to do so because of demographic trends (Kaiser Family Foundation, 2009b). In addition, it recognizes that many people in need of long-term medical care also need help with activities of daily living such as eating, dressing, bathing, transportation, home modification, and so forth as most of these people live in the community and not in nursing homes. However, many citizens do not have the income to pay for these services and have not saved for these needs. The CLASS Act is a voluntary program designed to work like Social Security, with premiums to be deducted from workers’ paychecks during employment years, unless they opt out. Enrollees become eligible for benefits after a five-year vesting period (Catholic Health, 2010). The Department of Health and Human Services will determine the exact amount of premiums, and benefits will vary depending on the level of each person’s disability. Benefits will be cash amounts that will be no less than $50 per day. These benefits are not intended to cover nursing home costs, which average $70,000 a year (Kaiser Family Foundation, 2009b), or other specific medical services. Instead, benefits under the CLASS act are intended to supplement a person’s resources to provide support services that may help them remain in the community versus requiring much more expensive institutional care. In theory, private health insurance, Medicare, Medicaid, or other programs would provide medical care and CLASS Act benefits would help defray aide, attendant, and related services at home. The CLASS Act would not replace traditional private long-term care insurance or Medicaid, but would instead supplement this coverage (Catholic Health, 2010).

A number of policy issues and operational concerns about the CLASS Act are already emerging. First, there is substantial concern about adverse selection, since if the final premiums are set too high this could deter healthy individuals from enrolling (or opting out), leaving only less healthy enrollees in the plan thereby limiting risk-spreading and consequently driving premiums higher (Kaiser Family Foundation, 2009b). Second, there is substantial concern that the type of benefits that can be covered will be inadequate in scope and scale as benefit levels provided will be increasingly nominal in relation to escalating health care related costs in out-years. Third, while the CLASS Act is mandated to set premiums sufficient to cover program expenses and maintain solvency of the fund for 75 years, there is substantial concern that as costs and premiums increase in later-years there will be substantial political pressure for the government to provide funding to the program, thereby creating a new entitlement and further deepening federal deficits (CBO, 2009). Fourth, it is unclear exactly how this new program will coordinate with voluntary LTC insurance, which covers less that 5% of workers currently; Medicare, which covers only short-term skilled nursing and home health services; and, most importantly, Medicaid, which covers nursing home care for the poor. While federal coordination is addressed in the law, there is particular concern about coordination with Medicaid, since many state laws limit income for eligibility (Kaiser Family Foundation, 2009b). The CLASS Act as it unfolds has the potential to substantially influence demand for long-term care coverage, but the significance of this influence will depend on how this new law is implemented and the policy concerns now being voiced are addressed.
CONCLUSION AND RECOMMENDATIONS

Further research is needed to fully understand the interaction of public health insurance and the market for long-term care insurance. Research related to the enactment of the CLASS Act is needed and how this coordinates with Medicare, Medicaid at the state level, and with other private insurance. Research related to the quality of long-term care provided in the community (i.e. provided by families or Medicaid programs) versus institutions (i.e. nursing homes) needs to be explored. Additional research is needed related to the cost-effectiveness of providing care in different settings (community versus institution). A better understanding of what works and how much it costs is needed to formulate national and state policies and programs that meet the needs of the growing population needing long-term care. Likewise, research needs to be done on whether or not long-term care is adequately meeting the needs of the elderly. Studies looking at utilization are needed and data on what motivates the purchase of private long-term care insurance. Clearly there is a substantial and pressing research agenda relating to long-term care policy that needs to be addressed to guide future public policy development.

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COMPETENCY CLUSTER VALIDATION: AN EMPIRICAL STUDY

Jeffery Stevens¹, Festus Onyegbula¹ and Maurice Eugene Dawson Jr.²
¹Colorado Technical University, USA and ²Alabama A&M University, USA

ABSTRACT

The Motivations-Attributes-Skills-Knowledge Inverted Funnel Validation Model (MIFV) is an upward progressing, sequentially driven competency validation model. This empirical study also detailed the many variables facing leadership development where delineated. Based on surveying multiple companies within the medical, manufacturing, information technology and professional services industries, the study describes what an organization needs to undertake so as to evolve as a company. Competency cluster validation is the key to developing advanced leaders who can meet the requirements of the workforce of today. The MIFV can become the standard for developing the competency cluster validation process that will link traditional leadership development processes with critical motivations, attributes and knowledge aspects in developing leaders.

Keywords: Competency Cluster, Attribute Skills, Cluster Validation, Motivations, Workforce

INTRODUCTION

The introduction and purpose of this empirical research created a foundation from which this study would evolve as it pertained to the Motivations-Attributes-Skills-Knowledge Inverted Funnel Validation (MIFV). Within the introduction portion of this study, an analysis at the evolving workplace as well as the lack of competency clustering was undertaken. This was an important component in that the hypothesis of this research is to introduce a new competency cluster validation model. The introductory section of this study also detailed the many variables facing business survival and workforce development where delineated. Further, this section describes what a company needs to undertake so as to evolve as an industry.

The world for employees of today has evolved into a rapidly changing and highly complex, knowledgeable worker environment. This environment is based on simple-to-complex and complex-to-simple processes that require varying degrees of competency cluster mastery (Noe, 1998). The United States business community continues to spend billions of dollars on workforce development each year with little or no return-on-investment (ROI) (Hammer, 1996). However, the primary effort pertaining to training and workforce development focuses on the most basic work skill activities and little else.

Purpose of Study

As the new century’s workforce evolves, a significant amount of time and effort has gone into competency cluster modeling. However, many workforce development efforts have not addressed the complicated process of competency cluster validation models. A major gap in literature exists related to development of a defined process of developing comprehensive competency cluster validation models. Further, very little effort has gone into the validation of motivations and attributes with regard to competency clustering. To this point, the major purpose of this study will focus on the introduction of the Motivations-Attributes-Skills-Knowledge Inverted Funnel Validation (MIFV) competency cluster model.

Statement of the Problem

The combination of a failing educational system focused on the elusive statistical chase of mandated testing and the business world’s inability to move beyond the basic foundations of the post World War II training processes, has caused a crisis to emerge in the field of workforce development (Mohrman et al., 1995). Employers in the United States have created a vast number of jobs requiring higher skill levels than in the past. With the lack of valid and appropriate workforce preparation occurring within the primary and secondary educational systems, the overwhelming impetus for workforce development has become the responsibility of the community college districts throughout the United States. As such, this study will focus on the efforts of community college districts pertaining to competency cluster validation.

As this study evolved pertaining to the various aspects of the competency cluster validation process, three major gaps in the related literature emerged. First, the traditional means of competency clustering process generally focuses solely on knowledge skills and abilities, with an occasional insight into behavior and attitude aspects of a job. This process has repeated itself time and again enlisting the likes of Gagne, Lewin, Chaplin, and Bandura, among others. However, this process is focused more on the time card punching workers as opposed to the new knowledge and complex process worker. The MIFV will add two new dimensions as well as
reorganize the sequence as it pertains to this body of research. The new dimensions will focus on motivations and attributes related to sequential competency cluster modeling.

The second major gap in the literature is the order in which the knowledge skills and abilities and/or attitudes are sequentially listed. A new sequential process pertaining to competency cluster validation modeling will place the traditional first step in the process at the end of the model as will be further discussed in this study. The third and most significant gap in the literature illustrates the lack of a competency cluster validation process. To this point, the MIFV’s ability to validate the competency cluster process will fill in the gap with regard to this body of research. A new competency cluster validation model will be proposed based on past work within the field of competency clustering research. Further, delineation of workforce development opportunities will be made available through implementation of the MIFV competency cluster validation model.

Significance of Study

The significance of this study will be the opportunity for community college districts, governmental entities, employers and other entities to implement new and dynamic workforce development competency cluster validation models. The areas that are most likely to be positively impacted by a comprehensive competency cluster validation model will pertain to five major aspects within the participant community college districts.

The first significant aspect will explore a designated study group of community college districts with regard to their competency cluster processes. Further the designated community college districts will be studied related to their level, if any, of validating competency clustering processes. The second significant aspect pertains to the ability of the participant community college districts to validate the multitude of competency cluster processes they deliver to their customers. If this can be accomplished, the perception of the delivery model with regard to the community college districts will be greatly enhanced.

The third significant aspect will be that MIFV will provide the participating community college districts an opportunity to create a quantifiable database with regard to a historical view of their competency clustering successes. This database will provide an invaluable tool with regard to research as well as program development and enhancement. The fourth significant aspect will be the opportunity for further research to be conducted within the empirical area of research. To this point, the MIFV introduces new components within the competency clustering process. The fifth significant point will introduce a competency cluster process, the MIFV. The MIFV will revolutionize the competency cluster process in that community college districts may measure their efforts within the workforce development process.

Assumptions

To explore the hypothesis as put forth within this empirical research study, several assumptions have been. First, it is assumed that the participating community college will have a knowledge base of the local labor pool and business community within their regional service area. This will provide the study with an invaluable insight to the types of motivations, attributes, skills and knowledge needed to create selected competency cluster validation processes within the study group. A second major assumption is that selected community college districts will have a clear understanding of the needs of the rapidly evolving workforce of today and the future. The third major assumption focuses on the general concept of competency cluster validation modeling and its application to the business community, which the study’s community college districts participants serve. The fourth major assumption will be that the study’s participants have an understanding about the foundations of training and workforce development.

Limitations

The first major limitation pertains to the designated community college districts lack of knowledge related to the rapidly changing business world not only throughout their regional service area, but throughout the United States as well. The specific knowledge base of the respondents is a second major limitation. To this point, there is little or no literature related specifically to the MIFV, which poses a further limitation with regard to the designated community college district respondents.

Because this is an empirical research study, the concept may be somewhat ambiguous in nature as it relates to the designated community college district representatives. The specific limitation will be the accuracy of information collected by the study respondents. The final limitation relates to the quantification of the numerous variables that effect the information collected with regard to the MIFV.
Major Competency Cluster Validation Theories and Models

Models and theories pertaining to the field of competency cluster models and theories are as numerous and diverse as the concepts themselves (Fielder and Mahar, 1979). As one views current competency cluster modeling efforts, the focus is heavily upon processes and systems as they pertain to rudimentary skills.

Robert Gagne (1962) argues that procedural material should be organized into a series of sequential steps that should be analyzed and divided into subunits. Within these series of sequential steps, the trainee must master each subunit before the entire procedure is undertaken and thus validated as per the MIFV process (DeSimone and Harris, 1998). Further, he proposed that human performance could be divided into five distinguishable categories, each of which requires a different set of conditions for maximizing learning retention as well as knowledge transfer (Gagne, 1962). Much of Gagne’s impact pertains to his work related to knowledge, skills and abilities (KSA). He was able to obtain widespread acceptance of this model through his work with the United States Military. From this body of research, Gagne’s KSA competency cluster model has become the standard for application within the business community (Gagne, 1985). However, the KSA model, unlike the MIFV model, does not validate a competency cluster model and this will allow the MIFV to impact the competency cluster body of research through its validation process, as no other model before.

Kurt Lewin conducted a considerable amount of groundbreaking work, especially with the United States Military, pertaining to competency cluster modeling (Wolfe et al., 1991). Further, Lewin devoted a great deal of effort and resources to devising a theoretical schema for representing environmental variables as they impinge upon individuals and their efforts to achieve specific competency cluster mastery (Chaplin, 1993). It appears that the most significant piece of work conducted by Lewin with regard to competency clustering was related his Force Field Analysis model. As per Lewin's competency clustering process, mastery is achieved through the use of needs assessment and task analysis as well as identifying inhibitors and enablers.

The last significant aspect of competency cluster body of research pertains to Albert Bandura. His work placed him in the role of pioneer of the Social Learning Theory. Within the Social Learning Theory, Bandura espouses that there are three major aspects that relate to competency cluster modeling (Bandura and Walters, 1959). The three major aspects form a triad that espouses that human behavior is a continuous cycle of cognitive, behavioral and environmental influences (Bandura, 1975). This continuous and interactive cycle provides a solid foundation from which to build a competency cluster validation model bolstering the MIFV hypothesis. Bandura was also one of the first to devise the concept of “chunk” learning process, which is in keeping with what the MIFV is attempting to refine and advance. Chunk learning pertains to a designated group and competency clusters are combined into group or chunk competency clusters (Bandura, 1962). Through his work in “chunking” learning, he delineated four major steps with regard to his chunking process.

History of Competency Clustering

Competency cluster modeling will be a critically important developmental system for the 21st century's workforce (Cortada and Woods, 1998). Further, competency cluster modeling is quickly becoming the workforce development standard as well as measurement and performance management standard for the 21st Century (Boyett and Conn, 1991). Since the entire process of competency cluster modeling is still relatively in its infancy, this literature review will provide a solid foundation.

In order to begin the process of developing a competency cluster validation model, one must first define a competency. A competency is defined as “the ability to accomplish tasks, results and outputs” (Mclagan, 1997, p. 40). The term competency is refined further into a job competency, which is described as underlying critical characteristics with regard to a person’s workforce activity, which result in effective and/or superior performance (Boyatzis et al., 1995).

Once one understands the basic definitions of the competency, progression can be made into understanding the types of competencies. Robert Gagne pioneered a substantial amount of the theoretical foundation for the direction in which the empirical research study is focused. This assertion is based on his work focusing on process as well as sequential and cumulative learning. Once the principles of learning are understood, Gagne feels training can be improved with a three step sequential process (Dent, 1998). The first step is a thorough task analysis in which a targeted task can be analyzed into a set of distinct component tasks. The second step in the process relates to component task achievement in which each component task must be fully achieved before the task may be performed correctly or mastered. In the last step of the process, the learning situation should be arranged so that each of the component task is learned in the appropriate order before the next task is attempted, leading to competency cluster validation mastery (DeSimone and Harris, 1998).
Summary of Research

Organizations of the 21st century must explore ways to maximize learning and workforce development opportunities for their employees as they relate to competency cluster processes (Cyrs and Conway, 1997). Once companies discover various strategies which they feel will work within the current business community, they must design a delivery system that maximizes the impact of the competency clustering for both the organization as well as the effected employees. Organizations, which can successfully meet this challenge, will quickly be able to capture business opportunities in a fast moving and complex global economy. Those organizations, which cannot meet the challenge, will flounder until acquired or they go out of business (Rummler and Brache, 1995).

There are two other factors that will add to the above-mentioned challenges facing a company. First, society will place more pressure on companies to find ways to better develop the competency cluster models as it pertains to their workforces. Second, Generations X & Y are very unique generations that will require employers to develop new workforce developmental strategies to attract and retain said valuable employees (Boyett and Conn, 1991).

METHODOLOGY

The primary purpose of this study pertained to the introduction of a new competency cluster validation model, the MIFV, and its viability. Since this research encompassed groundbreaking work, both empirical and action research methodologies were used. This system of strategy has allowed more insight related to the process of the MIFV. Upon making the appropriate adjustments to the pilot study, questionnaires where distributed to three designated community college districts within the state of Texas. The study pursued a five-step process to delineate the manner in which this research project was to be conducted. Step one involved the presentation of a questionnaire to designated community college districts. Upon the completion of this questionnaire, the requested responses were received from the community college district study respondents. Step two focused on the analyzing as well as comparing and contrasting the participant responses. Specifically, analyzing the information pertaining to the viability of the MIFV within the dynamics of the evolving workforce. Step three consisted of a trend analysis on identified areas within the questionnaire. The trend analysis provided valuable insight as it pertains to the MIFV. Step four focused on the aspect related as to whether the MIFV had any potential value and viability within the workforce development field. The viability of the MIFV potential was dependent on the results of the survey within this empirical research study. The last step in this process focused on the exploration of various strategies to infuse the MIFV into the trend analysis and thus the field of workforce development.

Instrument Development

As ascertained through this study, it appears that this study has not been conducted within this heterogeneous group in the past. The instrument design was of particular note pertaining to the study's hypothesis. Community college districts have played a vital role in developing the most advanced workforce in the world (Merriam and Cunningham, 1989). The instrument had to be designed in such a manner that the respondent could freely disclose the level, if any, of their implementation of competency cluster validation processes.

The questionnaire consisted of six questions that focused on the level and implementation of competency cluster validation processes. The demographics will only be detailed to the level needed to meet the hypothesis contained within this study. The first section of the questionnaire provides the participants an opportunity to illustrate the level of needs assessment and task analysis they are utilizing. The level of customization or lack thereof as well as the relationship of customization to the MIFV is major focus of the second section. The relationship of customization to MIFV allowed this research to compare and contrast customization as it pertains to the empirical nature of the MIFV. The last section in the questionnaire focuses specifically on each level contained within the MIFV. The focus on each level within the MIFV will allow the study to compare and contrast specific aspects of the MIFV.

Participant Selection

When selecting participants for this research study, the researcher must utilize the most effective population sample possible so as to meet research objectives. Further, any research study, especially these pertaining to human subjects, adherence to the appropriate code-of-conduct as set forth by Texas A&M University as well as the Belmont Report must be achieved. The selection process should also include the researcher outlining the entire research process to the study participants as well as their specific roles. In keeping with the development of the research process, the participants should be made aware of and have access to the Belmont Report so as to ensure they understand the guidelines related to their participation.
Data Gathering Techniques

Collecting data was the second major component in the development of the MIFV empirical research study. Data collection study was accomplished through two major means. The first major means was data that has already been collected and published by an individual or group of individuals within the respondent community college districts. The second major means of data collection involved questionnaires that were emailed directly to the designated community college representatives who served as the data collection points. The questionnaire utilized various forms of questions ranging from open ended to close ended to forced choice responses from the study participants. In using this form of data collection, the research study provided safeguards ensuring unnecessary data was not collected or too cumbersome on the study participants.

Data Analysis

To validate the instrumentation tool prior to its distribution, a pilot study questionnaire was administered to the Angelina Community College (A.C.C.) District. This community college district is located in Lufkin, Texas and services a large regional area within East Texas. A.C.C. completed a pilot study questionnaire put forth by the researcher. The responses and comments to the pilot study served as a valuable asset in adjusting some questions while eliminating others. Further, an invaluable amount of learning was achieved through this process of developing an instrument that would elicit the desired information pertaining to the MIFV. Other areas of the initial draft that were revised involved the areas of clarification and formatting. Based on the results contained within the pilot study, the final version of this questionnaire was developed for distribution to the designated community college districts.

RESULTS OF THE STUDY

This study and the results contained within are somewhat unique in that they were able to utilize both qualitative and quantitative aspects of empirical research. This was accomplished through the use of a sequential upward funneling model focusing on the advancement and quantification of data collection through the MIFV process. Prior to getting into an in-depth analysis, it is imperative that the major purposes of this study be identified. Further, the critical intent pertaining to this chapter must be delineated so as to provide a pathway into the main components of this empirical study. The last critical components that will be addressed prior to the analysis of this empirical study’s questionnaire pertain to the measurement process and demographics.

Delineating the limited use of an expanded demographic population within this study is important as it provides an unbiased foundation of the creation and evolution of the MIFV model. This crucial assessment is important in the rapid evolution of the MIFV. There are four major purposes encompassed within this study. The first purpose of this empirical research study pertains to the identification and description of a newly proposed competency cluster validation model. The second purpose of this study ascribes to the premise that the MIFV is a competency cluster validation model that exceeds traditional the competency cluster model, KSA. The MIFV will theoretically pose its major impact within aspects pertaining to the blending of environmental fit as well as cultural artifact aspects related to the workforce within this competency cluster validation process. To this point, traditional competency cluster validations efforts have focused on a fairly regimented process of assessing KSA. To this point, KSA’s can generally be “touched” and quickly measured over the short term. However, very little focus has been placed on the aspect of workforce dynamics within the regimen KSA process. As such, the long-term viability of a successful competency cluster model is not adequately addressed.

The third major purpose was to gain a clear vision with regard to the activities being undertaken, with regard to competency clustering, by the participating community college districts. The fourth and final purpose was to ascertain the potential viability and application of the MIFV or some derivative therein within the business community by the empirical research study participants.

The study respondents generally deferred the issue of performance measurement to the discretion of their clients. To this point, this empirical research study did not gather data from their clients. Insofar as personal improvement process assessment was concerned, the study respondents did not acknowledge the utilization of the abovementioned process to any great extent. This finding was somewhat remarkable in that it showed, once again, the lack of customizing with regard to competency clustering.

According to research study respondents, the performance measurement process generally focused upon measuring course capstone objectives. The standard measurement means were oral and written examinations as well as hands-on application. These measurements were limited to the specific training received by trainees in keeping with the ACT™ WorkKeys. This type of measurement often serves as snapshot of what may have been learned and more importantly what was memorized over a short period of time. However, this type of measurement falls short in ascertaining as to whether competency cluster validation has been achieved over a longer period of time, if at all. The lack of long-term performance measurement results is generally due to time restrictions, logistics and other obstacles. These obstacles are generally the weak link as it applies to the performance measurement results aspect of the competency cluster validation process.
According to the survey respondents, the vast majority of their programs are customized to one extent or another. The level of customization depended on what was ascertained from the limited need analysis based as well as the ACT™ WorkKeys and/or requests made by the participating community college district’s clients. However, the scope and sequence pertaining training activities were generally limited to the process set forth by the ACT™ WorkKeys. As such, one could question the actual level of customization to business objectives.

While the participating community college district programs seemed to be customized on the surface, they were still based on a predetermined process such as WorkKeys. Further, their customized training programs were heavily focused on the traditional KSA, which is merely a part of what the MIFV process sets out to accomplish within the hypothesis of this empirical research study. By all appearances, none of the participating community college districts are utilizing of any process resembling the MIFV process. Further, the community college districts designated to participate did not appear to process competencies within a clustering validation process. The majority of competency efforts utilized by the respondent community college districts were primarily focused on the traditional KSA process, with those being void of competency cluster validation.

The community college district respondents acknowledged their lack of a competency cluster validation process. Further, it appears that the respondents did not have a firm understanding of the concept of competency cluster validation, outside of traditional KSA processing. Post training evaluation, according to the study respondents, generally was left up to the client companies. This process was driven by the lack of logistics and resources by the community college districts as well as relationship with client companies. The responses pertaining to this question were quite remarkable in that there was such a void with regard to tracking training back to the workplace.

Written follow-up generally took the form of existing questionnaires based on ACT™ WorkKeys and/or KSA. The oral follow-up efforts generally came in the form of interviews of the designated client representative. Based on the analysis and evaluation of written and oral follow-ups, there did not seem to be a quantifiable tie between training and competency cluster mastery back to the participants job site, especially as it pertains to the long term review of training success.

While the respondents mentioned the limited use of skills and knowledge especially with ACT™ WorkKeys, the use of motivation and attributes was basically nonexistent in their processes. As such, the ability to validate competency clusters was dramatically inhibited. While the ACT™ WorkKeys are an adequate process, they do not go far enough in customizing a competency model such as the MIFV. Further, none of the respondents acknowledged utilizing motivations or attributes when putting together a workforce development program especially as it pertains to competency cluster validation. As has been stated several times, the motivation and attribute components are critical in building a successful competency cluster validation model. While all of the community college districts queried for this study conducted some form of KSA process, they did utilize anything remotely associated with the MIFV.

Findings

While this empirical research study in no way diminishes past competency clustering models, the MIFV allows for a more structured and advanced model from which to challenge, develop and assess a workforce as well as validating the myriad of competency clusters facing them. The major impact of the MIFV falls within the areas of motivation and attributes as well as it upward funneling competency cluster validation model.

It appears that the community college district study respondents are not conducting an environmental scan as it pertains to their competency cluster modeling efforts. As such, it is difficult for the study participant community college districts to gain the requisite information to discover what environmental factors could enhance and/or challenge their competency cluster efforts. The participant community college districts are doing very little in the way of needs assessment as well as task analysis. This aspect of the competency cluster validation model, as described earlier, is very critical to the MIFV model. It appears that the participant community college districts are utilizing the ACT™ WorkKeys as their sole needs assessment and task analysis tool. As delineated early within this report, the ACT™ WorkKeys are an adequate tool when assessing very basic skills of a designated workforce. However, this process does not rise to the level of needs assessment and task analysis needed to meet the standards of the MIFV.

The needs assessment and task analysis aspect of the MIFV builds off of the environmental scan that is achieved in the first step of this model. It accomplishes this feat by taking the profile built within the environmental scan component and adds it to the foundation of the MIFV by detailing which needs and tasks are needed to evolve through the above mentioned competency cluster validation model. It is important to note that the evaluation stakeholders develop the environmental scan, needs assessment and the task analysis.
The motivation level allows the researcher to encapsulate the various aspects that compel a worker to action into a quantifiable formula with the MIFV. It appears that the participating community college districts are not conducting any form of motivation inventory or assessment. Further, the ACT® WorkKeys and KSA processes in current use by the participant community college districts do not measure motivators within their competency clustering process.

The attribute level allows the researcher to take information ascertained within the previous components as well as such aspects abilities, etc. This data is then refined and moved upward to the skills level of the MIFV. Once again, the participating community college districts provided no evidence related to the assessment and/or implementation of attributes within their competency clustering efforts. As was the case with the motivation level of the MIFV, the ACT® WorkKeys and KSA’s process current in use by the participant community colleges do not measure attributes within their competency cluster efforts.

The skills and knowledge components of the MIFV are in keeping with past work conducted within this body of research, with three notable differences. First, these two levels have been formatted so as to allow for flexibility and revision to meet the changing requirements of the current workplace. Second, the traditional competency cluster models have explored knowledge and skills first within the scope of study. However, the MIFV narrows their scope as well analyzes both components last in the process as it allows a researcher to delve first into the cultural and environmental fit of individuals within this validation model. Third, knowledge and skills, within the MIFV, do not play the largest role within this process as has been the case in past. Rather they are another key component within the MIFV competency cluster validation model.

The last major significant factor of this study pertains to its sequential competency cluster validation. In the past, many components within the MIFV have been utilized in one form or fashion. However, said components have generally been put in wherever the researcher sees fit, which leaves most processes within this spectrum dichotomized. The MIFV on the other hand, provides the researcher with a sequential process to follow as one looks at the competency cluster validation process.

SUMMARY

Two main purposes were focused upon with regard to competency cluster validation. The first focus was finding the gaps in the literature that existed pertaining to the MIFV competency cluster validation model. The second purpose was to introduce the MIFV. This model if properly developed, should serve as a strong workforce development and performance measurement tool as well as communication tool and a blueprint to success for employees (Boyatzis et al., 1995). The MIFV, as described earlier, is a sequentially upward funneling competency cluster validation model. The initial action conducted with the MIFV pertains to conducting an environmental scan. An environmental scan encompasses a thorough review of the various environments in which the clients operate during workforce development activities.

The second step within the assessment aspect of the MIFV involves the application of conducting a needs assessment. To this point, the first critical aspect involves the ultimate goal of the process to be undertaken. In the case of the MIFV, the ultimate goal would be validating the desired competency cluster to be mastered. However, the researcher must identify the challenges that will be addressed within the needs assessment as well as task analysis process prior to partaking in a competency cluster process (Stenning, 1999). As a researcher delves into the task analysis process, they must be able to link the critical aspects of the overall competency cluster validation process (Stenning, 2000). By accomplishing this activity, the process of validation can begin to take place.

The motivation level of the MIFV is the first level of the actual action plan phase of the MIFV. According to the data ascertained within this study, motivation has rarely been formally implemented into a competency cluster model. However, the MIFV asserts that motivation is the pathway to developing a fully integrated and functional competency cluster validation to meet the demands of today’s world of work.

The second level of the MIFV action plan pertains to measurement of attributes with regard to the MIFV. The measurement and assessment of these attributes is focused upon the various properties, qualities, characteristics needed to negotiate successfully the MIFV process. Further, this aspect of the MIFV should encompass past aspects of quasi competency cluster models, which are terms such as attitude, values, integrity, qualities, principles, maturity, accountability, etc. Through the research pertaining to the development of the MIFV, findings support that attributes generally encompass non-technical, value added aspects of competency cluster mastery. The attribute level expands and adds to the motivation aspects of the MIFV in that it brings value-added aspects to a cultural and work environment.

The skill(s) level of the MIFV involves the actual “tools” that an employee brings to the process or those that the MIFV administrators are focused upon pertaining to the mastery related to a specified competency cluster. Webster’s Revised
Unabridged Dictionary defines a skill as a proficiency in a subject matter area, such as drawing blueprints or conducting a search of a suspect. Generally, skills are measured in hard data, such as the ability to operate a specific type of welding apparatus (Phillips, 1996).

This aspect of the MIFV is the most often utilized and measured with regard to a community college district's competency cluster process. While this aspect of the MIFV seems to be the quickest and easiest aspect to implement and measure, it does not provide an all-inclusive and successful competency cluster model. Further, while skills can often be obtained for the other aspects of the MIFV, it must be included so as to drive a successful competency cluster process.

The knowledge level of the MIFV focuses on the “know how” that is attempting to be achieved within the MIFV process. Webster's Revised Unabridged Dictionary defines knowledge as “A clear and certain perception of something.” The term “something” is obviously somewhat vague in nature. However, within the MIFV, knowledge is the capstone level of a sequential competency cluster model. Lastly, the knowledge aspect of the MIFV serves as the capstone achievement of this upward funneling competency cluster validation model.

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WORKPLACE INSECURITY IN THE NEW ECONOMIC SYSTEM: ROLE OF HRM AND HR PROCESS REVISITED

Kumudinei Dissanayake
Institute of Developing Economies (IDE JETRO), Japan

ABSTRACT

Global economic recession has created numerous consequences on the lives of work organizations and individual workers. Despite the economic crisis that is threatening contemporary organizations over their long term survival, human resource management (HRM) of work organizations have been challenged by the organizational demographic changes, socio-cultural transformations of work society, evolving new patterns of employments, non-conventional models of career adopted by individual workers, and even newly emerging structures and designs of organizations in this new economic system. Arising out of these challenges, ‘workplace insecurity’ is identified as a major issue that has to be faced in the long run and answerable by the HRM of work organizations. The present study attempts to unveil these challenges and revisit the existing typical HRM process of organizations with the aim of examining the ways of successfully facing the issue of workplace insecurity. It finds its theoretical base on three macro level organizational theories, namely, systems theory, social network theory, and theory of learning organizations. The study suggests that networking with industry and continuous updating of labor market information have to be incorporated in to the agenda of HRM of work organizations, especially when they are dealing with an increasing number of non-regular workers.

Keywords: Workplace Insecurity, New Economic System, HRM, Non-Regular Workers, Work Organizations.

INTRODUCTION

To stay strong in an era of continuing economic recession amid varying internal demography, work organizations of the day are seriously involved in an endless struggle of choosing among operative cost reduction mechanisms and effective employment strategies (Ahn, 2007). These numerous strategies, ranging from work re-organization (Smith, 1997) to restructuring (Ross, 2006) and flexi time working to job reduction (Uzzi & Barsness, 1998), have concomitantly created affirmative and negative consequences on organizational lives as well as individual worker lives. The scenario from the part of individual workers signifies the addition of new working generations to the existing workforce armed with multi-skills and loaded with their own personal desires while being employable in diverse work settings. Further, a manifold workforce, including young, female, elderly and even disabled individuals, are being emerged through the work population.

In such a portrait of workplace, it has become an impeccable fact that single organizations are indigent enough to abandon any effort in providing life time employments or long term career promises for their newly hiring workers. Thus, the most clearly evident fact in the new economic system is that the time has come for new generations of workforce to commence their journey of crossing over organizations while undertaking multiple assignments towards the accomplishment of life desires (Baruch, 2004; Peiperl & Baruch, 1997). This journey has been made easy by organizations through their offering of flexible, temporary, contractual or virtual type work assignments. Work organizations of the day are greatly better-off with such cost effective employment arrangements those focused on the short-term future while facilitating a mobile workforce.

Resultantly, there is an upsurge of non-regular workforce in the work organizations in many countries in this era (Auer & Cazes, 2003). The non-regular workers in the present study are considered to be a coverage of fixed-term contractors, casual workers (Wooden & Warren, 2003), part-time workers, arubaito workers, (Honda, 2010; Kosugi, 2008), dispatched workers, agency workers (Japan Institute of Labor, 2011), atypical employees (Sano, 2009) freelancing, contingent work, temporary work, teleworking and homeworking etc. (Keizer, 2009; Uzzi & Barsness, 1998). These diverse employment patterns have meant for diverse purposes, such as flexible staffing arrangements (numerical and functional flexibility), lower payroll costs, labor cost savings, enhanced administrative control etc. (Uzzi & Barsness, 1998).

However, the undermined point in these justifications is the fact that the work organizations are becoming effective at the cost of workplace security in the long run. Thus, recognizing the fact that the loosing job security of workers create an analogous state of losing workplace security at work organizations, the present study posits the view that human resource function of work organizations, which is responsible for securing the human resources (HR) for their smooth functioning, have to re-visit and revise the traditional human resource management (HRM) process in order to address this imminent issue. In view of that...
the present study is an attempt to unveil the challenges encountered by HR function of organizations in the new economic system and to suggest some modifications to the existing typical HR agenda.

The ‘new economic system’ in the present study denotes the economic culture that has been appeared as a result of the continuing global economic recession and aligned economic crisis that is threatening work organizations and individual lives all over the world. This term is used as an unabridged notion to capture the newly evolving patterns of employments, non-conventional models of career, and newly emerging structures and designs of work organizations in a holistic depiction. The main attention of the study is drawn on ‘workplace insecurity’ which is consequent to the driving forces of new economic system. Subsequently, a modification is proposed to the existing typical HRM process while incorporating two major functions therein namely, industrial networking and labor market updating.

This paper is structured as follows. Following this introduction, it commences with a discussion of the challenges for HRM in the new economic system, and elaborates the concept of ‘workplace insecurity’. Next, it presents the theoretical background to the basic arguments developed in the study. Then it proceeds to examine the role of HRM in the course of encountering workplace insecurity, and suggests how the typical HRM process would be modified in order for accommodating such a role. It concludes with some practical and theoretical implications and directions for future research.

**CHALLENGES FOR HRM IN THE NEW ECONOMIC SYSTEM**

The new economic system, amid an array of macro level economic, socio-cultural, demographic and technological challenges, has made work organizations unease in several dimensions of human resource related managerial issues. Adaption of cost sensitive strategies, changing demography in organizations, transforming societies at work organizations, evolving patterns of employment, emerging new designs of organizations, and creation of non-conventional models of individual career have been some of the seriously attended contemporary debates within them.

Anywhere under the shadow of economic recession and anticipatory consequences, the cost reduction or job reduction strategies have been visible irrespective of the nature of the industry, size or the type of ownership of the organization. When cost or job reduction is directed towards human resources, from the point of a decision of halting new recruitments up to the removal of excess staff and even from reduction of working hours up to decrease of salaries of the existing staff, altogether have been painfully born exercises at work organizations. A series of mechanisms employed to those ends are evident in typical organizational practices. Freezing promotions, reducing work week, mandatory furloughs, shifts from full time to part-time or contract worker status, or either cut in overtime, exit incentives voluntary sabbaticals (Grandoff, 2008) are some of the examples among them. All such attempts, when seen from the perspective of worker-management relationship, are strong enough to keep the workplace in a more volatile and unpredictable status while creating a coinciding consequences for organizations by generating an insecurity in terms of the workforce.

Accompanied with the effects of shrinking population, aging society, generational changes in terms of values of work, and educational advancements of females and equal opportunities, there have been activating demographic changes at workplaces by means of changing age structures of work population, entering of more female, young, elderly, disabled or minority groups in to work, and increasing of skill diversity. Demographic changes, similar to many other macro level parameters, are difficult to predict for future directions, and seemingly, this unpredictability suggests workplace insecurity at work organizations.

The socio-cultural transformations in society that is taking place as generational evolvements constantly produce a workforce with different desires, expectations and behaviors when compared to the previous generations at work. In the contemporary young work society, the most vividly seen characteristic that could be condensed into one term is the ‘individualism’. Oishi (2000) explains the individualism in Japanese society comprehending the characters of ‘more independent from the community’ and ‘holding higher expectations for self-realization’ which creates to a psychological distance between the individual and the society or company (p. 1-2). This psychological distance leads to lose the bond between organizations and the workers in years to come, thus creating uncertainty of their future movements in the working endeavors.

Together with the atmosphere created by the management through various employment-focused cost strategies and the constant socio-cultural transformations of work populations, have converted contemporary work organizations into temporary halting places of a life long journey. Evidenced to this situation is the fact that employment types such as casual, part-time, contractual, shift, fixed-term or agency work which come under marginal, occasional or irregular categories, have been rapidly increasing during the recent past in most of the developed as well as developing economies (eg., Honda, 2011; Kosugi, 2008).
Pressures from organizational cost sensitive strategies combined with changing individual desires, value systems, aspirations and even life expectations, the contemporary work generation is been adopted to non-conventional models of careers those are enormously different from traditional linear bottom-up models of career (Sullivan, 1999; Sullivan, 2001). They are most often risk-taking, flexible, and multidirectional (Baruch, 2004) patterns of career which suits to the patterns of behavior of contemporary young or female work population. These new patterns take the form of relationally developed (Hall, 1976), self-focused and enriched (Mirvis and Hall, 1996; Hall et al., 1996), boundaryless (DeFillippu and Arthur, 1994; Arthur, 2008; Sullivan, 2001), intelligently developed (Arthur, Claman and DeFillippi, 1995), kaleidoscope (Sullivan and Mainiero, 2008), or even boundary-crossing or post-corporate (Peiperl and Baruch, 1997) in their nature and characteristics. Non-conventional models of career being developed at the hand of the person who holds it, there does not exist any organizational responsibility or bond attached to them. This transition of responsibility (Mervis and Hall, 1996), in a way, alludes a loosening of attachment (and control) by the organizations over their members’ work life, thus linking it a path to workforce insecurity.

Other than these human focused instigations, the present work organizations can be seen as rapidly evolving self-propelled structures promote work from remote settings. Thus, virtual working through teleworking and even homeworking has been possible in such organizational set-ups. Positively seen, these work arrangements ease female, elderly or even disabled workforce and having work-family balance. However, they have disguisedly limits the worker loyalty, commitment and psychological bond to the organization due to its reduced space for social interaction. Resultantly, the workers become remote agents of a loosely held network.

All these challenges those raised against the cooperative relationship between worker and the organization, leads the organizations to workplace insecurity in the long run.

**WORKPLACE INSECURITY**

‘Workforce insecurity’ has been a term used in the literature to denote ‘job insecurity’ or ‘employment insecurity’ which explicates the insecure status from the part of the workers (eg., Cunningham and James, 2007; Heery and Salmon, 2000). Thereby it means the ‘fear of becoming unemployed’ or ‘the difficulty of finding a new position following job loss’ (Heery and Salmon, 2000). They extend the explanation of workforce insecurity by adding it ‘blocked promotion or pay prospects or lack of control over what goes on in the workplace’. However, the concept argued in the present study is ‘workplace insecurity’ which is completely different from that context hence here the insecurity is recounted to connote an insecure status from the part of the employer or the work organization.

The workplace insecurity, in the present study, is defined as ‘the state of uncertainty or lack of confidence on the availability of the required number of workers with appropriate skills for the smooth functioning of an organization’. Despite the HR planning, job analysis, recruitment and aligned HR related functions of an organization, the workplace insecurity can be a state prevailing due to highly volatile workforce which employs more of non-regular workers. Based on the afore-given analysis of HR challenges of the era, the present study identifies the leading contemporary reasons for workplace insecurity as follows:

a. Increasing proportion of non-regular workers at workplaces
b. Individualism of new generations of workforce
c. Demographic changes in organizations
d. Non-conventional models of individual career
e. Newly emerging structures of organizations

Workplace insecurity of organizations and the job insecurity of workers may be seen as the two sides of the same coin. And both can be complementing each other. The assurance of a secured workforce for the smooth functioning of an organization is not a responsibility of any other the division of HRM. Thus, the challenges enforced by the new economic society on HRM of an organization cannot be undermined even at an era of global economic recession, and attempts are needed to dig into the possible reactive measures to be adapted by them.

**THEORETICAL BACKGROUND**

Addressing the issue of workplace insecurity in light of new economic system, the present study develops its arguments on the grounds of three macro level theories which enable elaborations at inter-organizational contexts. Those are systems theory, actor network theory, and theory of learning organization. At the end, it will simply review the typical HRM process of organizations.
Systems Theory

Systems theory in management and organization studies elucidates the interdependent nature of organizational entities. Further, it theorizes the characteristics of organizations as sub systems, their inter-relatedness to the entire system, and how the entirety and the individual parts should be viewed in an open systemic view from managerial perspective (Scott, 2002). Thus, the theory contributes to the understanding of organizational and managerial actions with the use of several concepts, such as sub systems, synergy effect, openness, entropy and feedback etc. (Katz and Khan, 1966). Accordingly, any entity would find survival difficult in case of isolation, and further, necessarily it would be seen as a sub system of another comparatively larger system. The resource dependence perspective (Pfeffer and Salancik, 1978) which follows the open systems logic clearly indicates the organizational dependence on external environment which is coined as social control of organizations. Mayrhoper (2004) exhibited the use of systems theory in understanding HRM and the appropriateness of social systems theory in developing a framework for HRM.

Social Network Analysis

Social network analysis in management and organization studies helps understand the interactions, interdependencies, and structure of relationships among the social networks those consist of individuals and organizations. Thus, gaining knowledge on diverse actors, their behaviors, the type of interactions including strong or weak ties, and the nature of entire structure (Wasserman and Faust, 1994) would be possible through social network analysis of organizations. It is the view held in theory that organizations are able to get access to more information sources, win competition, strengthen performance, and secure survival with the help of social networks.

Learning Organization

The theory of learning organization posits that organizations have to continuously be updated as an entity in order to survive in a highly competitive and dynamic environment (Argyris, 1999). Seeing organizations in a single portrait, help workforce continuous learning, facilitating an environment for creating organizational memories, values and shared vision, and enhancing shared learning have been suggested as the attempts for reaching towards a learning organization (Senge, 1990). It is the theory’s stance that if organizations strive to be human friendly and customer friendly, win competition, meet external pressures, and even encounter organizational change, they have to be learning organizations. It is a holistic effort which requires the active participation of all the members to be vigilant on the surrounding environment, be updated and act accordingly on a continuous basis. It admits the value of setting the entire workforce in a system that is continuously sensitive to the external environmental happenstance. Thus, it is the responsibility of the management to create such a culture within the organization.

Typical HRM Process in Organizations

The typical human resource management process covers a wide range of functions still commencing from environmental scanning and identifying strengths, weaknesses, opportunities and threats in its internal and external environments. The HR function in contemporary organizations has been more focusing on the involvement of formulation, implementation and evaluation of strategies in terms of human aspect of the overall entity (strategic HRM or SHRM). Work organizations well consider the situation of their internal labor markets in their HRM process (Rowley & Harry, 2011). However, the HR agenda turns mainly around the functions of job analysis, HR planning, attracting, developing, and maintaining of human resources. Within this spectrum it covers compensation, performance management, training and development, employee relations etc. to a greater extent (Armstrong, 2009; McCourt & Elgridge, 2003). This has been an internally focused HR model for work organizations, thus emphasizing all the HR related activities in an in-house basis.

THE ROLE OF HRM IN THE NEW ECONOMIC SYSTEM

The work organizations in the new economic system would not be able to escape from the ‘fear’ of workplace insecurity unless their working as well as knowledge horizons are not broadened to locate themselves in a tiny fraction of the world of work. Such a broadened systemic view (Katz and Khan, 1966) has to capture the industry, peer organizations, employment agencies, educational, training and vocational institutes and the government employment services of the nation in a total portrait. Further, moving beyond, they may have to expand their mandatory agenda to network with those entities.

Industry and peer organizations are the information hub of skilled and non-skilled workers (regular and non-regular, trained and apprenticed, existing and terminated) which becomes one of the major sources of temporary or permanent recruitment. Thus, as depicted in social network theory, networking of work organizations with the industry and peer organizations would reduce
the workplace insecurity to a considerable extent. Further, strong networking with employment agencies and government employment services provide reliable and continuous sources for updating knowledge on labor market changes and ease recruitment in the future. Continuous internship programs arranged with educational and higher educational institutions and linking with vocational training institutions would tighten the supply of non-regular workers at a shorter notice. Anyhow, such networking activities have to be accommodated in the HRM agenda of work organizations on a permanent basis subject to regular reviews. Thus, the present study proposes that entering into and continuous maintaining of strong networks with the industry, peer organizations, employment agencies, educational, training and vocational institutes and the government employment services, and regular reviews of such links would help reduce workplace insecurity of work organizations.

In order to address the issue of instability of the workforce in future, due to its flexibility at present, the work organizations would be at least partly better off with the current updated knowledge about the labor movements in the existing labor market. It is not only this knowledge and sensitivity to be built and maintained continuously, but also they have to fairly share it with the flexible workforce. The updated knowledge of workforce would be greatly help decrease the workplace insecurity in turn. In terms of labor market sensitivity, and through the efforts of promoting their workers to be involved in a continuous process of learning, the work organizations will become learning organizations (Senge, 1990). In the efforts of information sharing, they would be able to create a cooperative and harmonious work culture enabling them to reverse the diminishing workplace values such as loyalty, commitment and psychological bond to a certain extent. And partly, it would be a contribution to employee development. Thus, the present study proposes that being sensitive to labor market movements, conducting surveys, sharing survey results with peer organizations, and sharing such information with the existing workforce have to be incorporated in the agenda of HRM of the work organizations in the new economic system.

The insecurity created through variability of non-regular workforce is widened in the instances in which organizations lose their touch with the workforce at the point of temporal or permanent termination of employment. A system that eases a continuous maintenance of a database of the flexible workforce becomes a possibility of work organizations with the facilitation of HRIS. Further, development of a network with the terminated non-regular workers would be facilitated by the system. (This could be extended up to existing or even prospective non-regular workers of the organization.)

Process of HRM revisited

The above discussion brings insights to revisit the typical HRM process in a work organization in light of the foreseen workplace insecurity. Having considered the implications given by macro level organization theories as elaborated in the previous section, it sees the necessity and the possibility of broadening the outlook of HRM process up to the integration of links with the external environment. The suggested modification to the process is shown in the figure below. (The typical environmental scanning and the SWOT analysis are not depicted in the figure for simplicity in explaining the suggested points).

![Figure 1: The Proposed HRM Process for Addressing Workplace Insecurity](image-url)
The generic process of human resource management in typical work organizations has been modified in the proposed model in order to accommodate the two major functions in relation to non-regular workforce so that the organizations can avoid workplace insecurity. Thus, the two functions are:

a. Industrial networking (including peer organizations, employment agencies, educational, training and vocational institutes and the government employment services, especially focusing the development of internship programs, contracts and employee exchange)

b. Labor market information updating (including conducting surveys, exchanging survey results with other organizations, and sharing information with the workforce)

The exhibited process shows the place claimed by the two newly introduced functions by creating links with the external larger system in which the work organizations seek their survival in the long run. The two functions are integrated with the acquisition and termination points of the HRM process. Further, differently to the traditional model, termination of employment has been identified as significant as the acquisition of human resources. The traditional and mandatory functions of rewarding (compensation, performance management, employee benefits and services etc.), developing (training and development, career planning etc.), and maintenance (employee relations, grievance handling, legal aspects, health and safety etc.) of human resources still secure their position even in the suggested HRM process.

CONCLUSION, IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

In an era of economically, socio-culturally, demographically, and technologically challenged, the role of HRM of work organizations is indubitably recognized as imperative in strengthening the smooth functioning and survival in the long run. It ascertains that workplace insecurity could be overcome through inter-organizationally focused strategies. Further, it foresees the inadequacy of traditional HRM process which commences from environmental scanning and proceeds up to attracting, developing and retaining workforce within organizations. Thus, it concludes that the organizations, especially, those with upward trend in utilizing non-regular workforce have to broaden their HR lenses by crossing the organizational boundaries to reach the external environment. Inter-organizational collaborations are seemed to be worthwhile when dealing with a flexible workforce like non-regular workers. It adds the fact that, to that end, more new functions those integrating the work organizations and the related actors in the environment have to be incorporated to the existing HR agenda of organizations.

It implies that networking with the correct industry partner or peer organizations, investing in the correct internship program, and selecting the most beneficial employment agencies for contracting would be priceless decisions to be made by HRM. Moreover, even within a comprehensive strategic HRM model, more emphasis on short range employment strategies (eg., seasonally focused strategies) would be worthy for handling the non-regular workforce against a workplace insecurity.

Theoretically seen, the present study implies the need of attending to the development of more theories and concepts on inter-organizational relations in the sphere of HRM.

By means of testing the arguments leveled in the present study, a future research can be undertaken to see the differences (if any) of workplace insecurity perceived by the work organizations those are networking and not networking with the industry, and those are involved in and not involved in regular labor market information updating, as major functions in its agenda. A theoretical extension will be possible with a further investigation into inter-organizational functions of human resource management.

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COPING EFFECTIVENESS: DIFFERENTIAL PREDICTIONS FOR PLATEAUED EMPLOYEES

Carrie S. Hurst and Kenneth Kungu
Tennessee State University, USA

ABSTRACT
The purpose of the present article is to engage in theoretical speculations about the nature of the differences in how employees can effectively cope with hierarchical and job content plateaus in their careers. Hierarchical plateaus occur when an employee perceives a low likelihood of promotion in his or her career while job content plateaus occur when individuals perceive a lack of challenge in their jobs. Since career plateau is an organizational stressor, different individuals may employ different strategies to cope with it. It is possible that the effectiveness of coping strategies varies based on whether individuals are experiencing hierarchical or job content plateaus. Four coping strategies that would be effective for hierarchical plateau employees are suggested which include discussing the problem, job withdrawal, non-work activities, and mental coping. Five coping strategies that would be effective for job content plateau employees are suggested which include discussing the problem, job involvement, non-work activities, mental coping and side work. Directions for future research are suggested.

Existing Research on Coping with Plateaus
Several researchers have examined coping in attempts to understand how employees can most effectively cope with plateaus in their careers. For example, Elsass and Ralston’s (1989) early theoretical article outlined potentially positive and negative responses to being plateaued. However, their focus was limited to just hierarchical plateaus, with job content plateaus not appearing in the literature until almost a decade later (Allen et al., 1998). Drawing from Elsass and Ralston’s framework, Rotondo (1999) and Rotondo and Perrewe (2000) designed empirical studies to examine coping strategies among plateaued employees. However, these authors also focused on hierarchical plateauing and provided a list of potential coping strategies for employees to endorse. Employees were not asked whether they had engaged in the activity as a way to cope with being plateaued or if it was merely something they had simply encountered during their career progression (e.g., getting more involved in mentoring, taking on additional projects, pursuing team work). Further, such coping checklists such as these have been criticized for overlooking additional methods individuals may have used to cope that are not included in the list (Folkman & Moskowitz, 2004). In order to address these shortcomings, McCleese, Eby, Scharlau, and Hoffman (2007)’s mixed-method study involved an open-ended examination of strategies individuals reported to have selected as ways to cope with both hierarchical and job content plateaus. Their study resulted in seven categories of coping (discuss problem, job withdrawal, job
involvement, non-work activities, mental coping, nothing, and side work). In the following sections we further define these categories of coping and their potential effectiveness as coping strategies for hierarchically and job content plateaued employees.

Although McCleese, et al. (2007) only observed differences among the reported use of coping strategies for mental coping, it is possible that the effectiveness of coping varies based on whether individuals are experiencing hierarchical or job content plateaus. An important oversight that remains in the research to date on coping with plateaus involves consideration of whether certain strategies are more useful for coping with either type of plateau. Without this knowledge, managers and career counselors are unable to suggest the most appropriate coping strategies for employees to help manage their unique career situations. Therefore, the following sections describe a model of coping we present in Figure 1. Specific predictions based on the model are offered regarding potential differences in coping effectiveness based on the type of plateau experienced.

**Defining the Outcome Variables**

Plateaus have been linked to a wide variety of work-related attitudes and behaviors. Work-related attitudes linked to plateauing include lower job satisfaction, career satisfaction, job involvement, and organizational commitment (e.g., Allen, et al., 1998; Chao, 1990; Lee, 2003). Work-related behaviors include outcomes such as turnover intentions, absenteeism, and reduced performance (e.g., Allen et al., 1998; Lee, 2003; Near, 1985; Tremblay, et al., 1995; Veiga, 1981).

Although less frequently studied, plateaus have also been linked to some consequences involving employee well-being, including higher stress and depression, and poorer overall health (McCleese, et al., 2007; Near, 1985). The plateauing literature provides conflicting findings regarding stress as an outcome of being plateaued (Allen, et al., 1998). One explanation for this is that it depends on both the type of plateau experienced as well as efforts individuals have attempted to cope with their plateaus. Hurst and Eby (2010) argued that individuals might re-appraise their situations as less stressful after having coped. We further suggest that successful coping might ultimately lead to the removal of the plateau itself. The model we present below in Figure 1 offers this as one possibility of successful, or effective, coping efforts. The work-related attitudes and behaviors and well-being outcomes of plateauing are referred to as “negative consequences” in the model.

**Effectiveness of Coping Strategies**

In order to understand the effectiveness of coping, researchers must consider whether the coping strategies individuals select are successful in reducing or eliminating the negative consequences associated with plateauing. Effective coping, then, should alleviate or reduce the negative consequences described above as outcomes of plateauing. However, the effectiveness of certain coping strategies will likely depend on the type of plateau individuals are experiencing. Drawing from research in both the plateauing and coping literatures, the following sections offer logic and rationale for several testable predictions for future research on coping with plateaus. We rely on McCleese et al.’s categories of coping throughout in making these predictions.

**Discussing the problem** involves employees’ attempts to discuss their career situation (plateau) with management, colleagues, and/or friends and family (McCleese et al., 2007). Relying on others for social support has long been considered a key strategy for managing stressful encounters at work (see Viswesveran, Sanchez, & Fisher, 1998 for a review). Emotion-focused forms of support such as this may help to alleviate some of the negative emotions about being even if talking about the problem isn’t addressed at solving the problem itself, as some of the coping strategies below which may be more problem-focused solutions (Lazarus & Folkman, 1980). In other words, it may be the case that simply having an opportunity to vent to others about one’s lack of promotions or lack of challenge in his or her job is enough to alleviate some of the negative consequences from being plateaued either hierarchically or in terms of job content. Because of the widespread recognition of social support as a beneficial coping mechanism for a variety of stressors, we expect discussing the problem to be equally beneficial to both hierarchical and job content plateaued employees.

**Proposition 1:** Discussing the problem is an adaptive coping strategy for

a. hierarchically plateaued employees and
b. job content plateaued employees.

Coping strategies such as thinking about leaving one’s job or organization (i.e., turnover intentions), changing or reducing hours, and attempting to avoid more responsibility at work make up the plateau coping category of job withdrawal (McCleese, et al., 2007). Although organizational leaders might not consider these as ideal coping strategies, job withdrawal strategies such as these might be the only option left for hierarchically plateaued employees who perceive a lack of promotions in their future. This may be particularly true for employees who have reached the glass ceiling or have been stuck in their current
positions for many years. If there are no additional levels of employment to which the employees can advance, then they might decide to leave for another organization with better opportunities for advancement. Equity theory (Adams, 1965) suggests employees are motivated to change perceived inequalities in the ratios of their outcomes and inputs at work compared to those of others (Colquitt & Greenberg, 2003). Hierarchically plateaued employees might decide to reduce their hours or avoid taking on additional responsibility as a way to gain a sense of equity about their career status and lack of promotions. However, we should note that whereas turnover would alleviate their plateau, other withdrawal behaviors might only help to alleviate some of the negative attitudes about their situation.

Regarding job content plateaued employees, since these employees report being plateaued as a result of lacking challenge or responsibility in their jobs, we do not believe avoiding responsibility would be an effective coping strategy. Nor would reducing hours, as doing so would lead to less visibility and fewer opportunities to improve the level of challenge in their roles. Turnover intentions, however, may be seen as a viable option if employees find another job or career that promises more developmental opportunities or challenging work.

**Proposition 2:** Job withdrawal is an adaptive coping strategy for plateaued employees:

a. Turnover intentions, changing or reducing hours and avoiding more responsibility are adaptive coping strategies for hierarchically plateaued employees.

b. Turnover intentions are an adaptive coping strategy for job content plateaued employees.

Job involvement describes coping strategies such as pursuing education, engaging in a lateral move, increasing one’s workload, changing the focus of one’s work, and increasing one’s knowledge of their job (McCleese, et al., 2007). Job involvement might be viewed as the opposite of job withdrawal. Following the logic presented above suggesting hierarchically plateaued employees might use job withdrawal as a way to maintain a sense of equity, it seems likely that job involvement might only lead to a greater sense of inequity among these employees. Therefore, we do not believe it would be an effective coping strategy for hierarchically plateaued employees. Alternatively, job content plateaued employees may likely find opportunities such as seeking out education, training, and increasing their workload as useful ways to improve the level of challenge found in their roles.

**Proposition 3:** Job Involvement is an adaptive coping strategy for job content plateaued employees.

Non-work activities include exercising, spending time with friends and family, engaging in leisure activities, relaxing, taking stress management classes, taking medication, and becoming a mentor (McCleese, et al., 2007). Like discussing the problem, non-work activities such as these can be considered emotion-focused forms of coping (Lazarus & Folkman, 1980) and may have more widespread effectiveness in helping plateaued employees deal with the negative emotions they experience as a result of feeling stagnant in their careers either hierarchically or in terms of the scope of their job. For example, stress management classes might help both groups of employees re-focus their thoughts and deal with their emotions in a positive way. Spending time engaging in non-work activities, whether relaxing with friends or exercising or pursuing other leisure activities would seem to be similarly beneficial in distracting individuals from the negative thoughts and feelings they might hold regarding their career progression or job responsibilities. Therefore, we expect non-work activities to be similarly beneficial as a coping strategy for both hierarchically and job content plateaued employees.

**Proposition 4:** Engaging in non-work activities is an adaptive coping strategy for

a. hierarchically plateaued employees and

b. job content plateaued employees.

Mental coping refers to employees efforts to cope with plateauing by making the situation less personal, accepting it, engaging in positive thinking, waiting, controlling one’s emotions, and ignoring the problem. Mental coping also is likely to be beneficial for both hierarchically and job content plateaued employees. For hierarchically plateaued employees who might feel angry about their lack of advancement, realizing that organizational constraints may exist (making the situation less personal) might help improve their reactions to being plateaued. Likewise, either deciding to accept the problem or give it time to improve might be mental coping strategies these employees find useful when failing to receive a promotion. Job content employees who perceive their lack of challenge as a result of personal shortcomings might also find it useful to view the situation in a less personal manner. They, too, might decide to accept the lack of challenge on their jobs or engage in waiting or positive thinking that the situation will improve. Similarly, controlling their emotions is likely a strategy hierarchically and job content plateaued employees might find equally useful.
**Proposition 5:** Mental coping is an adaptive coping strategy for
a. hierarchically plateaued employees and
b. job content plateaued employees.

Lastly, McCleese et al. (2007) defined *side work* as employees’ attempts to cope with being by taking on work outside of their regular job. Hierarchically plateaued employees would be unlikely to take on additional work as a way to cope with a lack of promotions in their careers. On the other hand, job content plateaued employees may see this as a viable option for increasing the amount of challenge or responsibility required in their lives. That is, they might find something challenging in a weekend job that fulfills a need not being met in their full-time roles.

**Proposition 6:** Side work is an adaptive coping strategy for job content plateaued employees.

*Figure 1* below summarizes the information on the coping strategies that are proposed to work for hierarchical plateaued employees and job content plateaued employees. It is proposed that four coping strategies would be effective for hierarchical plateaued employees while five coping strategies would be effective for job content plateaued employees. Effective coping strategies would act to reduce plateau feelings and/or negative consequences such as plateau-related stress or depression, and might end up eliminating the plateau altogether. In cases where the coping strategy is not effective, the employees may try the same coping strategy again or chose a different coping strategy (the first loop back in the diagram). In cases where the coping strategy is effective in reducing plateau feelings, the strategy may be repeated as an adaptive coping strategy (the second loop back in the diagram). The ideal situation would be where a coping strategy or successive loops back to various strategies may eliminate the career plateau altogether.

**Figure 1:** Proposed coping strategies for hierarchical and job content plateau employees

**DIRECTIONS FOR FUTURE RESEARCH**

The conceptual model presented in this paper highlights the need for longitudinal research examining the effectiveness of coping on reducing the impact of plateaus on a variety of important employee outcomes. Further, existing research that focuses only on employees (e.g., McCleese, et al., 2007) overlooks the important point that non-employees may hold the key to understanding the most effective ways to either cope with or avoid plateauing altogether. For those that were plateaued but no longer are, it is important to understand the strategies they used to overcome their plateaus. Alternatively, for those that have never been plateaued, what characteristics do these individuals possess that make them resilient to the experience of a plateau?

We find it interesting that networking is a strategy that has not been examined in existing research on plateaus and wonder whether this is because it is not an important strategy for dealing with plateaus, it is subsumed by other coping categories (e.g., discuss the problem), or if it may only be useful for certain populations, which have yet to be studied. This highlights the importance of future researchers to continue exploring the range of copings strategies employees adopt to deal with their career situations.
Upon identifying the full range of coping strategies used by employees, we also encourage future researchers to consider the relative impact of the various coping strategies in reducing the plateau (or its consequences). In other words, what is the most important coping strategy? Which strategies reduce and which strategies eliminate career plateaus?

**CONCLUSION**

The model throughout this article attempts to explain how coping strategies might differ in effectiveness based on the type of plateau employees experience in their careers. Further, this model offers explanations about how coping strategies can be effective in reducing the negative consequences generally associated with plateauing or, ultimately, removing the plateaued status of individuals’ careers altogether. We hope that the discussion and framework presented here will stimulate further critical thinking and research on the topic of coping with plateaus in order to better assist managers and employees in dealing with these widespread career phenomena.

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RELATIONAL AGGRESSION: A PRECURSOR TO WORKPLACE BULLYING?

Phillip L. Davidson

University of Phoenix, USA

ABSTRACT

Workplace aggression, in the form of bullying, increases every year. This form of “non-violent” aggression, typically referred to as relational aggression, has its roots in our biology and our social constructs. Researchers have studied and provided interventions, but with little success. One reason for lack of progress may be a lack of understanding of the possible fact that some individuals attach a positive value to relational aggression, as has been suggested by earlier research. If there is a positive aspect to non-violent aggression, then interventions to stop such bullying may be unsuccessful, which is the result typically seen in school intervention programs. Equally important, if there is a positive aspect to non-violent aggression, that behavior may continue into adulthood and express itself in the workplace. Workplace statistics suggest that this is the case as workplace aggression and bullying continues to increase and is a significant issue in some industries, such as healthcare. Organizational leadership may also be a catalyst for positive perceptions of relational aggression. This study focuses on an attempt to clarify the root causes of relational (non-violent) aggression and its relationship to gender, age, socioeconomic status, and ethnicity. Linkage to organizational leadership is also considered and results of a pilot study are reported.

Keywords: Bullying, Workplace Aggression, Relational Aggression, Non-violent Aggression, Socioeconomic Status, Organizational Leadership.

RELATIONAL AGGRESSION: A PRECURSOR TO WORKPLACE BULLYING?

Media coverage of events involving violence and aggression, especially in the workplace, are ever-present. A research report by Baron and Neuman (1996), written nearly 15 years ago, noted, “Recent news reports have focused attention on dramatic instances of workplace violence – extreme acts of aggression in work settings” (p. 161). The same headline could easily appear in 2011. Baron and Neuman also noted that, although the news focused on cases of extreme violence, most aggression in the workplace is verbal and indirect.

The number of aggressive events is increasing, not decreasing, despite the work by many behavior researchers. The FBI (2004) reported increasing acts of aggression in the workplace, with an estimated 1.7 million acts of aggression. Aggression comes in many forms, as noted in the FBI report, including violent acts to more benign acts known as bullying or relational aggression.

The purpose of this paper is to look at relational aggression, its origins, and its implications in workplace bullying. Study of non-violent aggression goes back many decades, and has possible ties to organizational leadership as well as developmental biology and developmental psychology. The intent is to determine if there might a positive association with relational aggression and a link between that perception, workplace bullying, and organizational leadership.

BACKGROUND OF THE PROBLEM

The early work by Lewin, Lippitt, and White (1939) focused on studying the causes of aggression in young children. The researchers were meticulous in establishing the protocols for their research and limiting the number of variables studied. The method used included observation and detailed notes, as well as interviews with parents, teachers, and the students, which provided phenomenological meaning to the observational data. The action research model provided a tool for later researchers in studying personality in motion.

The research by Lewin et al. (1939) also provided a rich platform for researchers and practitioners of personality-related behaviors because Lewin et al. did not try to explain the behavior in detail. Lewin et al. did offer explanations, but they were tentative, and not the focus of the original study. The original study focused on seeking cause-and-effect relationships.

The research also focused on the relation of aggression to leadership styles.

The importance of the original study by Lewin, Lippitt, and White (1939) stems from an attempt to understand group dynamics among young children. It is potentially important to understanding the functionality of aggression and how children interrelate,
as these behaviors tend to perpetuate into adulthood. Boulton (1999) noted the importance of understanding how children interact with one another in groups. Longitudinal studies, such as those by Boulton, demonstrated the need to understand issues around aggression, bullying, and victimization from the perspective of the victim as well as that of the aggressor.

Relational Aggression

Relational aggression is manifest through ostracism and spreading of rumors about an individual (Rose & Swenson, 2009). The same sort of behavior was noted in the Lewin et al. (1939) study when anxiety and aggression was high, and club members would select a teammate as a scapegoat. Defining types of aggression, however, can be a challenge. Crawshaw (2009) provided 33 different terms to describe workplace acts of aggression. Struch and Schwartz (1989) focused on relational aggression and suggested there is a relationship between the strength of in-group relationships and aggressive acts against outside groups. The focus of this current research is to limit the focus on aggression to relational aggression.

Struch and Schwartz (1989) also noted that forming in-groups provides “positive social identity” (p. 365). LeShan (1958) noted that seeking social identity is a driving force justifying aggression, especially in certain ethnic and low economic status individuals. Understanding the relationship between the etiology and norms around aggression is important. Knowing how this behavior evolves into the workplace may lead to a better understanding of workplace violence, specifically bullying.

Etiology

The issue of workplace acts of aggression has roots in human development. Huesmann (1988) presented a model of aggressive behavior that develops from repetitive scripts acquired early in life. The consistent repetition of these scripts during the formative years of a child makes the child’s behavior resistant to change, and these mental scripts “persist into adulthood” (p. 13).

Significant research exists demonstrating a large biological component in aggression. The biological basis of aggression is controversial (Nelson, 1974), yet the evidence for biological catalysts of aggression is extensive. Much of the biological research on the origins of aggression also focuses on differences in how genders manifest aggressive behavior (Hess & Hagen, 2006; Cole, 2007).

Hess and Hagen (2006) reported that young boys tend be more physically demonstrative expressing aggression; young girls tend be more indirect. “Virtually all studies of adults have found a sex difference in physical aggression, but most have failed to find sex differences in the use of more indirect forms of aggression” (p. 231). Hess and Hagen’s research reported those differences, finding females used indirect aggressive more extensively than males. Cote (2007) reported similar results, suggesting that young boys are be more physically aggressive and the tendency declines as males grow older; the use of indirect aggression in females increases as they grow older. Gender consideration in aggression research is important.

Reinforcement of the Problem

Students who saw themselves as outsiders to popular groups expressed the opinion that relational aggression is both the norm and expected behavior by popular students (Huesmann, 1988; Rose & Swenson, 2009). Dodge, Coie, Pettit, and Price (1990) noted aggression manifest in play activities in early school years was a way to establish peer status. Research by The Metropolitan Area Child Study Research Group (MACS, 2007) noted that children from lower-income families found an advantage in expressing aggression. LeShan (1958) suggested that recognition for being aggressive is a way to establish identity. Puckett, Aikins, and Cillessen (2008) also noted a positive relationship between relational aggression and social status, leadership, and cooperation.

Previous Research

The causes of workplace aggression shape the focus of research. Hershcovis, Turner, Barling, Arnold, Dupre, Inness et al. (2007), through meta-analysis, provided multiple perspectives on past research. Situational indicators exist that have predictive value at the individual level. Different predictors exist for organizational analysis, depending on placement of the individual within the organization. Different individual traits and biology, plus situational factors all play a part in predicting the likelihood of workplace aggression.

PROBLEM STATEMENT

The general problem is that acts of aggression and violence in the workplace continue to escalate (FBI, 2004). Research in aggression has many diverse facets (Crawshaw, 2009), making comparisons and analysis difficult. Most research focusing on
aggression assumes that aggression is negative, even though there might be a strong biological imperative for its expression (Hall & Hirschman, 1991).

The specific problem is that a lack of understanding of the etiology and dynamics of aggression in the workplace limits the ability of leadership to act affectively. It is also possible, based on the research by Lewin et al. (1939) that leadership may be a catalyst for some forms of workplace aggression. Creation of an accurate topology (Bing et al., 2007) considering gender, ethnicity, and socioeconomic status could provide more effective leadership tools for managing aggression in the workplace. Lack of these tools is frustrating and counterproductive.

PURPOSE OF THE RESEARCH

The purpose of this paper is to suggest a research approach to the study of workplace aggression incorporating an acceptance of both the biological and sociological basis of aggression. If aggression in the workplace is not decreasing, despite multiple interventions (Ferris, 2009), one possibility is that some forms of aggression have value, either to the individual or to the organization.

SIGNIFICANCE OF THE STUDY

Baron and Neuman (1996) describe workplace aggression as intent to do harm to fellow workers. Most research studies focus on the attempt to measure, predict, or assess the likelihood of acts of aggression or violence in the workplace. What researchers ignore are the potentially positive consequences to the actions under study. Aggressive behavior, especially relational aggression, may have a real or perceived value by those in and outside the circles of power. Understanding the perceptions of employees, both aggressors and recipients of aggressive action, could provide new insights for organizational leadership and provide effective utilization of personnel. Additionally, if leadership style plays a role in employee aggressive behavior, such findings could modify how organizations address workplace aggression.

RESEARCH METHOD AND DESIGN APPROPRIATENESS

The research in this paper is yet to be completed. A pilot study was conducted. The completed research will occur in two phases. The first is the pilot study (completed). The second and final portion of the study would ideally involve a larger group of employees within several corporations with clearly defined leadership styles.

The Pilot Study

The pilot study involved a convenience sampling to ten participants agreed to the study by answering 10 questions from a modified EXPAGG survey. (Campbell, Muncer, & Coyle, 1992). Nine surveys were completed and used in the quantification of the results. The assessment measured instrumental (I) and expressive (E) aggression based on projected responses to aggressive settings. Each participant also provided gender, ethnic background, age, and socioeconomic status of family. The participants were all adults.

Results of Pilot Study

![Figure 1: Instrumental and expressive aggression by gender. Three females (F1-F3) and six males (M1-M6) took part in the survey.](image-url)
Figure 2: Instrumental and expressive aggression by ethnic background. Reported ethnic backgrounds included three African-American, one individual of Asian ancestry, and five white, non-Hispanics.

Figure 3: Instrumental and expressive aggression by Age. Each participant projected their possible age when similar situations had occurred in their life. The participants were significantly older.

Figure 4: Instrumental and expressive aggression by family socioeconomic status.
Discussion of Results

Previous research stated that men, when asked, described their aggressive behavior as more instrumental than expressive. Women suggested the opposite, viewing aggression as more personal (Driscoll, Campbell, & Muncer, 2005). Figure 1 data conforms to the research by Driscoll, et al. with males averaging 3.2 compared to females at 2.0 on the instrumental scale.

The small number of participants does not provide significance for any of the data. Figure 1 does suggest agreement by Driscoll et al. (2005). Figure 2 provides no relevant information about breakdown of aggression styles along ethnic groupings. Again, the small number (Asian = 1) does not provide enough data.

The issue of age was interesting as the participants in the survey are all adults. In the pilot, the participants were asked to recall a time when these events were important to them and offer a projected age. Figure 3 suggests a slight convergence as participants projected older ages.

Figure 4 displays data about family socioeconomic status. Participants provided information regarding family income based on terms ranging from poor to wealthy. The scale from 2 to 9 indicates increasing prosperity, two being poor, and 9 being wealthy. The data is too small a sample for accurate prediction; however, there is a suggestion that more physical aggression or dominance might have a place with the poor and the wealthy. Overall, however, expressive aggression (relational aggression) is the dominant form for the participants in this study.

Future Research

This research will use a quantitative multivariate analysis of variance (MANOVA) with ethnicity, family income, and gender as the independent variables. Dependent variables consist of responses to a modified EXPAGG (Campbell, Muncer, & Coyle, 1992) scale. Responses to the four additional positional questions will be dependent variables as well. The 10-item EXPAGG scale (Driscoll, Campbell, & Muncer, 2005) is a “psychometric measure of social representations of expressive and instrumental aggression” (p. 222). Expressive and instrumental aggression is synonymous with relational aggression in this study. The four additional questions relate to expectations about leadership, control, and aggression. Survey delivery will be through the internet. Participants will be employees of several large organizations.

Multivariate analysis is the most commonly used method of between-group comparisons (Cole, Maxell, Arvey, & Salas, 1993). Another alternative is structural equation modeling (SEM), and both led to similar substantive interpretations. However, when there is a conceptual relationship between variables, MANOVA is the method of choice.

RESEARCH QUESTION AND HYPOTHESES

Research Question: Is there a relationship between gender, ethnicity, or socioeconomic status and an individual’s perspective on the value of relational aggression?

H1a: No relationship exists between gender and an individual’s value of relational aggression.

H1b: There is a positive relationship between gender and an individual’s value of relational aggression.

H1c: There is a negative relationship between gender and an individual’s value of relational aggression.

H2a: No relationship exists between ethnicity and an individual’s value of relational aggression.

H2b: There is a positive relationship between ethnicity and an individual’s value of relational aggression.

H2c: There is a negative relationship between ethnicity and an individual’s value of relational aggression

H3a: No relationship exists between socioeconomic status and an individual’s value of relational aggression.

H3b: There is a positive relationship between socioeconomic status and an individual’s value of relational aggression.

H3c: There is a negative relationship between socioeconomic status and an individual’s value of relational aggression.

PROJECTED DATA ANALYSES

Analysis will focus on data from at least 200 nonmanagement employees (100 male, 100 female) in a stratified random population sample. The data will consist of responses to a modified EXPAGG survey with 10-item Likert-type (1 = strongly disagree and 5 = strongly agree) (Appendix). Three additional demographic questions regarding gender, ethnic background, and socioeconomic status will be part of the survey.
The size of the participant group will need to be large enough to provide statistically significant confidence levels for each of the three independent variables. Descriptive statistics on the demographics as well as on the results from the EXPAGG will provide a means for testing group cohesiveness and distribution. Correlational analysis between the independent and dependent variables will provide insight into relationships. A multivariate analysis (MANOVA) will provide comparative data between the three primary groups.

RELIABILITY AND VALIDITY

Alpha reliability coefficients for the EXPAGG were 0.83 for the instrumental questions and 0.81 for the expressive questions. (Smith & Waterman, 2004). In research by Gomez, Luis, Andreu, Rogers, Lasprilla, and Carlos (2003), validity and reliability of the tool was statistically significant when measuring different styles of aggression. “The ten-item model gave a chi-square value of 157.91 (p < .001)” (Driscoll, Campbell, & Muncer, 2005, p. 226).

As noted by Weinhardt, Forsyth, Carey, Jaworski, and Durant (1998), there are questions about the reliability of self-reported data, especially data with a strong emotional component. Weinhardt et al. suggested that response bias (intentional misrepresentation) is a concern. Weinhardt et al. suggested the use of testing and retesting the same individuals is effective for establishment of test validity. Using different testing modalities will enhance this.

The 10-item EXPAGG has already demonstrated good internal and external validity. Validity testing of the four positional questions is necessary. A pilot study (possibly involving multiple iterations) will establish validity of the last four questions. A small group of volunteers will take the survey both through the internet and through a written survey form (test and retest). Follow-up interviews will both help refine the questions and establish validity.

INTERNAL AND EXTERNAL VALIDITY

Issues to internal validity will primarily be a threat during the pilot phase. Dropout rate could be an issue during this phase, which could be a problem as the group will be small. Researcher bias and expectancy around responses to the four positional questions is a concern. Only the primary researcher will meet face-to-face with the pilot participants.

Selection of the participant group will be by convenience, stratified sample. Keeping the participants to three similar organizations removes some moderating variables due to the different organizations, yet provides greater variability in leadership. Restricting participants to one organization might reduce generalizability and external validity of the findings. Future research will address this issue.

Setting of the testing could be an issue to both internal and external validity. Internet surveys are ubiquitous, yet not everyone may have equal access. Care in providing anonymity and avoiding any substantive conflict with the normal routine of the participants is important.

ETHICAL ISSUES AND CONCERNS

No individual will suffer undue stress because of this research. All participants will receive a full explanation of the purpose of this research. All participants will sign an informed consent form, or check the appropriate box for the internet survey. All surveys, except for the pilot, will be anonymous. The participants will not experience more stress than they would experience in a normal workday. The internet survey will not collect participant names. Their electronic informed consent included with the survey has no personal identifiers. No names will appear on the written surveys, only numbers. Numbers will provide a means to match written to internet surveys and interviews. The researcher will keep all data in a secure safe to which only the researcher has access. Destruction of the raw research data will take place after three years.

REFERENCES


APPENDIX

Survey Questions
Formatted to a Likert-type scale (1 = strongly disagree and 5 = strongly agree)

Expressive Items (Driscoll, Campbell, & Muncer, 2005).
1. During a physical fight, I feel out of control.
2. After a physical fight, I feel drained and guilty.
3. I believe that my aggression comes from losing my self-control.
4. When I get to the point of physical aggression the thing I am most aware of is how upset and shaky I feel.
5. In a heated argument, I am most afraid of saying something terrible that I can never take back.

Instrumental Items (Driscoll, Campbell, & Muncer, 2005).
6. I feel that physical aggression is necessary to get through to some people.
7. If I hit someone and hurt them, I feel as if they were asking for it.
8. In an argument, I would feel more annoyed with myself if I cried than if I hit the other person.
9. The best thing about physical aggression is that it makes the other person get in line.
10. If someone challenged me to a fight in public, I'd feel cowardly if I backed away.

Positional items
11. I expect leaders to have a close group of friends and advisers.
12. It is appropriate for leaders to ignore or ridicule people who will not agree with them.
13. Strong leaders are aggressive and take control.
14. Leaders who listen to everyone equally are weak leaders.
ABSTRACT

The purpose of the study was to find out the influence of workplace facilities and social support on lactating working mothers’ level of involvement at work. The subjects for the study were two hundred and sixty lactating working mothers who were working full time from five different organizations in the Accra Metropolis in Ghana with age range of 24-41 years, mean age of 32.2 and a standard deviation of 8.8. Data were analyzed using descriptive statistics of mean, standard deviation and Analysis of Variance (ANOVA) was used at 0.05 levels of significance. The findings of the study revealed that, lactating working mothers who get workplace facilities such as flexible work options and lactation breaks at the workplace involved themselves more at work than those lactating mothers who lack these facilities. The study also revealed that, lactating working mothers who get social support at home also get themselves involved more at work than those who get social support at work and also those mothers who do not get any social support at all. This paper, therefore, suggests that employers should provide workplace facilities for lactating working mothers who want to continue the practice of exclusive breastfeeding when they return to work, Since the provision of workplace facilities benefit both the employers, the child and the working mothers. Family members of lactating mothers who are working full time especially fathers are encouraged to support their wives since the lack of social support at home do affect their output and involvement at work. The result of this study is to help policy makers in Ghana to have a second look at the Ghana labour Act (2003) about employment of women especially lactating mothers who want to continue the practice of exclusive breastfeeding with full time work. The findings will also educate employers in Ghana about the benefit of workplace facilities for lactating working mothers and the organization as a whole.

Keywords: Workplace Facilities, Lactating Working Mothers, Organizational Commitment, Job Satisfaction, Ghana.
IMPORTANCE OF ESTABLISHING CLEAR LINK BETWEEN CSF AND KPI IN CONSTRUCTION

Bita Seyfi and Pooria Rashvand
Universiti Teknologi Malaysia, Malaysia

ABSTRACT

The research about project success and the critical success factors (CSF) are all about to improve the effectiveness of projects. But by large amount of research in this area, there is still no reliable explanation of the term project success. The traditional definition of success always lead to the Iran triangle, Time, Cost and Quality. These traditional measures are too crude to be used for gauging the project success. CSF is another issue which defined as those few things that must go well to ensure success for a manager and an organization. There seems little agreement on these issues between the stakeholders in construction project. This study attempts to highlight the importance of linking the CSF and success criteria for each project participant’s performance in order to make it understandable for all participants to measure project success with the specific criteria.

Keywords: CSF, KPI, Performance Measurement.
ACCOUNTING MAJORS AND PROFESSIONAL ETHICS: A SURVEY

Siriyama Kanthi Herath¹ and Laksitha Maheshi Herath²
¹Clark Atlanta University, USA and ²North Atlanta High School, USA

ABSTRACT

This research is expected to investigate accounting majors’ reactions to the accounting scandals and to evaluate the extent to which they are familiar with the scandals. The research will also observe the students’ opinions of corporate managers and accountants, and the subsequent effects on their educational and career plans. Accounting students (Undergraduate Juniors and Graduate Students in the Master of Accounting Program) at Clark Atlanta University will be surveyed using an instrument developed based on Forsyth’s ethics position questionnaire to evaluate the students’ responses to accounting scandals and professional ethics. The survey instrument measured students’ demographic data, their knowledge of the accounting profession and scandals, and how the scandals affected their opinions and future career plans. The data will be analyzed using linear regression. The current research is conducted at an HBCU. These results will be compared with results obtained from a similar study conducted at a non-HBCU.

Keywords: Accounting Majors and Professional Ethics, Survey, Scandals, HBCU.
MARKET VALUE IMPLICATIONS OF BUSINESS COMMUNICATION

Uma Sridharan
Lander University, USA

ABSTRACT

On March 18, 2003, the shares of Geron Corp (Nasdaq symbol GERN) rose 143 percent on news reports that the firm’s experimental cancer vaccine could be effective against all types of cancer. This paper examines the impact the nature of business communication can have on firm valuation and market efficiency in assimilating public information into stock prices.

Keywords/phrases: Market Efficiency, Firm Valuation, Market Value, Business Communication, Nasdaq.

1 Please do not quote without author’s permission.
IMPORTANCE OF THE STRATEGIC & OPERATION PLANS UNDER THE STATE COOPERATIVE AGREEMENT

Maurice Eugene Dawson Jr.\textsuperscript{1}, James Truesdale\textsuperscript{2} and Joshua Robinson\textsuperscript{3}
\textsuperscript{1}Alabama A&M University, USA, \textsuperscript{2}Carnegie Mellon University, USA and \textsuperscript{3}Morgan State University, USA

ABSTRACT

Health Information Technology (IT) has become an important topic within the health community in the last several years. Technology has become intertwined in all facets of our lives from smart phones to simple robotics but the health care industry has not fully incorporated all these new technologies in every day practices. However the health care industry is actively working toward a systems concept that allows interoperability as the ones currently in fielded act as independent closed systems. The health care community aims to integrate tools such as tablets, laptops, and Open Source Software (OSS) applications that allow for paperless records to include increasing accuracy in the hospital room with the capture of patient data. Many states must update their status in relation to the Strategic and Operation Plan under the State Cooperative Agreement. Key items of importance are the following; governance, policy/legal, technical infrastructure, business and technical operations, communications/marketing, and relationships to Medicaid/Medicare. Moving forward it is essential to compare and contrast different states to provide a larger view of the status of being compliant with the Strategic and Operation Plan under the State Cooperative Agreement.

Keywords: Health Information Technology, Health Information Exchange, Information Infrastructure
IMPACT OF SAS 99 ON ORGANIZATIONS

Nhoj-Trebor Steede
Clark Atlanta University, USA

ABSTRACT
In recent times, attention that is more public has been given to fraud discoveries. It is often during tough economic times that fraudulent behaviors are discovered due to a lack of cash flow resources. To compensate for the shortcomings companies often overlook controls to compensate. Statement of Auditing Standards No. 99: Consideration of Fraud in a Financial Statement Audit, addresses the notion of suggested procedures that should be performed by auditors to best identify the fraud while on an audit engagement. This paper will address the impact of SAS 99 on organizations and the deficiencies to better capture and detect fraud within organizations. This research will carry out a review of published articles in major accounting journals for the period from 2005-2011.

Keywords: SAS 99, Fraudulent Behaviors, Compensate for the Shortcomings.
REATIONS OF EUROPEAN FINANCIAL MARKETS TO THE US FINANCIAL CRISIS

Hong Rim and Robert Setaputra
Shippensburg University, USA

ABSTRACT
This study is to examine the impacts of the US financial crisis in 2008 on financial markets in Europe by using the GARCH model. This study uses daily returns of 9 stock market indexes during November 2003 – June 2011. Some notable findings are: 1) the US influence remained strong in Europe; 2) the US market became more integrated with European markets; 3) the speed of adjustment significantly decreased; and 4) there had been observed strong spillover effects from the US to European markets during the crisis. In sum, the results suggest that there is much less diversification benefits to be exploited in European markets.

Keywords: Financial Crisis, Integration, Spillover, GARCH (Generalized Auto-Regressive Conditional Heteroskedasticity) Model, Market Index, Adjustment Speed, and Diversification Benefits.

I. INTRODUCTION
In recent years, many countries began implementing financial market reforms such as liberalization (more international trade, cross-border investing), privatizations, and the establishment of regulatory and supervisory frameworks. These reforms spur domestic economic growth, financial market development, integration, increased market capitalization, and enhanced activities in global financial markets (Schmukler, Gozzi, and De La Torre 2007). The financial openness of this nature was expected to promote development of domestic financial sector and enhance efficiencies for domestic firms by exposing them to competition from foreign entrants. The past decade was marked by various crises, namely the Asian economic crisis in 1997, the Russian default in 1998, the Internet bubble collapse in 2000, and the Brazilian stock market crash in 1997-1998 and 2002. There has been great attention to the seriousness and global extent of the US financial crises and its contagious impacts on other economies. Thus, the transmission of shocks to other countries and the inter-market relationships have long been of great interest to academics, fund managers, traders, and policy makers. Empirical studies show that economic/financial crises are spread from one country to the other, generating the “contagion phenomenon.” The financial contagion effect has been examined around the notion of “correlation breakdown,” which implies a significant increase in correlation during the crash period.

Empirical studies show that the correlations among developed financial markets have significantly increased in the recent decade, suggesting more financial market integration. The benefits of financial market integration lie in more efficient way of allocating financial resources and sharing investment risk. In integrated financial markets, it has long been of great interest how some economic/financial shocks originated in one country affect other financial markets around the world. The US financial crisis in 2008 spread fast to other countries through highly integrated financial markets, affecting the operations of many MNCs and the lives of numerous individuals around the world. The causes of the collapse and subsequent surge in global capital flows remain an open and highly controversial issue. Fratzscher (2011) notes that major crises and changes to global liquidity and risk had significantly affected capital flows both during the crisis and recovery periods. The financial crises of this nature could have changed the financial fundamentals and the relationships between financial markets with different degrees of openness. Thus, there have been scant evidences on how serious impacts the U.S. financial crisis had on financial markets in Europe, the degree of financial integration, and the volatility spillovers between financial markets around the world. Kantor and Holdsworth (2010) showed that the global economic slump revealed a severe collective underpricing of financial risk.

The objective of this study is to 1) examine impacts of the U.S. financial crisis in 2008 on European financial markets; 2) examine the speed of adjustments to the shock(s) caused by the U.S. crisis; and 3) analyze the volatility spillovers between the U.S. markets and European markets. This study proceeds as follow. Section II provides literature review. Section III discusses data and empirical results. Summary and Conclusion follow in Section IV.
II. LITERATURE REVIEW

One group of studies examined impacts of major events on the path of financial integration. Gosh et al. (1999) found three types of stock markets with distinctive features during the Asian crisis: one group (e.g., Hong Kong, Korea, and Malaysia) was greatly influenced by the US stock market; another group (e.g., Philippines, Indonesia, and Singapore) by the Japanese stock market; and the third group (i.e., Thailand, Taiwan) not affected by any other markets. Worthington et al. (2003) noted that the relationships between developed and emerging stock markets became weaker after the Asian crisis. Yang et al. (2003) noted that both long-run cointegrations and short-term causal linkages between stock markets became stronger during the Asian crisis; and the US market had significant impacts on financial markets in Asia. Fooladi and Rumsey (2006) reported that despite increased integration (January 1988 to June 2000), diversification benefits (measured in US dollars) persist, and the increased co-movements between stock markets (in local currency) became counterbalanced by increased volatility of exchange-rate movements. Forbes and Rigobon (2002) found strong co-movements between stock markets after the Mexican peso crisis (1994), the Black Monday (Oct. 1987), and the Asian economic crisis (1997).

Another group of studies examined the impacts of some policy (e.g., NAFTA) implementation. Kanas (2000) provided strong evidences of volatility spillovers from stock returns to exchange rates but not from exchange rates to stock returns in six countries (i.e., U.S., UK, Japan, Germany, France, Canada). This finding is consistent with the notion that international financial markets have become increasingly integrated. Darrat and Zhong (2005) reported that Asian stock markets have long-run relationships before the NAFTA, but not after its implementation. Jorda, Schularick, and Taylor (2010) reported that 1) financial crises are typically preceded by increasing current account deficits and significant credit and money growth; 2) downturns associated with financial crises lead to deeper recessions and to stronger subsequent turnarounds in imbalances than normal business cycle downturns; and 3) external imbalances have played a major role in generating financial crises. Saleem (2008) found that there is a direct linkage between the Russian equity market and the world markets in relation to returns and volatility, and the Russian equity market was only partially integrated into the world market at the time of the crisis.

III. EMPIRICAL RESULTS

This study uses daily returns of MSCI (Morgan Stanley Capital International; Data Stream) Market Indexes during November 2003-June 2011. This study uses 9 stock market indexes, including such countries as the U.S., UK, France, Germany, Swiss, Italy, Spain, Greece, and Turkey. To better account for its impacts, this period is divided into 2 sub-periods, Period 1 (2003.11~2007.12; before the crisis) and Period 2 (2008.1~2011.6; during the crisis). This period is chosen because of the two major events, the U.S. financial crisis in 2008 and the European crisis in 2009-2011. The impacts of the U.S. financial crisis are examined by using the generalized autoregressive conditional heteroskedasticity (GARCH) model (Engle (1982), Bollerslev (1986)).

Table 1 (not reported here) provides the correlation coefficients ($\phi$s) before and during the US crisis. The average $\phi$ between the US and European markets increased as much as 34.4% from 0.3988 before the crisis to 0.5361 during the crisis. The average $\phi$ between European markets increased around 10.5% from 0.7260 before the crisis to 0.8203 during the crisis. The results imply that European markets became more integrated with the US market and each other during the U.S. crisis. Before the crisis, the highest correlation (0.9229) is observed between France and Germany, followed by 0.8792 between France and Italy. The lowest correlation (0.3743) is observed between Swiss and Turkey, followed by 0.3808 between Italy and Turkey. During the crisis, the highest correlation (0.9384) is observed between UK and France, followed by 0.9158 between France and Germany. The lowest correlation (0.5524) is observed between Greece and Turkey, followed by 0.5769 between Swiss and Turkey. The results suggest that the increasing $\phi$s during the crisis reduced the benefits of portfolio diversification across financial markets in Europe. The next step is to examine the impacts of the US crisis on financial markets in Europe, using the GARCH (generalized autoregressive conditional heteroskedasticity) model (Bollerslev1986). Since the GARCH model (Engle 1982) considers the variances of the current and previous error terms, it is good for financial time series with time-varying volatility clustering to identify how financial event(s) affects equity returns. To this end, the following GARCH model (Engle 2001) is used:

$$r_t = \alpha + \beta_1 r_{ut} + \varepsilon_t$$

$$\sigma^2_{it} = \omega_0 + \alpha_1 \varepsilon^2_{i,t-1} + \alpha_2 \sigma^2_{i,t-1}$$

where $r_t$ is an individual (“$i$th country”) market return at $t$; $r_{ut}$ is the US-market return; $\varepsilon_t$ is an error term for “unexpected and idiosyncratic shock”; $\sigma^2_t$ is conditional variance; $\varepsilon^2_{i,t-1}$ refers to the ARCH effect; and $\sigma^2_{i,t-1}$ refers to the GARCH effect.
Model (1) is a function of exogenous variables (i.e., the US crisis factor) with an error term: An individual market return is affected by the US financial crisis and an unexpected contemporary shock (i.e., error term, $\varepsilon_t$). The coefficient $\beta_U$ reflects the US market influence. Model (2), the conditional variance ($\sigma^2_t$) equation, reflects the ARCH effects of innovations (i.e., $\varepsilon^2_t$) and the possibility of volatility spillover effect (i.e., GARCH error on $\sigma^2_t$). This model suggests that the conditional variance ($\sigma^2_t$) is determined by three factors, the mean ($\mu_t$), the ARCH term ($\varepsilon^2_{t-1}$) (i.e., news-related volatility from the previous period), and the GARCH term ($\sigma^2_{t-1}$) (i.e., previous period’s forecast variance). Empirical results suggest the GARCH (1,1) with the presence of a first order GARCH term and a first order ARCH term.

Table 1 presents empirical results of a GARCH (1, 1) model. For the whole period (Before and During the US crises), the US market had significant impacts on financial markets in Europe. Thus, the US market played a dominant role in European markets. The significant ARCH and GARCH terms suggest that there have been significant spillover effects of volatility from the U.S. market to financial markets in Europe. The significance of GARCH terms supports the financial contagion effects between the U.S. and European markets. The results also suggest that the speed of adjustment decreased as much as 35% with the highest decline for Turkey (60%), followed by Germany (44.3%). For only Italy, the speed of adjustment increased by 4.26%.

<table>
<thead>
<tr>
<th>Country</th>
<th>Before the US Crisis</th>
<th>After the US Crisis</th>
</tr>
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<tbody>
<tr>
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<tr>
<td>TURKEY</td>
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</tbody>
</table>

IV. SUMMARY AND CONCLUSION

This study examined the impacts of the US financial crisis on financial markets in Europe. Some notable findings are: 1) the US influence remained strong in Europe; 2) the US market became more integrated with European markets; 3) the speed of adjustment significantly decreased but Italy; and 4) there had been observed strong spillover effects from the US to European markets during the crisis. The results as a whole suggest that diversification benefits significantly decreased in financial markets in Europe. Empirical studies

REFERENCE


REVENUE RECOGNITION: A LITERATURE REVIEW

Tristian Gee
Clark Atlanta University, USA

ABSTRACT
This paper will contain information on the complex topic of revenue recognition. Throughout this paper, I will examine the revenue recognition model and revenue related transactions such as product and service warranties, merchandise returns, uncollectible accounts, and contracts with multiple deliverables. I will also touch briefly on the standards that the IFRS and US GAAP require regarding revenue recognition. Revenue recognition issues have existed for many years and the methods and requirements have changed multiple times. The purpose of this paper is to cover all circumstances where revenue recognition exist and study revenue recognition issues. This research will conduct a review of literature using major accounting journals for the period from 2005-2011.

Keywords: Revenue Recognition, Revenue Related Transactions, Methods and Requirements.
EXPLORING THE RELATIONSHIP BETWEEN CUSTOMER SATISFACTION AND CUSTOMER LOYALTY IN THE GHANAIAN TELECOM INDUSTRY

Gloria K. Q. Agyapong
University of Cape Coast, Ghana

ABSTRACT

This paper sought to examine the relationship between customer satisfaction and customer loyalty in the utility industry (telecom) in Ghana. The study adapted the SERVQUAL model as the main framework for analyzing service quality. Logistic regression analysis was used to examine the relationship between customer satisfaction and customer loyalty. The results showed an inverse relationship between customer satisfaction and customer loyalty. To test for the significance of the estimated coefficients, the Wald’s statistic was used and customer satisfaction is observed to be significant in explaining customer loyalty even though there is an inverse relationship between these two variables. This inverse relationship indicates that as customer satisfaction decreases, customer loyalty towards the brand still increases. The odds ratio given indicates that the model predicts a probability that based on the current level of satisfaction, the customer will still be loyal. This finding implies that among customers of Vodafone (Ghana), satisfaction is not a basis for loyalty. Some reasons accounting for this result may include the underdeveloped nature of the telecom sector. Also, the other competitive firms have challenges causing dissatisfaction but people are still loyal. So customers switching is not necessarily because they are satisfied or not. Managers of these firms should therefore focus on improving the quality of service as an effective means to increase customer loyalty.

Keywords: Customer Satisfaction, Customer Loyalty, Logistic Regression, Vodafone (Ghana).
REPORTING EQUITY

Ghannelle Johnson
Clark Atlanta University, USA

ABSTRACT
This paper is centered on the theoretical issues associated with recording the various components of equity. The proprietary, entity theory and several other theories may provide a frame of reference for the presentation and measurement of information reported in financial statements. The proprietary theory holds that all profits or losses immediately become the property of the owners, and not the firm, whether or not they are distributed. Under this theory, financial reporting is based on the premise that the owner is the primary focus of a company’s financial statements. The viewpoint of the entity theory places the firm, and not the owners, at the center of the interest for accounting and financial reporting purposes. As revenue is received, it becomes the property of the entity, and as expenses are incurred they become the obligations of the entity. Under this theory, all items on the right-hand side of the balance sheet, except retained earnings belong to the firm. The aim of this paper is to examine the use of several equity approaches when it comes to different perspectives from firms. This research will carry out a review of literature for the period from 2005-2011.

Keywords: Components of Equity, Theoretical Issues, Proprietary Theory, Entity Theory, Financial Reporting, Property.
SECTION 2

SCIENCE & TECHNOLOGY

Integrating Dynamic Posters & Compact Information Systems to Improve Researcher Productivity
LeeRoy Bronner and Onyeka Nwaogu

A Batman Approach to Software Project Management
Eva Sager and Hisham M. Haddad

The Fundamental Law Network
Otis D. Williams

An $\alpha$-Cut Approach for Fuzzy Product
R. Hassanzadeh, I. Mahdavi, N. Mahdavi-Amiri, H. Shafiean and A. Tajdin

Glitz, Glamour and Sustainable Design
Dan May

Melatonin Fluid and AIDS
Otis D. Williams

Recurrent Anterior Cruciate Ligament Injury in a Female High School Multi-Sport Athlete: A Case Report
Jonathan Ratliff and Yvette Bolen

Virtual Worlds for Limited Prototyping, Testing, and Training of Health Information Technology Systems
Maurice Eugene Dawson Jr.

An Anthropomorphic Perspective in Homology Theory
Brett A. Sims

Walking the Talk: Embedding Sustainable Development into Every Day Practice
William Emanuel and James Hunter

Importance of Emerging Technologies in Society for Futuring & Innovation
Imad Al Saeed

The Multi-Facility Competitive Location-Allocation Problem with $M/M/k$ Queue, Based on the Maximum Capture Problem with Price Model
Mojtaba Hasanpour, Iraj Mahdavi and Esmaile Khorram

Leveraging Virtual Worlds for Event Planning
Daniel Sampson and Maurice Eugene Dawson Jr.

Emerging Need for Cyber Security in Sub-Saharan Africa
Augustine Dike and Maurice Eugene Dawson Jr.
INTEGRATING DYNAMIC POSTERS & COMPACT INFORMATION SYSTEMS TO IMPROVE RESEARCHER PRODUCTIVITY

LeeRoy Bronner and Onyeka Nwaogu
Morgan State University, USA

ABSTRACT
The implementation of communication and collaboration in the research community or a project collaborative effort cannot be underestimated. However, this is not the case as partners tend not to be concerned with projects or sub-projects not directly related to their work. Several methods have been researched in order to improve communication and collaboration among project partners. For the purpose of this paper, a Compact Information System that interfaces with dynamic posters has been selected. A Compact Information System is one that houses generated information in compact form, which is, using posters. Unlike the conventional posters, these documents are not simple, static structures, but are very dynamic. The paper discusses collaboration among project partners through implementation of dynamic posters, which are poster patterns brought to life through the incorporation of audio files, video files, and various graphics. These poster patterns are built in blocks, such that they comprise standalone objects or entities stored in a database environment. The posters also cover a myriad of disciplines. More importantly, the concept of interfacing multiple screens with dynamic posters in a database environment is also discussed.
In the paper, Object Oriented modeling is used to analyze a Compact Information System. Such a system can be used to keep track of not only large volumes of generated project information, but to manage administrative and budget related processes. This paper relates solely to the incorporation of dynamic posters in a database environment, however.

Keywords: Posters, Dynamic Posters, Multiple Screens, Objects, Compact Information System, Graphical User Interface.

INTRODUCTION
In any collaboration effort involving large volumes of data, creating an environment for easy management and instant access of information is a challenge. There is always a need for a centralized location in which generated project data can be housed. This is more the case in instances that involve more than one institution.

1.1 Importance of Research
Information Systems can be used for research projects in various fields or disciplines. An example is the Scientific Information System developed by the European Organization for Nuclear Research. This is a database driven system that hosts the entire body of HEP literature consisting of about one million records.

![Figure 2: Overview of Compact Information System](image)

It also serves as the reference scientific information platform for the HEP worldwide. From this standpoint, an Information System for project collaboration efforts is an effective communication enhancement tool.
Having an Information System also allows for an integrated database, aiding effective information management. Thus, a CIS would allow for a simplified database. This is the result of the capability of the system to store information in various formats. An example would be a dynamic poster pattern. Thus, the CIS would be driven by an Object-Oriented database, which allows for storage of “objects”. These objects can be text files, images, or videos. While these “objects” are independent, they also relate with each other to provide relevant information.

A CIS also supports various platforms or functionalities, such as search capabilities and archiving of data. In addition, a multiple screen display system can also be incorporated using dual view technology or other in-built software. Therefore, a user can browse through various poster patterns and view these in detail on separate screens (see Figure 2). This not only produces an effective information management tool, but also enhances user productivity.

1.2 Objectives

The objective of this project is the analysis of a generalized framework for the development of a Compact Information System. This system will integrate Poster Patterns and Multiple Screens for summarized access to research or project information. The system to be designed also interfaces the two aforementioned elements with drill down capabilities. As shown in Figure 3, each unit on a poster pattern can be enlarged and moved to a separate screen for a more detailed view of text, videos, and images.

This system will also be designed to enhance communication and collaboration of research information between partners and institutions. With the generalized structure for the dynamic posters, these posters can be adjusted to fit various disciplines (business, research, social sciences, e.t.c). Finally, the system to be designed is one which supports easy management and instant information access. The analysis of the system will be shown using some Use Cases.

2.1 Literature Review

2.1.1 Scientific Posters

Poster patterns are software generated documents used to deliver messages pertaining to any related discipline in compact form. These documents compress data using comprehensive diagrams and minimal text. Initially, these documents were used solely for research purposes. Over time, however, the use of posters has expanded. Scientific posters have been in use for several decades. Moreover, these posters have been used in various disciplines, across industries. An example is the Apple WWDC Poster session held in Canada in 2007, in which posters were used to represent the various Apple applications.

![Figure 2: Information System Search Capability Using Poster Patterns/Multiple Screens](image-url)
Such applications were related to audio engineering, meteorology, anatomy and many others; hence, the versatility of scientific posters was also publicized. One essence of the scientific posters is their use in enhancing communication and collaboration among researchers and project partners. This can be attributed to the comprehensive nature of posters and their capability to effectively portray the message of a researcher or summarize a project. Much emphasis has also been placed on the design of posters, with the various sections of the posters being arranged such that they can be read from left to right and up to down as shown in the figure below. Furthermore, previous research has proven that images as well as graphs are more effective tools used in relaying poster messages (also shown in the poster below). With regards to this project, the use of scientific posters in the enhancement of communication and collaboration between project partners is directly correlated to the storage of posters in an environment. These posters can be stored in various environments; however, this project looks into the storage of posters in a virtual environment–specifically a Compact Information System.

2.1.2 Information Systems
According to Octium International, an Information System consists of all the resources (machines, people, activities) targeted at gathering and processing of data in order to supply the information need of people both within and outside an organization. These systems are categorized into four main types: Management Information System, Decision Support System, Executive Information System, and Transaction Processing System. The Management Information System, one which caters to the management of organizations as relates to generated information, will be the focus of this project. According to the Natural
Resources Management and Environment Department, a Management Information System collects, transmits, processes, and stores data on an organization’s resources, programmes, and accomplishments. As is the case with general Information Systems, the Management Information Systems also have various types, depending on what they cater to. Some of these are the Accounting Management Information Systems, Financial Management Information Systems, Manufacturing Management Information System, Marketing Management Information System, and Human Resources Management Information System. Another means of categorizing the Management Information Systems are the Databank Information System, the Predictive Information System, the Decision-Making Information System, and the Decision-Taking Information System. For the first group, as relates to this project, the afore mentioned Management Information Systems (Financial, Human Resource, Accounting, e.t.c are relevant). On the contrary, for the second group, the Databank Information System will be realized, with a focus on the storage of scientific posters. The International Poster Journal of Dentistry and Oral Medicine is only one of several projects that illustrate the storage of posters. These posters pertain to a certain field but enhance communication and collaboration between members of this institution across several countries.

METHODOLOGY

As indicated above, a scientific poster is a document that communicates research information using comprehensive diagrams and minimal text. Scientific posters are not new innovations; they have been used to communicate research information over a long period of time. In most instances, these documents can be fully read within a ten minute span. Additionally, the use of these documents is very versatile as they are templates that can be applied in many different fields. For example, Apple hosted a Premiere Scientific Development Poster Session in August of 2007. The posters displayed illustrated the use of Apple Technologies by developers to aid the advancement of Apple applications. This is just one example out of a myriad of others to demonstrate the versatility of scientific poster structures in research or project presentations.

The flexibility of posters also applies in its dynamic form. These documents take the static posters a step further by breaking them into compartments consisting of multimedia and text blocks.

Figure 5 below is an illustration of the data flow of poster patterns in a database environment. The process starts with a researcher developing posters using the Microsoft Power Point presentation tool as well as associated multimedia. The poster design is then input to the database with each section implemented as a standalone object. However, in the database, the standalone objects or entities are linked and used to form the required posters stored in the database. The storage of research data in compact form enables researchers, who work together but are in various locations, login into the database through a Graphical User Interface (GUI). These researchers are able to query posters using keywords or research titles, or researcher, and view these posters in detail by “drilling down” through objects that make up the posters on a separate screen.

![Diagram Showing the Flow of Poster Patterns into a Compact Information System](image-url)
Figure 6 is a medical poster pattern describing comprehensively a robot for pulmonary therapies. In the middle is shown the different blocks that constitute the poster pattern. From this perspective, each block is configured as a standalone unit, coming together to form the poster as a whole. Consequently, each stand-alone unit can be enlarged as a separate entity to derive more detail in video, audio, text, or picture. More importantly, each entity can be enlarged and shown on a separate screen for greater detail. On the far right, these blocks are shown as objects with attributes and operations. As such, metrics such as the relevant software, file type, file format for each object is defined. The objects are also defined by programming languages that have been used for configuration. An example would be a JavaScript language used for the embedding of videos in a poster. Figure 7 also shows an enlarged view of the entities marked in red, with the defined object on the far right of the figure. The objects are also given some form of identification in order for these blocks to be easily located in a database.

Figure 8 below describes the storage of the independent blocks of data in a database environment. It also shows how the pieces interact with each other, thus bringing the message of the poster pattern together. Each object in Figure 8 relates to the objects in the database in a one-to-one relationship. Therefore, in an object oriented database environment, a message or query is executed to access a poster pattern. This could be based on keywords or the title of the poster pattern, and returns each object associated with the poster pattern. However, objects are not returned individually but are returned along with other objects that constitute poster patterns relevant to the keyword or title. Figure 6, in conjunction with Figure 8 shows the compatibility of poster patterns with multimedia technology and multiple screens. From the diagrams mentioned above (Figures 6 and 8), the objects placed in this database form a network in the sense that they are linked to several research or project related multimedia in the form of video, audio, or animation files. Hence, the collaboration of research or project information is greatly enhanced. Communication is also greatly enhanced as contact information on authors of posters is easy to access.

**JHU MEDICAL POSTER PATTERN**  
*(Input To Design Pattern Transformation Process)*

![Figure 6: Scientific Poster Pattern Showing Different "Building Blocks"](image-url)
Using UML modeling tools, such as Use Case diagrams and class diagrams, the requirements of the system can be captured fully prior to implementation. In addition, this methodology gives an objective perspective of the problem domain by describing any system by means of attributes, operations, and associations or relationships. The methodology also allows for encapsulation, allowing for easy modification of the system. Figure 9 below is a use case diagram showing the workings of dynamic posters in a database environment.

In this environment, there are three actors—the project lead, the project member, the public user, and the administrator. Login privileges are given to members of the project collaboration effort, unlike the public user, who can only search for posters and drill down through these posters using the multiple screen technique. The arrows are indicative of the interactions between each activity or Use Case. First of all, the log in Use Case has an "extend" relationship to all the other Use Cases from the perspective of all the actors except the public user. This is as a result of the login privileges. Therefore, the other Use Cases are dependent on the login Use Case. Further, the "precede" relationship shows the activities that have to be carried out prior to subsequent activities. For example, the upload poster Use Case occurs prior to the Update poster and search poster Use Case. The search of a poster, however, has to occur prior to the drilling down of a poster to view its components if desired.

As a result of interfacing the Compact Information System with Multiple Screens, the Drill Down posters Use Case has been highlighted and further analyzed in Figure 10. The Use Case diagram shows that upon searching and displaying a poster on the main screen, the user can view the individual entities or objects of the poster on as many screens as the system has been programmed to display. It is also worthy to note that one poster can contain more than one entity of the same file type.
Based on the Use Cases described above, scenarios are drawn up and classes are derived from these scenarios. As a result of the scope of this paper, only one class will be touched upon. This is the class for the Use Case "drill down through posters".
CONCLUSION

Poster patterns, over the years have been shown to be an effective means of presenting research information in a form that can be easily read within a very short time span. However, the dynamic poster patterns satisfy the instantaneous need for more information on a poster with the implementation of technology. With the posters broken down into blocks or compartments, these can be handled as separate entities or objects. As such, in a database environment, for example, each block can be uploaded into the database and moved using drag and drop technology. This also allows for flexibility as opposed to the static poster patterns in which the document as a whole would have to be revised and re-uploaded into the database.

Further, the dynamic Poster Patterns have shown to be very compatible with multiple screens, aiding the enhancement of productivity for a researcher or an everyday employee. This interfacing can be successfully carried out as a result of the building blocks consisting of text files, audio files, video files, and images. These various data can be drilled down and shown on a separate monitor to view elements of the poster pattern in greater detail.

With regards to Object Oriented modeling, the requirements can easily be captured using Use Cases in the analysis phase before going on to the design phase. With this methodology, the end result of the system put in place is most satisfactory to the involved stakeholders.

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A BATMAN APPROACH TO SOFTWARE PROJECT MANAGEMENT

Eva Sager and Hisham M. Haddad
Kennesaw State University, USA

ABSTRACT
An issue that many development organizations struggle with is how to move forward with development while still maintaining the existing software and being responsive to requests from both inside and outside their development group. The issues have attributed to delays in development and delivery of software applications. Interruptions and side-tracking have also attributed to negatively affect performance. A possible solution is to develop a batman role in the development team. The role of the batman is to act as the first line of defense against all things that might interrupt or otherwise distract other members of the group. The batman’s job is to handle all unexpected requests and unanticipated communication so that the other developers are available to work on scheduled tasks. Having a rotating role for this purpose can be very easy to implement and the benefits of such a role can be great.

Keywords: Batman, Software Maintenance, Development Interruption, Software Development, Collective Code Ownership.

1. INTRODUCTION
There have been many studies on how work interruptions interfere with performance. The information technology research group Basex estimated that 28% of a “knowledge worker’s day” is spent dealing with interruptions. (Spira & Feinturch, 2005) This 28% does not include doing the interrupting task, just simply transitioning from one task to another task and back again. There have been many reports on how disruptive these interruptions can be, but sometimes they are necessary to carry on business. (Bailey, Konstan, & Carlis, 2000) (Mark, Gonzalez, & Harris, 2005) The interrupting task can be mission critical and if left unresolved could cause a critical failure in the system or business. If only we could plan for these unplanned events in a way that could increase productivity. This is where the batman steps in.

Throughout this paper, the batman is referred to as a singular male figure. Of course, the role doesn’t have to be male, nor does it have to be singular. If the project dictates more than one batman, due to the size of the team or the number of unpredictable events, there isn’t any problem with having more than one batman. The batman is a role that can be shaped to meet the needs of the team, but like many other XP and agile paradigms are more useful when followed strictly.

Who is the Batman? It might be nice to imagine the batman as a super hero who comes in and saves the day. In this case the batman, note the lower case “b”, is a role on a development team. (Shore & Warden, 2008) The name comes from a military position, and is derived from the French word bât, meaning “pack saddle”, referring to the person who took care of the saddle bags and other luggage. (Hooker, 2004) (Wood & Wood, 1995) All of the sudden, the batman role may not sound very exciting, but the work that can be accomplished thanks to the batman can be. For the British military, this person took care of all the mundane tasks of the officers so that the officers could do the important duties of officering. For a development team, the batman can prevent the other developers from being interrupted, so they can do the important things that they do.

The batman is a rotating role equally shared amongst the developer team. He has many responsibilities, but his primary role is to act as a shield to protect other developers from getting interrupted or distracted. His job is to deal with the unexpected. (Shore & Warden, 2008) Because his job is to deal with the unexpected, he should never be tasked with a scheduled job, something that should have or could have been predicted and scheduled into the regular flow of business. (Bigler, 2011) He puts out fires, answers obscure questions, and does the research. He answers the support phone, the support email, and/or the support Instant Message.

2. THE BATMAN’S POTENTAIL TASKS
The batman role in the development team may involve various types of tasks, including the following:

- The batman performs any unscheduled, but necessary work for the team.
- The batman acts as primary point of contact for all team communication.
- The batman acts as first line of support for all support requests for the team.
- The batman supports a Batman Knowledge Base.
- The batman reduces technical debt as time allows.
- The batman creates prototypes and research potential technologies.

First and foremost, the batman’s job is to handle any unscheduled work for the team. It has been estimated that 60-70% of all resource for a software team can be spent on maintenance requests. (Pressman, 2010) Anything that can be scheduled should be scheduled for a future release, but anything that must be fixed immediately falls into the hands of the batman. (Bigler, 2011) Even if the organization has a production support staff, there are times when a task will trickle down to the developers. It is not always possible to completely shield the general developer population from all support issues, but it is the batman’s job to try.

The batman should be the primary point of contact for all communication inside and outside the development group. (Shore & Warden, 2008) If anyone has a question for a developer, before interrupting the developer, they should go to the batman first. It is possible that the batman will still need to consult with another developer to uncover a detail – but the batman is the first line of defense. This communication coordinator role works in both directions. If a developer needs a piece of information from someone outside the group, he can task the batman with obtaining the information so that he can continue working. The batman is also responsible for intra-team communication. If a developer needs information from someone else on the team, they talk to the batman first.

What does the batman do, if nothing unexpected happens? There are always plenty of tasks that need to be done, but aren’t scheduled. It is important that these tasks are not scheduled and have no pressing deadline. If he is dealing with the expected, he won’t have time to deal with the unexpected and then he becomes just another developer.

The batman is also responsible for support requests that come to the developer group. Even if the organization has a production support staff, there are times when a task will trickle down to the developers. In these cases, the batman picks up the task. This falls into the realm of an unexpected task that shouldn’t interrupt scheduled work. It is not always possible to completely shield the general developer population from all support issues, but it is the batman’s job to try.

What does the batman do, if nothing unexpected happens? There are always plenty of tasks that need to be done, but aren’t scheduled. It is important that these tasks are not scheduled and have no pressing deadline. If he is dealing with the expected, he won’t have time to deal with the unexpected and then he becomes just another developer.

The batman is also responsible for maintaining a knowledge base. There are many things that a batman will learn along the way and this should all be documented in some way, so that future batmen can learn. (Shore & Warden, 2008) This can be implemented using anything from a series of documents, spreadsheets, a database, a wiki, a document repository or any combination of the above. The important thing is to document. The more the batman documents, the less they will have to rely on the knowledge of others on the team.

Another alternate task that a batman can undertake in his spare time is to tackle technical debt. (Shore & Warden, 2008) In an MSDN Magazine article, David Laribee, likened technical debt to financial debt, saying “It can kill productivity, making maintenance annoying, difficult, or, in some cases, impossible” (Laribee, 2009). Technical debt accumulates as a project progresses and is made up of many little, and sometimes not so little, things that the developers know they should fix, but don’t have time or resources to do it immediately. Many times technical debt is never addressed until it has gotten out of hand. The batman can take on some of these tasks in his idle time. Because this work isn’t scheduled, if the batman is interrupted or the job doesn’t get completed before the next release, it isn’t an issue. It gets done when it gets done – and since it’s isn’t on the schedule, anytime is sooner than never.

In his down time, the batman can also create prototypes or research technologies that might be useful in a future release. (Bigler, 2011) It is possible that the batman’s workload won’t allow him to get very far, but a small advancement is still advancement. The batman can also take this time to cross train and learn more about area’s he may not be familiar with. (Utz, 2011)

3. THE BATMAN’S ROLE IMPLEMENTATION

The batman role is an Extreme Programming and Agile construct, but it doesn’t strictly require the use of these methodologies. What it does require is collective code ownership. (Utz, 2011) In order for the batman to be affective he will need a general knowledge of all the system he is covering and the confidence to support them. The batman role reinforces collective code ownership because it emphasizes that every person on the team is responsible for the code that the team produces and should be able to support it. (Shore & Warden, 2008)

How do people know who is the batman? One of the most important roles of the batman is to advocate for the team and facilitate communication where possible. To do this effectively, everyone has to know who the batman is or at least how to get in touch with him. One way to go about this is to simply post the name of the batman where it can be seen to prevent “drive by”
distractions. (Bigler, 2011) This will prevent people from simply walking up to a developer to ask a question or ask for assistance. It is also suggested to have a “bat-phone” (Shore & Warden, 2008) that is passed to the batman as he assumes the position. Other useful methods are to have a “bat-email” or a “bat-instant message account” that is used by whomever is filling the role. If most communication takes place electronically, it may not be necessary for anyone outside the group to actually know who is acting as batman at any given time. A person can simple email the batman, and get a response. The detail of who exactly is behind the email isn’t as important because they represent the team as a whole.

It is important to rotate the batman. Some suggest rotating him with each release, so that the other developers can focus on the release for the whole cycle without being distracted by having to play batman for part of it (Shore & Warden, 2008). Others suggest rotating more frequently, even as frequently as daily, so that no one developer is burdened with the task. (Bigler, 2011) The frequency of the rotation can be adjusted to meet the specific team’s needs. Some will love the role as it gives them a break from their regular activities (Bigler, 2011) and some may hate it for the same reasons. Rotating the roles gives everyone the opportunity, no matter how they feel about it.

One of the most important reasons to rotate the batman is to avoid Hero Syndrome. (Benson, 2011) Hero Syndrome occurs when one person works on a piece of a project for so long or so independently, that they become the only person who feels comfortable supporting it. This can encourage code that can be undocumented, unvetted, untested and that developers other than the Hero are afraid to touch. Because the batman is a rotating role, the first line of support for the team isn’t the developer who wrote the code, but the batman. In the majority of the cases, the batman solves the problem. If the batman can’t solve the problem and the original developer has to be brought in, so be it. But the batman doesn’t fall into the shadows, letting the Hero do the work. The batman works with the Hero to understand the work and be better prepared for the next time. The next time, you won’t have one hero, you will have two. Eventually you will have a team of heroes or at least documentation sufficient to let anyone step into the role of the hero.

The batman is supposed to be nimble and agile, shielding the other developers and protecting their time and attentions. But the batman can get overwhelmed. If the batman routinely feels that the work load is too much for him, that there are too many “unexpected” issues, you can add another batman. Before taking this step, you might want to take a close look at why the batman is being inundated. Is it possible that some of the work being thrown at the batman is work that should be scheduled in a regular release? This is something to consider before committing more resources to the role.

There may be times when the person who is supposed to be the batman isn’t available. Even the batman can get sick now and then. Because this is a rotating role that all developers have to fill, it isn’t hard to find a replacement. If the use of collective code extends outside of the given team, it may be possible for the batman from another team to carry the load of both teams for the day. (Utz, 2011) Just establish a set of rules such as the last batman fills in, or the next batman steps up, or the person sitting immediately to the left of the absent batman is tagged – just pick something and stick with it.

4. COLLECTIVE CODE OWNERSHIP

Collective Code Ownership is really the only absolute requirement of the Batman role. (Utz, 2011) In order for the batman to do his job, he needs to truly know the code or at least have enough knowledge to be able to find the answer by himself. Collective Code Ownership is the principle that all code responsibilities are equally shared with everyone on the team. Every member has the same opportunity to contribute to every part of the code. (Nordberg III, 2003) You can go about Collective Code Ownership in several different ways and it does not require the use a particular methodology.

In order to establish Collective Code Ownership, the project must have some firmly established standards. There should be an overall architecture that everyone on the team understands and supports. There should be coding standards that everyone on the team as agreed to abide by. (Nordberg III, 2003) The idea is that no matter what part of the code a developer looks at, it should look familiar, even if they have never seen it before. This allows them to work on any part of the code base with confidence. (Utz, 2011)

Other means of encouraging Collective Code Ownership is continuous integration, testing and review. A developer should have a means of integrating his code changes with others on an almost constant basis. (Shore & Warden, 2008) If their changes are going to conflict with the work of another, they should know as soon as possible. Testing should also take place on a nearly constant basis. Establishing an automated unit and integration test suite can go a long way to instill confidence in developers who are working in potentially unfamiliar areas. Lastly reviews are necessary to ensure that knowledge is shared amongst developers. These reviews can be accomplished in a formal or informal setting as long as developers are routinely reviewing each other works, learning the lessons that other developers have to teach and unifying the code under one well maintained
standard. These steps can be performed by paired programming, conscientious and constant communication and/or comprehensive documentation, which ever best meets the needs of your team.

Lastly Collective Code Ownership can be encouraged by simple not encouraging knowledge silos. Knowledge silos are areas of code that only a few people truly understand and feel comfortable supporting. (Shore & Warden, 2008) Assigning most or all tasks in a given area of a project to the same person or small group of people helps to create knowledge silos. One of the best ways to ensure that every person on the team can support all parts of the code is to assign tasks so that every member of the team works on every part of the code. If a certain piece of functionality was initially created by one developer, assigning the next round of changes to that functionality to someone different can help to spread knowledge and boost shared ownership. At some point every member of the team will be acting as the batman and so at some point every member of the team is going to be supporting all parts of the code.

Many of the principles behind Collective Code Ownership support each other. If a developer knows that his colleagues are going to be working on this code after him, he might be more inclined to stick closely to the agreed upon coding standards. If he believes this code will never be viewed by anyone else, he might not feel so compelled to do so. If a developer is working on a particularly tricky piece of logic, he might be more likely to support it with an abundance of automated tests if he knows that he will not be the one making the next round of changes. He also might be more inclined to write his code in a cleaner manner to ensure that it doesn’t confuse others. While all these principles support each other, they also support the batman role and make it easier for the batman to do his job. (Utz, 2011)

Collective Code Ownership has more value than just supporting the batman role. One of the most noted of these benefits is making your projects less dependent on a small subset of the group. There is a metric to describe a risk of having knowledge concentrated in just a limited number of people; it is called a truck number. (Shore & Warden, 2008) It is the number of people that would need to be missing from a development group before the project suffers irreparable harm. In short - how many people would have to get hit by a truck? As grim as this may sound, attrition happens. People leave a company’s for many different reasons, including job transitions and retirement; People go on vacations, take off for training, or stay home sick. There are many different reasons people aren’t available to support the specific pieces of code they wrote and the team as a whole needs to be prepared for this. In an ideal world, a project’s truck number should equal the development team head count, and collective code ownership can help get you there.

5. THE BENEFITS OF HAVING A BATMAN

The batman role in the development team leads to a number of benefits that helps minimize interruptions and increase team performance. Commonly experienced benefits include the following:

- The batman prevents the other developers getting interrupted so they can focus.
- The batman can improve estimate reliability.
- The batman can improve communication flow.
- The batman can ensure the spread of knowledge.
- The batman can reduce technical debt.
- The batman can help to improve team morale.

It has been estimated that 28% of the “Knowledge worker’s day” is spent dealing with interruptions. (Spira & Feinturch, 2005) This percentage only represents the average time it takes for a person to transition from focusing on one task to focus on another the task. This doesn’t include doing either task, just transition time. If we assume that the batman is capable of elevating all interruptions for the other team members, we can illustrate how much time can be saved by allowing one person to handle all the disruptions. In the chart below, for teams ranging from 2 to 16 people, it is calculated how much time could be spent on focused work. Without a Batman it is assumed that the average developer has 72% of their day to deal with focus work, because the other 28% is spent transitioning between tasks. With a batman, you have one fewer workers, but the rest of the workers have 100% of their day to focus on the task at hand. The formulas used are:

Without batman: \[
\text{(Number of workers } \times 0.72) / \text{ Number of workers}
\]

With batman: \[
\text{(Number of workers } \times 1.00-1) / \text{ Number of workers}
\]

Figure-1 illustrates the benefits of a batman on the development team. If the team has 4 or more members, the batman becomes an advantage and the team as a whole can be more productive.
The batman helps to build the team's confidence and reliability. Because the batman is dedicated to the unexpected, the rest of the team doesn't have to worry about it. This will give the team greater control over their schedule. Focused developers can more accurately predict how long it will take to deliver a piece of work. (Utz, 2011) Even though the team will be short a person, it will be able to more accurately determine how long tasks will take, making it easier to create and keep promises on deliverables.

Another benefit of the batman role is that communication become more fluid. The team will have a dedicated resource whose job is to answer questions, get answers, or track down resources that someone who has other priorities may not be able to pursue so diligently. When a request comes in, the batman can drop everything and attend to it – that is his job after all. This can improve response time without causing distractions to those working on scheduled work.

Because the batman is a rotating role, that all developers must assume, it ensures the spread of knowledge. Every developer will, at some point, have to be the batman, and thus every developer will need to know about all parts of the software that is being supported to be able to answer most basic questions. If they don't know the answer, they need to know where to look it up. If there isn't any information in the batman knowledge base, they need to know who to ask, specifically, as to not disturb more people than is necessary. This shared knowledge and shared responsibility of the code is a great asset to the team. (Cockburn & Highsmith, 2002) It cannot only ensure that any developer can step into the role of batman, but that in a time of crisis, there won't be only one resource who can fix a problem. For the most part, any member of the team should be able to step up and provide a solution.

The batman can work on reducing technical debt. Many times these tasks go undone because they aren't scheduled for a specific release and they are not user facing issues. (Laribee, 2009) These are tasks that the batman can take on that will help the team in the long run and make the software more stable. The only risk in allowing the batman to tackle some of this work is that it will still need to be tested and sometimes finding time to properly regression test such code can be a show stopper. There are many solutions to this problem. The team can maintain an automated regression test suite or they can simply incorporate these kinds of changes into releases where this level of regression testing is already planned. Completely regression testing with every release is a wonderful goal that few teams can afford, but there are many regression test selection techniques available. (Kim, Porter, & Rothermel, 2000)

Implementing a batman role can help the morale of the development team. Some who have implemented the batman role have noted that most developers actually enjoy their time as batman. (Bigler, 2011) They find it a nice change of pace and it allows them to see how they are directly helping the team. Although the name of the batman role did not come from the comic book hero, it is easy to see how one can feel heroic defending their fellow developers from those who want to intrude on their time. The developers who are allowed to concentrate on their work also reap the benefits of the batman.
6. POTENTIAL PROBLEMS

The batman role has been associated with some potential problems in software development, such as the following:

- The batman role does require that you loss a resource.
- The batman can be taken advantage of if tasks are intentionally not planned for.
- The batman role can be disregarded due to its close ties to other programming constructs.
- The batman role does require Collective Code Ownership.

When implementing a batman role, the team does lose a development resource. It can be hard to explain why one person on the team is sitting out, and not developing towards the current release. People who do not understand the purpose of the role may see this as holding back and the team not being as effective as they could be. (Utz, 2011) It might be hard for those people to see that having one person who isn’t doing work schedule for the release actually makes the team as a whole more efficient.

It can be easy for someone to see the batman as an opportunity to not worry about planning for certain tasks. If people see the batman as an idle resource, they may be tempted to find ways to fill up his time. It can be a temptation to allow things that could and should be scheduled to fall to the wayside knowing that if they become critical, the batman can pick them up. If enough tasks that could be planned get pushed on to the batman, then he won’t have time to do the true emergencies.

The batman role is an eXtreme Programing construct. It was suggested for use in James Shore’s book, *The Art of Agile Development*. There are some who might resist the idea because they have concerns about Agile development. There are those who have concerns over using Agile because they feel there is a loss of accountability and reduced productivity. (Cohn & Ford, 2003) Another concern with Agile is the increased communication and focus on people that is required. (Nerur, Mahapatra, & Mangalaraj, 2005) This communication takes time, but with a batman, that task is isolated to one person, which allows other developers to concentrate on work tasks.

Collective Code Ownership is required to take advantage of the batman role. Without it, the batman will be hard pressed to have all the knowledge necessary to support all parts of the code. With that, it should be noted that if the organization is unable to incorporate shared ownership of the code base, the batman role may not be relevant to that setting.

7. CONCLUSION

To some the batman could be considered a super hero. The batman is the person who rights the wrongs by fixing small emergency bugs without having to interrupt the current development schedule. They protect the general public by not allowing the other developers to get distracted and thus get behind schedule. They support community good will by stimulating the flow of information inside the team and between the team and other teams. They can even have a secret identity because it isn’t always necessary for anyone to know who the batman is – they are just the person who answers the bat-email, or picks up the bat-phone. The batman can save the day, or at least save the team from being distracted and help get the release out on time.

The batman’s role is essentially to do any and all unscheduled work. This includes emergency bug fixes and acting as the team spokesperson. He is also in charge of maintaining the Batman Knowledge base and reducing the team’s over all technical debt. Lastly he is in charge of creating prototypes and researching new technologies that the team may be using in the future. In general the batman’s tasks are varied and can also be seen as a wonderful break from the daily grind of the normal release work.

Implementing the batman role isn’t hard. The most important thing it relies on is Collective Code Ownership. As long as each member of the team either has or can gain the knowledge to support most of the team’s projects, creating a batman is easy. The batman role and Collective Code Ownership are also self-reinforcing. Since each member of the team will share the responsibility of being batman at some point, each will have a sense of ownership for all the code base and incentive to make sure that everyone on the team understands it.

There are many benefits of the batman role. The batman allows the other developers to focus on their tasks at hand. This in turn allows the team as a whole to have a better understanding of how long tasks take, since they do not have to account for the unexpected. The batman can improve communication inside and outside the team by ensuring that at least one person on the team is focused on making sure that questions are getting answered. He can also reduce the amount of technical debt and improves the general team morale.
The main concern with the batman role is that the team will lose a resource. Each and every day, at least one person on the team will be the batman and thus not be available for scheduled work. There is no way around this, you can’t get something for nothing and this is the price that you pay for a batman.

It is also possible that your organization will scoff at the batman role because it is aligned with a coding paradigm that they may not be supportive of, Agile or eXtreme Programming. If Agile development or Extreme Programming is something that is going to raise eyebrows in your organization – then do not tell them the origin of the role. If Agile is a direction that your organization is heading, this could be a great first step.

The batman role can’t eliminate risk in a development team, but it can reduce it. Unexpected events can still happen that will require more resources than your batman alone. The batman role can’t not compensate for schedules that are truly too short, although he can make the true problem more obvious by eliminating other factors. The batman can only be as effective as the organization allows him to be.

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REFERENCES


THE FUNDAMENTAL LAW NETWORK

Otis D. Williams

ABSTRACT

This text illustrates an Observers reference frame within a Cross Over Concept, integrating ancient science concepts with modern science concepts. This new idea is known as a ‘Technology Cross Over Concept’. A genetic exchange of ancient science concepts with modern science concepts, these processes manufactures a new logical scientific technology. This idea is significant in decoding hidden viral messages that allow for access to understanding The Fundamental Law Network. Viral codes are solid based foundations within a network containing sets of ancient encoded scientific messages that are within ancient Scientific Formulas that were calculated with explanations by the Ancient Forefathers of Physics. The Fundamental Law Network text applies the missing significant “Observation Stage” completing a triangle of a clear understanding the formulas. Viral Codes contain series of consistencies, principals and laws that governs Earth, Solar System and Universe. This text will discuss these encoded messages, detailing an understanding of how to apply their concepts and showing their primary intent. The Scientific Forefathers; Einstein, Lorentz, Hayflick, Hoyle, Kepler, Maxwell, Newton and other scientists, meant for their encoded scientific formulas to become cornerstones for solid based foundations in promoting space technology advancement for the future of mankind. The Scientific Forefathers’ were explaining future space technology through proportional formulas and elaborate grid schematics. The formulas and grid schematics represent ancient Technology Cross Over Concepts that the Scientific Forefathers’ shared in common within their own small network of Physicists. This text will detail how to apply their formulas to logical modern space technology with illustrations and unique observations that leads to a clearer understanding of concepts like; Planetary Motion Laws, Inertial Laws and other ancient scientific concepts. Modern science is searching for answers that are elusive. “Like those times when you cannot find your eyeglasses, only to discover them resting on your nose”. The formulas contain information that’s needed to accelerate scientific technology for the Traversing Observer. The Scientific Forefathers’ of Physics had agendas for scientific technology to advance. By standing on the shoulders of the Ancient Scientific Forefathers' and evolving their ancient scientific concepts into a Technology Cross Over Concept. This will move humanity from ancient scientific formulas to a logical electromagnetic negative phase energy 4-vector ‘Simultaneity’ concept. A Cross Over of Scientific Technology is the correct direction to move in, uniformly as one World, striving towards not against the advancement of mankind’s future. This text will detail a logical way of understanding consistencies, principals, laws and consequences that governs the ancient foundations within The Fundamental Law Network.

Keywords: Garage, Inertial, Inventoried, Mirage, Repeater, Stationary.

THE LORENTZ TRANSFORMATION OF THE WORLD TIME LINE

This is an example of Transformation of the World Time Line; we can imagine this reference-body supplemental laterally and in a vertical direction by means of a framework of rods, so that an event which takes place anywhere can be ‘localized’ with reference to this frame work. Similarly, we can imagine the train traveling with the velocity v to be continued across the whole of space, so that every event, no matter how far off it may be, could also be ‘localized’ with respect to the second framework. Without committing any fundamental error, we can disregard the fact that in reality these frameworks would continually interfere with each other, owing to the impenetrability of solid bodies. In every such framework we imagine “three surfaces perpendicular (▲ /▼ )” to each other marked out, and designated as co-ordinate planes or coordinate system [1].

This problems’ explanation appears akin to a process known as Triangulation. Triangulation is the process of determining the distances between points on the Earth’s surface or the relative position of points, by dividing up a large area into a series of connected triangles, measuring a base line between two points, and then locating a third point by computing both the sizes of the angles made by lines from this point to each end of the base line and the lengths of these lines [2] Thus, you have the triangulation of the distance between an object ‘A’, the external source ‘B’ and the frame of reference that the traversing observer ‘C’ is witnessing from. Triangulate; to make and mark with triangles Fig. 1 and Fig. 2.

Fig. 1, explanation; illustrates the extremely heated inertial wave motion that is a bi-product of the inertial pull effect of the external source. An external source has a rear pulling effect and a frontal sucking / pulling inward effect as universal inertial mass engulfs and surrounds the external source and Solar System, allowing for a uniform speed, in a straight line,'at rest', ‘not accelerating’, while tugging and pulling along the planets of the Solar System within its’ tremendously heated inertial wave. Fig. 1, Observation is; a 90° wave motion of the Solar System within its’ triangulated region. It appears that the planets of the Solar System cannot orbit the external source, the heated inertial wave of the external source is located at the rear within a
90° wave effect not a 360° circle. The planets swing 80° in a fanning motion within the 90° rear pulling wave of the extremely heated inertial field of the external source. A Motion Blur effect combined with gravity produces the 360° elliptical illusion effect. Each effect is a bi-product of the heated inertial wave of the external source. The Lorentz Transformation of the World Time Line, as shown is a 'Triangulation Concept', it reference frames planetary motion movements within the region of the heated inertial effect of the external source. The planets appear to remain within the 80° wave effect of the 90° triangulated region of the ancient diagram. Distance, speed and time are bi-products of Triangulation. Fig. 2. A baseball diamond appears akin to the Lorentz Transformation. Einstein uses baseball as an example within his explanation of the Composition of Velocities triangulation concept, an example that mankind can relate to.

THE LORENTZ CONTRACTION

This example of the Lorentz Contraction; it is a phenomenon of shortening of the length dimension of an object, in the direction that is parallel to its velocity of movement, with respect to a stationary frame and observable from it Fig. 3. This shortening of the object is directly proportional to its velocity. This phenomenon was shown to be as a consequence of the postulates of Special Relativity (SR) by Albert Einstein in 1905 a.c.e. The consistency of the speed of light and the requirement that all laws of physics be the same in all inertial reference frames inevitably lead to the effect of the Lorentz Contraction [3].

This example of the dimensions (e.g., length) of an object as measured by one observer may be smaller than the results of measurements of the same object made by another observer (e.g., latter paradox involves a long ladder traveling near the speed of light and being contained within a smaller garage) [4].

This problems' explanation is; The ladder is in a straight line, towards or away from each other, ‘at rest’, not accelerating but instead, at a uniform speed within a garage. The ladder / external source, now has accessed a set of viral codes within the Viral Codes Network. The Viral Codes Network will allow the ladder / external source to have a frontal sucking inward pull effect / and a rear inertial pull effect. Even though the ladder is confined, surrounded within the inertial effect of the garage universe. The Viral Codes Network of laws are always applied, even if the object is a ladder within a garage universe. As long as a series of consistencies, principals and laws are applied by the ladder, it has complied within viral codes of the Viral Codes Network. An external source / ladder is in a straight line towards or away from each other, ‘at rest’, not accelerating, at a uniform speed due to the surrounding inertial effect of the garage universe. The ladder has displayed the required viral codes complying within the limits of the Viral Codes Network. The heated rear inertial wave effect of the external source / ladder, makes the planets of the Solar System appear to lengthen within the 80° fanning / wave of the 90° inertial wave region. The stationary observer has an inertial frame of reference parallel the external source / ladder. Stationary observer will witness the external source / ladder, within a smaller garage. Stationary inertial reference observer beyond the heated inertial wave effect, will witness the Lorentz Contraction. A shortening effect of an External Source and the Planets of a Solar System Network, ‘at rest’/ ‘idled’ / ‘parked’ within a smaller garage effect Fig. 4. In a Cross Over Observation; Fig. 4 and Fig. 5 appear as analogous honeycomb-like shaped structure.
Fig. 5 and Fig. 6, illustrates a honeycomb-like shape once again, showing a variety of layers / levels within / the Universe, indicating different regions / areas for external source positioning, for a controlled regional inertial frame of reference for external source mapping, appearing as levels / layers, akin to a multi level parking deck. Each level or layer can be mapped precisely indicating the location of an external source 'at rest / idled', within a significant environmental region / level of the Universe. All external source parking spots, inertial frame of reference can be triangulated, then inventoried to a certain regional parking deck spot / layer / level / inertial frame of reference within the Universe. Fig. 6, Appears as a honeycomb-like garage with levels / layers with individual layered parking spot locations, regionally positioned. Each external source finding its’ own individual parking spot / 'at rest' / parked and idled within a level or layered region that's most environmentally significant for maintaining its' consistencies, principals and laws within its Viral Codes Network. Fig. 5, Observation intent appears to be; a Triangulation Mapping Network (TMN), akin to GPS mapping, for external sources’ parking spot locations within the most environmentally significant layer / level within a honeycomb-like shaped Universe.

The Lorentz Contraction Observation explanation Fig. 5 is; a honeycomb-like shape for parking spots where an external source can be ‘at rest’ / ‘parked’ / idling at a uniform speed / in a straight line / not accelerating / within an environmentally significant region / layer, level / in space / inventoried and 'shortened within a smaller garage effect'. In a Cross Over Observation; Fig. 6, a honeycomb-like shape for parking spots within a multi parking deck garage; in a straight line, not accelerating, at rest, parked and inventoried. All provided for by the Scientific Forefathers’ formulas for Global Positioning Satellite Mapping for External Sources. ‘Imagine that’.

**Figure 3**

**Figure 4**

**Figure 5**

**Figure 6**

**RELATIVITY OF SIMULTANEITY; MOVING OBSERVER**

The Observation explanation for Fig. 7, Appears as a grid schematic for two way communications with the moving / traversing observer at uniform external source speed and beyond. A grid schematic for a Logical Technology Communications Network grid, streaming through space with deep / sub-space viral connector communications streams. A= external source (HUB), B= location for observer parallel to HUB for genetic technology cross over interface. Fig. 7, is attempting to establish a foundation for a Centralized Communications Satellite Network system. ‘B’ is where a stationary repeater system / interface /synchronization / blade-like junction device is located for processing genetic space / sub-space communications technology, linking all stream levels of the communications system network. This is a 'Daily Operational Area' (Space Station) designed to transmit ‘Simultaneity’ genetic viral streams, also preventing interface devices from overheating leading to failure. The area can
possibly be used as a repair station for traversing observer vehicle repairs. The thick purple, green, red and darker purple lines on the grid represent deep sub-space communication streams that penetrate the external source / HUB. The short dark red and short dark purple arrows indicate the cross over location for ‘Simultaneity’ transferring of genetic communications technology from one end region of deep sub-space to the other end region of deep space. ‘B’ is a vital region for all deep sub-space communications streams. The HUB ‘A’ acts as a booster or conductor providing for a cross over stream burst location. The HUB will provide a burst in communications power for space / subspace / deep space communications streams. Each communication stream will carry streams of genetic technology from one end of the network to the other end, streaming through a cross over of genetic technology linked to the Central Control Center located on Earth (ct’ red line, beneath ‘A’ at third parallel green line) within ‘Simultaneity’. Traversing observers’ vehicle would use a burst supplied by the Vehicle Communications Center (VCC). The Relativity of the Simultaneity concept is for the moving / traversing observer for two way ‘Simultaneous’ communications through space / sub-space. Observation explanation for Fig. 8, is; a multiple Star Topology Communications Network, illustrating a communications systems schematic; backbones or viral streams, a HUB or power supply, nodes ends or ends of viral connectors and segments or viral connectors. A common computer technology network providing access streams and viral pathways for two way electrodynamic genetic communications technology exchange. The Scientific Forefathers have provided this information for mankind / traversing observer, for space / deep-space communications away from Earth and external source. Fig. 7 and Fig. 8, Observation appear as analogous grid schematic imagery, in accordance with Earth and the central interface unit, both are located symmetrically on the grid schematic designs at ‘lower left corner’.

**Figure 7**

**Figure 8**

**RELATIVITY OF SIMULTANEITY; STATIONARY OBSERVER**

An example of Relativity of Simultaneity; two events occurring in two different locations that occur simultaneously in the reference frame of one inertial observer, may occur non-simultaneously in the reference frame of another observer (lack of simultaneity) [5]. We can immediately see how the relativity of simultaneity dissolves paradoxes. It might seem impossible that both of the observers could judge light to travel at the same speed. To see that it can happen, recall that judgments of the speed of light must conform to the measurements of the time it takes a light signal to traverse some interval of space. These measurements are made by clocks at the start and end of that interval and it is essential that the clocks be synchronized. If the two observers making these measurements use sets of clocks that are synchronized differently, then it is no longer so clear how their results will compare. Indeed it might be possible for them to adopt protocols for synchronizing their clocks, both of which are carefully selected exactly to assure that both observers measure the same source speed. Only a reflection shows that using Einstein’s method of synchronizing clocks that assures that all observers end up with the same speed of light [6]. Distance, speed and time are the elements in a Triangulation concept.

The explanation for the problem; Fig. 9, ‘A’ = observer, ‘C’ = observer, ‘B’= external source HUB, ct line = external source frontal sucking pull / rear pulling inertial region. Both ‘A’ and ‘C’ observer can witness the same event at external source speed from two different inertial frame of reference. Fig. 9, ‘A’ and ‘C’ observers can witness the same event at different inertial reference time frames. Even though ‘A’ and ‘C’ observers are parallel the external source not within the inertial suck / pull effect of an external source, not accelerating, ‘at rest’, stationary at the uniform speed of the external source. If the event happens on
either side of an external source, stationary observer nearest the event will witness in real time. Stationary observer further away will witness the event from a different inertial frame of reference, time delayed. Considering distance, speed and time. Fig 9, Observation illustrates; external source speed is possible, once outside of the inertial rear pull / frontal sucking effect of the external source. 'A' and 'C' stationary observers, are not accelerating, 'at rest', parked and idled, at a uniform external source speed, parallel of 'B'. An inertial reference frame-triangulation effect exist with observers 'A' and 'C' in accordance with Earth, located at third parallel line beneath 'B'. Stationary beyond the Motion blur lengthening effect and heated inertial wave illusion effects, observer 'A' and 'C' will witness the shortening of a Solar System. Allowing for a 'Newtonian' inertial reference frame that can only be created through an imagination. Observers 'A' and 'C' will real time witness the planets of a Solar System 'closed up', 'coupled together', north and south poles perpendicular the ecliptic of the external sources' equator-centromere region, on their sides, mysteriously within the shortening effect of the Lorentz Contraction concept; a long ladder within a smaller garage effect Fig. 10. The Scientific Forefathers' formulas, once again.

An explanation for Stationary Observer Fig. 11, Appears as a basic grid schematic design for a crossover of genetic technology exchange for a 'Stationary Observer' "Satellite Linkage". 'A'= stationary observer communications satellite, 'B'= external source / HUB, 'C'= stationary observer communications satellite, Earth = third observer, appearance of three stationary observers / triangulation effect with the location of observer 'A' and 'C', in accordance with the Earth. The Earth is located beneath 'B' / HUB on the third parallel line 30° left stroke, right angle as third observer. Third observer will not witness the parallel reference framing of the external source. 'A' and 'C' stationary observer satellites will act as a parallel interface with an external source / HUB. Utilizing the HUB as a communications conductor for traversing observers vehicle tracking device, then relaying genetic technology via communications system network streams 'simultaneously' to the Earths' Central Control Center interface unit. All traversing observers vehicles will be tracked through space by the 'Stationary Observer Concept'. By utilizing this concept it will track absolute phase energy motion of the traversing observers vehicles by using GPS. This is Einstein's concept 'The magnet and conductor thought experiment'. Genetic communication technology viral streams are also available by utilizing observer 'A' and 'C' as inertial reference frame 'time delayed' via telephone triangulation from stationary satellite observer in accordance with Earth, not utilizing the HUB as a conductor. The Ancient Forefathers provided for this concept. Nearly all concepts have Duality.

The Planet Mercury is located on the first parallel line beneath 'B', the Planet Venus is located on the second parallel line beneath 'B'. ct and x lines respectively are direct viral streams completely penetrating the external source rear inertial pulling / frontal sucking effect, HUB will provide a burst / conductor powering communication streams for deep space communications.

Fig. 12, Explanation is; a Star Network Communications System schematic, illustrating a basic system, consisting of a fundamental two way communications diagram with each node end, viral connector and segment, connected to the central power supply / HUB. Fig. 11 and 12 are symmetrical schematic designs. This design will prevent any non-centralized failures from affecting the communications network. As traversing observer vehicle numbers increase, so will the capacity of the network without interfering with genetic technology traffic exchange through the network. The HUB is the strength of the system, only HUB failures will disrupt the network.
MASS OF SYSTEMS AND CONSERVATION OF INVARIANT MASS

For systems of phase energy-momentum requires summing the momentum vectors (genetic technology for traversing observer vehicle electromagnetic communications transmission for motion) of the particles; A frame of reference in which at zero velocity the mass is equal to the invariant mass. The invariant mass it most often called ‘rest mass’ [7].

An Observation explanation is; An increase of 4-vector negative phase energy motion, then phase energy momentum of the traversing observers’ vehicle. Is a negative photon particles wave of phase energy motion generic technology communications stream. The negative photon 4-vector particles stream will utilize The Relativity of the Simultaneity concept communications schematic for two way genetic technology exchange. 4-vector phase energy momentum is variant mass, not absolute to the closed isolated systems of its invariant mass. This is not propagated to Duality Dilation of the 4-vector phase energy motion. Non compliance of Mass Systems and Conservation of Invariant Mass will lead to consequences. Do not allow mass in nor mass out, “KEEP THE DOORS CLOSED”. The hull of the traversing vehicle is an air tight closed isolated environmental system or zero mass. Inner locking air lock door systems will provide for a significant environmental pressurized seal. The traversing observers’ vehicle must maintain a constant invariant mass / a zero mass closed isolated system that operates with 4-vector phase energy motion Fig. 13. As a failsafe, the traversing observers’ vehicle must be equipped with an electrodynamic device ‘UPS’ as a secondary power supply source for maintaining air pressure / zero mass in a closed isolated system Fig. 14. This will prevent a contraction of invariant mass within the traversing observers’ vehicle. A contraction in invariant mass of the traversing observers’ vehicle without a functional fail safe electrodynamic device UPS, will lead to consequences. A functional Condenser Unit will be a necessary requirement for a closed isolated system. The condenser unit is used to condense a substance from its gaseous state to its liquid state, typically by cooling it. In so doing, the latent heat is given up by the substance and will transfer to the condenser coolant. Condensers are typically heat exchangers which have various designs and come in many sizes ranging from a small hand held to a very large industrial-scale unit used in plant processes. An example; a refrigerator uses a condenser to get rid of heat extracted from the interior of an invariant mass closed isolated system to the outside air. Refrigerant goes through multiple tubing, which are surrounded by heat transfer fins through which cooling air can move from outside to inside an invariant mass closed isolated system [8]. A Duality of the closed isolated invariant mass system exist. The tubing will produce a condensation drainage damper that can be properly collected, purified and utilized as potable drinking water beyond Earth. The condenser unit system has a Duality, but it’s not absolute to 4-vector negative phase energy motion. Scheduled daily maintenance will minimize closed isolated system failures that may result in consequences.
The Law of Inertial; is the tendency of an object to remain in a state of ‘at rest’ or uniform motion until an external force is applied. The Earth and the Planets of the Solar System are held within the heated inertial pull effect or tug of war effect of the external sources’ Gravitational Field. The gravitational field of the external source varies with each planet of the Solar System. The external sources’ gravitational pull effect on Earth is positive 66.66 sq. ft. per second of pulling / tug effect. The Earth’s gravitational effect on the external source is negative 33.33 sq. ft. per second of pulling resistance effect Fig. 15. Obviously, the pulling effect of the external source is twice that of Earth. Within this tug of war there are consistencies, principals and laws, combined they produce a gravity field constant for Earth. The Van Allen Belt is the last physical layer or level of Earth before you reach outer space. This region is the separation point between outer space and Earth’s physical gravitational field [9].

Gravity is a bi-product of the inertial field. Inertial holds gravitational fields, gravitational fields holds the planets of the Solar System. The planets of the Solar System depend on the external source for heat, oxygen and an endless clean, green power supply. This is an example of consistencies, principals and laws, working together producing an inertial field between the external source and the planets. Exploring beyond Earth will create problems for the traversing observer. Without a sustained gravity constant the traversing observer must remain strapped down to a seat, wear magnetic boots, possibly experience nausea sickness or risk floating around the vehicle weightless due to an absence of a gravity constant. To prevent the traversing observer from getting sick and floating around weightless, gravity must be established within the closed isolated system of the traversing observers’ vehicle. Establishing a gravity constant within the traversing observers’ vehicle; A closed isolated system consisting of an electromagnetic simulated pulling effect device must be placed within the upper ceiling portion of the vehicle’s hull plating, generating an electromagnetic controlled positive pulling effect of 66.66 sq. ft. per second, configured with the negative pulling resistance effects of 33.33 sq. ft. per second of electromagnetic pulling resistance simulated effect device must be placed within the lower floor portion of the vehicle’s hull, this will generate a Coss Over of controlled pulling / pulling resistance effect of a simulated inertial field producing a simulated gravity constant. This simulated inertial field / gravity constant must be maintained within every level / layer of the traversing observers vehicles’ closed isolated system. The vehicle’s 4-vector phase energy will maintain a sustained power feed to the Simulated Gravity System Network. The simulated gravity system network is not absolute to 4-vector negative phase energy. An electrodynamic device UPS will be required as a failsafe, minimizing failures and consequences to the closed isolated system. A logical crossover of genetic technology with a simulated combination of consistencies, principals and laws will possibly produce a simulated gravity constant, as a bi-product of an electromagnetic inertial field. Further development of this logical ‘Simulated Gravity Technology’ concept (SGT) could be a significant factor for the traversing observers’ vehicles beyond Earth.

The Planetary Motion Laws were first published somewhere between the years of 1609 and 1618 a.c.e. First law of planetary motion; all of the planets revolve around the external source in elliptical orbits. Second law of planetary motion; a line joining the external source and the planets sweep over equal areas in equal time as the planets move through their orbits. Third law of...
planetary motion; the square of the time it takes a planet to complete one revolution around the external source is proportional to the cube of the planets distance from the external source. The theory of Planetary Motion Laws were discovered by Johannes Kepler, an astronomer that lived from 1571-1630 a.c.e. [10].

Albert Einstein’s SR deals with inertial frames of reference, that are in a straight line, toward or away from each other, ‘at rest’, not accelerating, but instead at external source uniform speed [11]. In a Cross Over Observation; Planets of a Solar System do not move within an elliptical orbit, but instead ‘in a straight line, toward or away from each other, ‘at rest’, not accelerating, at a uniform speed, Newton’s Inertial Frame of Reference and SR. Keplers’ theory states, ‘For a planet to orbit an external source; First, the planet must accelerate as fast as an external source, then accelerate faster than an external source for the planet to orbit pass the external source. Next, a planet must accelerate fast enough and maintain that acceleration, to remain in front of an external source. Next, a planet must reverse its course and head back around, then de-accelerate behind an external source back to a planets original starting point, then start once again’. Kepler's theory is akin to a Roller Derby Match, by slinging planets ahead of an external source one by one at various speeds and times. Instead, planets are within a tug of war, pulling within a very strong gravitational field produced by an external sources’ rear inertial wave effect. The external source has more pull / tug of war power than all nine planets combined. An external sources’ mass is 99.8 % of total Solar System mass [12]. A tug of war is a pulling and pulling resistance effect producing inertial and gravity fields. How can an external source have a tug of war with planets, if the nine planets pulling resistance is pulling from all sides of an external sources' inertial reference frame? Gravity is a bi-product of the heated inertial wave effect, gravity allows objects to move in a straight line, just as Earth’s gravity pulls objects inward. Inertial /gravitational fields allows for objects to travel in a straight line, as an external source pulls / tugs the nine planets. Not within a 360° orbit around an external source as Kepler had theorized. Planets make a 80° inertial wave fanning motion Fig. 16. Completely under the consistencies, principals and Planetary Motion Laws of a Solar System Network; All planets in a straight line, towards or away from each other, ‘at rest’, not accelerating, but instead at the uniform speed of an external source, this is SR. SR is a more logical foundation for Planetary Motion Laws. Kepler did not have access to SR living in the early 1600’s. This is a perfect example of The Scientific Forefathers’ standing on the shoulders of Kepler, while continuing to evolve towards the next viral step within The Fundamental Law Network.

CONCLUSION: THE FUNDAMENTAL LAW NETWORK

This text has attempted to generate a different disposition on ancient scientific concepts, in regards to understanding Technology Cross Over Concepts. The Fundamental Law Network text has discussed the Viral Codes Network and possibilities for new scientific technologies, utilizing simulated gravitational fields for the observer traversing the uniform speed of an external source and beyond. Ancient science Cross Over Observation Concepts lead to modern scientific ways of understanding consistencies, principals and laws that exist within the Universe. These consistencies, principals and laws are all deeply encoded within the Viral Codes Network. This text has revealed Honeycombed-like shaped Universal Structures for External Source Mapping, Elaborate Universal Communications Grid Schematics that allow for ‘simultaneous’ two-way communications with a precisely placed cross over location for parallel observer inertial frame of reference for witnessing The Relativity of Simultaneity Stationary and Moving Observer Concepts. Logical Planetary Motion Laws concept that explains real time motion of a Solar System Network, it’s always in a straight line toward or away from each other and not accelerating / but instead ‘at rest / idled/ at a uniform speed within a Honeycomb-like shape mapping / parking space. The previous set of consistencies does not describe an elliptical orbit as ancient science concepts have theorized since 1609 a.c.e. SR is a proven scientific concept with solid foundations for logical understanding of the Planetary Motion Laws Concept. For four centuries, mankind had trusted in the axiom proposed by the ancient Planetary Motion Laws Concept. That was much too much time wasted trusting in a bad concept. Its’ time to move on, in a direction seeking logical fundamental science consistencies, principals and laws that will allow for a new way of understanding the Fundamental Law Network. As a foundation, it represents
exactly what a network of laws are supposed to represent. It contains sets of viral codes that access series of consistencies, principals and laws that lead to consequences that exist when the Traversing Observer is parallel, ‘at rest’, at uniform speed of an External Source or traversing beyond an External Source. The Scientific Forefathers’ were advising the Traversing Observer, “That once the Traversing Observer has established a viral link understanding the Inertial / Gravity fields viral codes, the Observer will be able to traverse up to, and beyond the uniform speed of an External Source. The Traversing Observer must first understand that, “Laws govern the consistencies and principals of traversing the vastness of space, consequences will result with all violations of any viral codes law within the Viral Codes Network”. Once the Traversing Observer understands the laws, and consequences that exist, the Scientific Forefathers were alerting the Traversing Observer that, “The Fundamental Law Network will govern him beyond Earth”. These are just a few concepts the Ancient Fathers were attempting to explain through their elaborate formulas and grids. Decoding the ancient inertial / gravity field codes has answered a question that has eluded mankind for quite a few years. ‘How to duplicate and control a gravity constant electromagnetic field for the Traversing Observer’. Compelling information, theories and logical modern concepts indicate that an advanced modern space technology is awaiting mankind. This is Book # 4.

DEVELOPMENTAL SIMULATED TECHNOLOGY CONCEPTS

The Fundamental Law Network text has moved towards a significant possibility of creating a positive disposition for “Simulated Gravity Technology (SGT / Sargent)” as a new scientific technology. Reaching towards a significant step forward towards the possibilities of space exploration for the traversing observer beyond Earth Fig. 17 a, b, c, d, e. Imagine, creating an electromagnetic simulate gravity constant field, from a simulated external source power supply, that produces as a bi-product a clean simulated gravitational field and vast communication streams within a “Universal Communications Technology Network (UCTN)”. All controlled from a centralized location on Earth through the “Voluntary Automatic Matrix (VAM)”. The Cross Over Concept of ancient scientific formulas with modern scientific technologies could mean a more tranquil existence for mankind / traversing observer in the regions beyond Earth.

Figure 17: (a), (b), (c), (d), (e)
REFERENCES; THE FUNDAMENTAL LAW NETWORK


FIGURES: THE FUNDAMENTAL LAW NETWORK

APPENDAGE ‘A’; A Cross Over Concept with Ancient Simultaneity and Modern Simultaneity

The Observation explanation for Fig. 1. ‘A’, The Pyramid Complex at Giza has a hidden viral code within a cross over ancient symmetrical alignment with Fig. 2. ‘A’, The Relativity of the Simultaneity moving observer concept. Fig. 1. ‘A’ and 2. ‘A’, each appear to represent an ancient yet analogous logical ‘Simultaneity Moving Observer Concept’ communications schematic grid. The location of the Earth is located at ct' thick red vertical line, third parallel green line beneath ‘A’ HUB. The Sphinx is located at the cause way end that links it to the Great Pyramid on the third parallel down. Both locations are analogous on the grids. This method of understanding encoded ancient messages through logical scientific concepts, has provided access to hidden encoded messages within this ancient Cross Over mystery. The Valley Temple of Menkaure is listed in Fig. 1. ‘A’, it’s located at a left stroke 30° right angle, one region from the location of the Sphinx site at Giza. The Moon of Earth is not illustrated on Fig. 2. ‘A’, it’s located at a left stroke 30° right angle, one region from the location of Earth. Fig. 1.’A’ and Fig. 2.’A’, the Valley Temple of Menkaure and the Moon are analogous, just outside of the 80° heated rear inertial wave effect of ‘A’ external source / HUB. The Great Pyramid represents the HUB / ‘A’ / External Source on both grids.

Appendage ‘A’ Figures; The Fundamental Law Network
Fig. 1. ‘A’, Pyramid Complex at Giza., www.cheopspyramide.ch, Accessed 2/2011.
AN α-CUT APPROACH FOR FUZZY PRODUCT

R. Hassanzadeh, I. Mahdavi, N. Mahdavi-Amiri, H. Shafiean and A. Tajdin

1Mazandaran University of Science and Technology, Iran and 2Sharif University of Technology, Iran

ABSTRACT

We propose an approach for computing the product of various fuzzy numbers using α-cuts. A regression model is used to obtain the membership function of the product. Examples are worked out to illustrate.

Keywords: Fuzzy Numbers, α-Cut, Regression Model, Fuzzy Product.

1. INTRODUCTION

In recent years, a number of researchers have focused on computing various approximations of product of fuzzy numbers (see, e.g., [1–5]). Here, we propose a new approach for computing fuzzy product of fuzzy numbers using α-cuts. The fuzzy numbers may be of the same type or mixed. In Section 2, basic concepts and definitions are given. Section 3 describes α-cuts. The design of fuzzy product operator on fuzzy numbers is described in Section 4. We conclude in Section 5.

2. CONCEPTS AND DEFINITIONS

We start with basic definitions of some well-known fuzzy numbers.

Definition 1: A trapezoidal fuzzy number \( \tilde{a} = (a_1, a_2, a_3, a_4) \) with the membership function given by

\[
\mu_{\tilde{a}}(x) = \begin{cases} 
0, & x \leq a_1 \\
\frac{x - a_1}{a_2 - a_1}, & a_1 \leq x \leq a_2 \\
1, & a_2 \leq x \leq a_3 \\
\frac{a_4 - x}{a_4 - a_3}, & a_3 \leq x \leq a_4 \\
0, & a_4 \leq x 
\end{cases}
\]

Definition 2: The membership function of a normal fuzzy number \((m, \sigma)\) is

\[
\mu_{\tilde{a}}(x) = e^{-\frac{(x - m)^2}{2\sigma^2}}, \quad x \in \mathbb{R},
\]

where, \(m\) is the mean and \(\sigma\) is the standard deviation.

Definition 3. The \(\alpha\)-cut for a fuzzy number \(\tilde{A}\) is shown by \(\tilde{A}_\alpha\) and for \(\alpha \in [0, 1]\) is defined to be:

\[
\tilde{A}_\alpha = \left\{ x \mid \mu_{\tilde{A}}(x) \geq \alpha, x \in X \right\},
\]

where, \(X\) is the universal set.

Upper and lower bounds for any \(\alpha\)-cut \((\tilde{A}_\alpha)\) are shown by \(\sup \tilde{A}_\alpha\) and \(\inf \tilde{A}_\alpha\), respectively. Here, we assume that the upper and lower bounds of \(\alpha\)-cuts are finite values and for simplicity we show \(\sup \tilde{A}_\alpha\) by \(\tilde{A}_\alpha^+\) and \(\inf \tilde{A}_\alpha\) by \(\tilde{A}_\alpha^-\).

3. COMPUTING α CUTS FOR FUZZY NUMBERS

Let \(\tilde{a} = (a_1, a_2, a_3, a_4)\) be a trapezoidal fuzzy number. Note that an \(\tilde{a}_j\) -cut for \(\tilde{a} = \tilde{a}_\alpha\), is decided by:
\[
\alpha_i = \frac{x-a_i}{a_i-a} \rightarrow x = (a_i-a)\alpha_i + a
\]
\[
\alpha_i = \frac{a-x}{a_i-a_i} \rightarrow x = a_i-(a_i-a)\alpha_i
\]
\[
\tilde{\alpha}_{\alpha_i} = (a_i-a_i)\alpha_i + a_i \quad \tilde{\alpha}_{\alpha_i} = a_i-(a_i-a_i)\alpha_i, \quad 0 \leq \alpha_i \leq 1.
\]

Obviously the \( \alpha \)-cuts for triangular fuzzy numbers are obtained by using the above equations considering \( \alpha_2 = \alpha_3 \).

If \( \tilde{\alpha} = (m, \sigma) \) is a normal fuzzy number, then \( \tilde{\alpha}_\alpha \) is determined as follows:

\[
\mu_{\tilde{\alpha}}(x) = \begin{cases} 
\frac{e^{-\frac{(x-m)^2}{\sigma^2}}}{\sigma \sqrt{2\pi}}, & x \leq m \\
\frac{e^{-\frac{(x-m)^2}{\sigma^2}}}{\sigma \sqrt{2\pi}}, & x \geq m
\end{cases}
\]

\[
\Rightarrow \sqrt{-\ln(a_{\alpha_i})} = \frac{m-x}{\sigma} \Rightarrow \begin{cases} 
\tilde{\alpha}_{\alpha_i} = m - \sigma \sqrt{-\ln a_{\alpha_i}} \\
\tilde{\alpha}_{\alpha_i} = m + \sigma \sqrt{-\ln a_{\alpha_i}}
\end{cases}, \quad 0 < \alpha_i \leq 1. \quad (1)
\]

4. FUZZY PRODUCT OPTEATOR

We propose an approach for product of mixed fuzzy numbers approximately using \( \alpha \)-cuts. Divide the interval \([0,1]\) into \( n \) equal subintervals using \( n+1 \) equidistant points \( \alpha_0 = 0, \alpha_i = \alpha_{i-1} + \Delta \alpha, \quad i = 1,...,n \), with \( \Delta \alpha_i = \frac{1}{n}, \quad i = 1,...,n \). For normal fuzzy numbers \( x \in (-\infty, +\infty) \), it is improper to let \( \alpha \) be equal to zero. Therefore, for this case we consider \( \alpha \in (0,1) \).

Assume two fuzzy numbers \( \tilde{\alpha} \) and \( \tilde{b} \) with corresponding \( \alpha \)-cuts \( \tilde{\alpha}_\alpha = [\tilde{\alpha}_\alpha^-, \tilde{\alpha}_\alpha^+] \) and \( \tilde{b}_\alpha = [\tilde{b}_\alpha^-, \tilde{b}_\alpha^+] \). The product of the \( \alpha \)-cuts are:

\[
\tilde{\alpha}_\alpha \times \tilde{b}_\alpha = [L, R],
\]

where,

\[
L = \min (\tilde{\alpha}_\alpha^- \times \tilde{b}_\alpha^-, \tilde{\alpha}_\alpha^+ \times \tilde{b}_\alpha^+, \tilde{a}_\alpha^+ \times \tilde{b}_\alpha^-, \tilde{a}_\alpha^+ \times \tilde{b}_\alpha^+),
\]

\[
R = \max (\tilde{\alpha}_\alpha^+ \times \tilde{b}_\alpha^-, \tilde{\alpha}_\alpha^+ \times \tilde{b}_\alpha^+, \tilde{a}_\alpha^+ \times \tilde{b}_\alpha^-, \tilde{a}_\alpha^+ \times \tilde{b}_\alpha^+).
\]

Example 1: Consider the following two trapezoidal fuzzy numbers:

\[
\tilde{\alpha} = (1,5,6,9), \quad \tilde{b} = (2,3,5,8).
\]

The diagram of their product, \( \tilde{\alpha} \times \tilde{b} \), using equation (3), for 100 \( \alpha_i \)-cuts, \( i = 1,...,100 \), is shown in Figure 1. As seen in the diagram, the result is not exactly trapezoidal.

As another example, consider the following two normal fuzzy numbers:

\[
\tilde{\alpha} = (40,4), \quad \tilde{b} = (50,9).
\]

The diagram of their product, \( \tilde{\alpha} \times \tilde{b} \), using equation (3), for 100 \( \alpha_i \)-cuts, \( i = 1,...,100 \), is shown in Figure 2. As seen in the diagram, the result appears to be normal.
Next, we show how to multiply a trapezoidal fuzzy number with a normal one. We present a numerical approach to construct a model for the product and its corresponding membership function.

Let \( \tilde{a} = (a_1, a_2, a_3, a_4) \) and \( \tilde{b} = (m, \sigma) \) be the trapezoidal and normal fuzzy numbers, respectively. Given \( \alpha_i \in (0,1] \), the \( \alpha_i \)-product of these fuzzy numbers using equations (1) and (2) is obtained as follows:

\[
\tilde{a}_\alpha \times \tilde{b}_\alpha = [L, R],
\]

where,

\[
L = \min (\tilde{a}^-_\alpha \times \tilde{b}^+_\alpha, \tilde{a}^-_\alpha \times \tilde{b}^-_\alpha, \tilde{a}^+_\alpha \times \tilde{b}^-_\alpha, \tilde{a}^+_\alpha \times \tilde{b}^+_\alpha),
\]

\[
R = \max (\tilde{a}^-_\alpha \times \tilde{b}^+_\alpha, \tilde{a}^-_\alpha \times \tilde{b}^-_\alpha, \tilde{a}^+_\alpha \times \tilde{b}^-_\alpha, \tilde{a}^+_\alpha \times \tilde{b}^+_\alpha).
\]

According to equation (4), using \( \alpha_i = \alpha_{i-1} + \Delta \alpha, \alpha_0 = 0 \), and \( \Delta \alpha_i = \frac{1}{n}, \ i = 1, ..., n \), \( 2n \) points are gained for \( \tilde{c}^+ \) (\( n \) points for the \( \tilde{c}^-_\alpha \) and \( n \) points for the \( \tilde{c}^-_\alpha \)). The membership function of the product is obtained using the resulting points via \( \alpha \)-cuts and a regression method for fitting a membership function to the product.

**Example 2:** Consider the following two fuzzy numbers, one being normal and the other being trapezoidal:
\[ \tilde{a} = (5.9), \tilde{b} = (1.2, 4.6). \]

For the normal fuzzy number, we consider \( y = e^{-(x-\lambda)^2/\beta} \), where \( \lambda \) and \( \beta \) are the mean and standard deviation, respectively. The diagrams of the numbers and their product, \( \tilde{a} \times \tilde{b} \), using equation (5), are shown in figures 5 and 6, respectively. As appeared, the result is neither trapezoidal nor normal.

Using the points obtained from the \( \alpha_i \)-cuts considering \( n = 100 \), the amount of \( (\lambda, \beta) \) for the right side and \( (\lambda', \beta') \) for the left side are obtained by solving the corresponding least squares problems for the regression model.

To do this, we used the function CURVEFITTING in MATLAB. The obtained result is:

\[
\mu_{\tilde{a}}(x) = \begin{cases} 
  e^{-(x-\lambda)^2/\beta^2}, & x < \lambda' \\
  1, & \lambda' < x < \lambda \\
  e^{-(x-\lambda)^2/\beta^2}, & x > \lambda,
\end{cases}
\]

\[
\mu_{\tilde{b}}(x) = \begin{cases} 
  e^{-(x-10)^2/9.62^2}, & x \leq 10 \\
  1, & 10 \leq x \leq 20, \\
  e^{-(x-20)^2/10.24^2}, & x \geq 20.
\end{cases}
\]

Figure 5: Two fuzzy numbers
5. CONCLUSIONS

We proposed a practical approach for computing the product of fuzzy numbers using \( \alpha \)-cuts. To obtain the corresponding membership function for the resulting fuzzy product, we constructed a regression model by using a least square problem for regression. The proposed model, while being practically simple, has the flexibility to construct the product operator on various types of fuzzy numbers having the same type or being mixed.

6. REFERENCES

GLITZ, GLAMOUR AND SUSTAINABLE DESIGN

Dan May
Southern Arkansas University, USA

ABSTRACT
Graphic Designers try to manipulate desire in humans by making objects appear “good” when in reality the object of desire may add nothing but more flotsam and jetsam to our finite planet. A new age where sustainable practice with practical solutions must be taught to the creators of desire which melds science and technology with behavioral aesthetics. Ideas explored: (1) The rationale behind why humans are attracted to new objects, (2) Addressing the aspects of greed, wealth and value in terms of aesthetics and subjectivity, (3) Comparing desire with need and looking into the growing wave of scientific evidence that the need for change is required in a world of economic globalization, and (4) Education and awareness with an eye toward pushing altruistic behavior buttons is required to slow the inevitable increase of stress on the demand for natural resources.

Keywords: Sustainability, Design, Desire, Triple Bottom Line, The Five R’s, Attraction, Aesthetics, Subjectivity, Glitz, Glamour, The Future of Life, Pogo, Permanence.

OVERVIEW
As the famous cartoon character Pogo once said, “We have met the enemy and he is us.” We, in the design community, are responsible for much of the desire for the flotsam and jetsam that Americans generically call goods. We export the idea that the desire for more and more stuff is ‘good’, because it is associated with glamorous lifestyles of cultural icons. This didn’t happen overnight. It was a gradual process that has gathered momentum across a century of industrial and technological expansion unrivaled in recorded history. None of that information is new. The veracity of the fact that we are careening towards a precipice like a runaway truck full of drunken clowns is what may be debated by politicians, but not by the scientific community. It is past time for designers to abandon an approach that ignores these facts in the name of what may be characterized as glitz and glamour, and support a more rational and thoughtful approach which can be sustained. It doesn’t mean we all have to become penitent monks who live on a subsistence diet, and chant about the woes of overconsumption, but it does mean we have to start to think more rationally about the what, why and how we produce things.

Designers in the graphics community, of which I am part, have grown accustomed to our 19th century habit of rapid industrialization without concern for the consequences. Cause and effect, a western invention of scientific process that has served as a basis of knowledge, relies on empirical evidence to arrive at the simplest and most efficient way of explaining life around us, and so it goes with production. Humans thrive on that process, that postulate for prosperity: order and simplicity. It makes life easier for us in the short term. But this approach of not looking at the long term consequences of production or looking at the world we live in as a holistic organism has not served us well for all our accomplishments. We are running out of room, and running out of time. In short, we have built a system that is not sustainable. Scientists and environmentalists have been warning us for decades, but the word environmentalist, or ecologist is usually associated these days with the same class of people that the witches during the Salem Witch trials were, and in some cases metaphorically given the same treatment, and that in itself is lunacy.

Sustainability should be admired, and be second nature to us. It is an altruistic ideal which is at the heart of survival and cooperation. Though it still has a little bit of traction in this new age “of jobs at all costs” recession-like environment, its lustre is losing its shine. It is being relegated to the waste dump, and buried under non-organic b-s.

Only a few months ago “sustainability” had become one of those fashionable handles that politicians and journalists shake the guts out of by its constant use and repetition until the mere hint of its mention sends people careening into the hills, jumping off cliffs, or sticking their heads in ovens to avoid from hearing it again. It has been defined in many ways. One which I find particularly strikes a chord within me is the “means using methods, systems and materials that won’t deplete resources or harm natural cycles” (Rosenbaum, 1993). Simple and effective this definition appears to be common sense. If we collectively head in a direction that promotes those ideas, everything will be ‘jake’, jim-dandy, all good. Unfortunately, when you factor in the human equation of behavioral diversity, things become much more complex.
We are told by politicians in the U.S. that more countries want to be like us in terms of having a consumer based economy. It implies that the consumer is the ideal life form on the planet, a very scary thought. I imagine an evolutionary leap in human form under these conditions where we become bulbous animals, barely ambulatory. Automatic shovels are attached to our hands which are controlled by our eye movements. They scoop up whatever we find to be extra sparkly and then shove it into their oversized Jaba the Hut looking hyper extended jaws or place it on their amply distorted frames to wear. In short, consumers want …stuff, and that stuff may be making us into homogeneous automatons.

Americans, on average and according to recent data, consume more ‘stuff’ than any other developed country by a large margin. A mammoth margin. A margin that if you put us in a flimsy boat with the rest of the planet on the other end …our end would sink. What that forebodes is a massive appetite for things which cannot be satisfied by using the same methodology for production and waste management that is common today. We don’t have enough of what makes ‘stuff’ on the planet to sustain it. With present trends our boat hasn’t got a chance of floating, if everyone on the planet thinks, acts and eats like an American.

Data supplied by the World Resources Institute, an environmental organization which tracks consumption rates, “In monetary terms, most consumption still occurs in industrialized nations; according to the World Bank, the 2.3 billion residents of low-income countries accounted for less than 3% of public and private consumption in 2004, while the 1 billion residents of high-income countries consumed more than 80% of the global total (See Figure 1.) In this same year the United States accounted for 4.6 percent of the world’s population and 33 percent of global consumption—more than $9 trillion U.S. dollars.” If China, the world’s most populous country, consumed at the rate that Americans did, we would need three more Earths. “The average American, for example, consumes around twenty times more meat and fish and sixty times more paper, gasoline, and diesel than the average Indian.” (Source: Earth Trends, 2007. url: http://earthtrends.wri.org/updates/)

As designers (artists of the graphically and commercially inclined sort), our job, above all else, has always been to try to tap into what we know about human behavior, and turn it to the advantage of the people that we have been hired to serve. Those clients are usually business people who have a fast moving product that they want to sell. A design model initiated in the good old resource rich days of the early 1950s, when the U.S. dominated in production as well as consumption in the world.

Back then was no different than how it is now, it is broadly accepted that ‘good’ design should look “appealing” in some form. What makes it appealing can be a subjective matter that we can debate, argue and disagree another time, but that which I will also call “desire” is what the designer is employed to create. Make it gleam. Make it glamorous. Make it sparkle and shine. Designers are the cynics of Art, the handmaidens of commerce, the evil twin of the altruistic brother in the Art field, the Fine Artist.

Designers, enhance the desire in humans to be, to do, or to buy something… anything. We are visual motivators which provide the spark that drives the commercial engine. One could argue that the human behavior that I generically label as ‘desire’ is a natural cycle but desire runs contrary to being sustainable. Humans are always desiring something new. Sales of goods and divorce rates in developed countries bear that out. Our nature is to do the opposite of what Rosenbaum’s definition of sustainable life suggests, yet it is the only logical method one can keep our planet ‘viable.’ One could scarcely argue that “natural” human desires create a wholly positive outcome for the planet we occupy. Especially for ‘unappealing’ creatures, and plants. One might characterize humans as parasitic occupiers of a benign host.

The CDC defines parasites as an organism “that lives on or in a host and gets its food from or at the expense of its host.” Humans until recently appear to act as in the case of most parasites, that the only interest it has is to survive regardless of the hosts health. How do they do that is simple. Most products humans produce, depletes the resources we take for granted. We live in a finite world, but our desires are infinite so what’s gotta give? Economists long ago designed a formula for the objects of human desire. That formula is called “the law of diminishing marginal utility.” Simply stated the more of one thing that we have, the less we want it, and the less we have of a certain item the more we want it. Human’s natural reproductive and behavioral cycle could be quantified by this formula, and it explains the mechanism for tapping into and attaining wealth based on understanding this principle. But is it really wealth? We all seem to desire the concept of “wealth.” We measure our success in life by it. E.O. Wilson, in the book, The Future of Life, suggests that we reassess economic values such as GDP and base them on a method which balances it against natural resources lost. But humans don’t respond readily to terms like GDP or forests that exist (or not) hundreds of miles away. They respond more readily to what is in front of them.

If we take the weight of the objects we “own” and place them on a scale in our expansive green lawns, it might be a better measure of material wealth as any tallying system based on the nebulous shifting fog called value. Weight or mass can be
quantified and assessed. The more mass something occupies the heavier it is... Value is too subjective. Anyone who watches television and sees the plethora of programs devoted to looking into the value of old things know that they can only be quantified by historical context, and desire. Today’s junk maybe tomorrow’s treasure and what “artworks” that may have been deemed collectible by the “powers of fashion” now may at one time in the future be valueless flotsam, or vice versa. Maybe the other way beyond mass to determine value and therefore wealth is permanence.

Permanence implies immortality. Immortality implies in many cultures that you must have done something good in order to be rewarded with such a gift. When it comes to structures, artworks, or anything else made by humans, we associate permanence as value of greatness. Can anyone argue the Great Wall of China is not great, or the Great Pyramids? It even says so in their name. If a building falls down after twenty years it must not have been built that well, sooo it’s not so great. It’s survival of the fittest so to speak...It’s something lasts a long time, then it has value...but many of us neglect to realize that there is a great deal of maintenance involved in giving the appearance of permanence to any object. Humans are constantly trying to maintain the appearance of many of our “great” structures and artifacts and they still are in decay. Ask any movie star who has to cheat the onslaught of time by any means necessary in order to remain to appear youthful. It’s a losing battle.

There is not a product that humans can create, nor is there an organic entity or mineral on this planet that is permanent in any real sense. The universe doesn’t operate that way. It usually decays in accordance with the laws of entropy. So......back to our measure of owned property that I previously mentioned ...when that “owned” property ceases to function as originally designed it is usually disposed of in the time honored fashion of our prehistoric ancestors. We bury it or burn it. Brilliant! Now all of that mass and weight has to be redistributed somewhere to decay, and since we try to build things to last some if it takes a long time and obviously is made out of chemicals and processes that are harmful and sometimes fatal to us all. So what is the solution to imbuing products to retain that polish that people will want to keep them and maintain them?

With very little maintenance, the ideas that humans hold as culturally significant to their identity are guarded and protected with vigor. Many times, our governments use threats to our value systems as motivation for war, incursion and protection against ‘others’, so as designers why not imbue products with ideas of worth and value which transcend usefulness. Why not make products so aesthetically pleasing and intrinsically culturally significant that is difficult to even throw a cereal box away. This has been tried to a certain extent from the early 20th century Bauhaus movement to the Internationalist Movements of the mid 20th century where both movements decried useless ornamentation and for “form to follow function”, but it quickly became too reductionist and austere in appearance and died out as a design movement due to its perceived blandness. So it appears that even ideas have a shelf life. Even if this were not true, my concept of keeping the polish and glitter on products quickly falls apart when we think of how many food products we consume in a week. If we saved every cereal box, our house would soon be an aesthetically pleasing dump, where we would barely have room to move. Obviously, this is very impractical.

To prevent the loss of resources requires more than aesthetics, more than imbued concepts, or the retooling of human behavior. (A slightly less than impossible task,) It requires that we rethink design. A designer must rely on ideas...concepts which will resonate that will keep the glitter, gleam and glamour alive as long as possible, sure, but she/he must also be aware that no matter what, decay is inevitable. Wealth is impermanent. Life is in flux and nothing lives forever.

As Graphic Designers the products, packages, and objects that are generated at the bequest of a client should be deemed successful by how well it decays as much as any other quality, and to make sure that decay provides at worse no effect on the rest of the planet. To paraphrase the Cradle to Cradle™ folks of McDonough and Braungart...”do no harm.” Ideally, if a container for a food product decays shortly after the shelf life of the food it contains and its decay actually assists in making the planet healthier, then it should be produced above all other methods. Using the GDP formula that E.O. Wilson proposes, the depletion of resources should try to balance with the economic benefit. With this type of thinking in effect, each would be in balance and be sustainable, and the term wealth could be re-evaluated in terms of not only bottom line methods that most businesses follow but a triple bottom line method which was a phrase first used by British economist and sustainability expert, John Elkington.

Elkington’s method factors in people, planet and profit...the three ps. I’ll discuss the people aspect: fair trade. People need money to live. They require enough so that are not living hand to mouth. Being poor makes it much more expensive to live in terms of relative income than being rich. Most of your money goes to food and clothing and often times you look for lower grade materials in order to afford them. These materials are sometimes more environmentally destructive than their ‘expensive’ counterparts to the environment in terms of production methods, and wear out faster.

Simply put it requires more energy, creates an inferior product and produces harmful results to the people and the planet. High calorie foods are another example of this. Corn being the biggest culprit. Corn production is subsidized in the U.S., yet is
exported to undeveloped countries as a good crop to grow. It requires a great deal more of the water to produce than many indigenous plants do and can strip soils of their nutrients quicker. We export the idea that corn is good because American corporations control the patents and American fast food purveyors use corn...a lot of corn...in their recipes for soft drinks, and as feed for animals such as beef and chicken. Americans buy into the idea promoted by the involved industries and assisted by the design industry that they have invented a ‘foolproof’ cheap method of production in the US, so it should work for other countries too.

I don’t want to sound as if I think all corporations are bad. What responsible corporations are beginning to do is make sure that off shore suppliers are providing people with a living wage, so much of this poverty and destruction can be avoided. It is a holistic, altruistic approach, and should be applauded. Global retailers such as WallMart are beginning to take this long term approach, so are manufacturers such as Nike, but it is not widespread enough, nor is it as far reaching as it could be. Many companies are beginning to back off from the concept, especially now since the global recession occurred.

Too many companies repeatedly avoid fair trade practice and use the recession as the reason it is necessary. Their claim is an old repeated axiom. It costs jobs and interferes with the bottom line of profit and loss. They don’t have the time or the energy to be concerned about the livelihood of workers in distant lands, or the damage it may cause to the land itself when jobs are at stake.

About seven years ago, I was approached by a client to do some package design work for a major retailer. In the process of asking what they needed as far as concept, materials and who their target audience was I asked the person in charge of the project where this package and product was to be produced. He told me the Southeast Asian country that was going to manufacture it. Coincidentally, at that time it had been widely reported in the press and in the blogosphere that this country’s citizens were not making a living wage and in some cases there were Human rights violations. Some employees were being treated no better than the indentured servants of the feudal age in Western Civilization. I mentioned this to the manager in charge and suggested that I had some alternatives if were interested. He told me that he could not be held responsible for “cultural differences” or “managerial approaches” of outside vendors, and questioned me as to why I should care. He said, “Nobody in retail does this, so I’m not going to.”

I had to refuse to do work for them, because he held profit to be more important than anything else, which said to me he really wasn’t interested in good design anyway. Did that hurt my bottom line, and did it hurt my career? I really don’t know, but it does provide an example that I could portray myself as a knight in shining armor. (Those occasions are rare for me and need to be savored.)

I tell students in all of my design classes that you needn’t demand of clients to do anything, if you want to keep them as clients, but offering suggestions or alternatives is a good start in building a sense of respect between you both. If they appear to be open to your suggestions, then that is a foundation for a good working relationship. In the cases that you must ‘fire’ clients by letting them know that they will have to get another designer for reasons stated above, can only create a good reputation for yourself, especially if word gets around. People, in my experience, want to believe that they are ‘doing the right thing’ even if it sometimes interferes with their wealth objectives. The goal is to at least give them some options. Options that factor in the health of the planet and the health of its occupants can be a highly motivating force. Some studies have shown that a sense of altruism is strong in most humans and we may even be hardwired for it according to a recently published article in Science and Nature and reported by BBC writer Helen Briggs, and we may not be alone in this thought to be uniquely human trait:

“Human society depends on people being able to collaborate with others - donating to charity, paying taxes and so on - and many scientists have argued that altruism is a uniquely human function, hard-wired into our brains.

The latest study suggests it is a strong human trait, perhaps present more than six million years ago in the common ancestor of chimpanzees and humans.

“This is the first experiment showing altruistic helping towards goals in any non-human primate,” said Felix Warneken, a psychologist at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany.

“It’s been claimed chimpanzees act mainly for their own ends; but in our experiment, there was no reward and they still helped.”

(Altruism ‘in-built’ in humans, Helen Briggs, BBC News science reporter, 2006)
Unfortunately, many times corporations are far from human in their behavior even though their boards are allegedly all comprised of humans.

In a study regarding psychopathic tendencies of human beings who are far from altruistic in their behavior, they identified certain traits which separate them from most of us so-called “normals”. What’s disheartening is that we find that corporations exhibit many of those psychotic traits. In fact the behavioral mechanisms have even been written into their management systems regarding the bottom line. The evidence of corporate behavior being somewhat psychotic is plain to see. We see it in the advertisements, public relations pieces and overall identity that designers help create.

Below is a short list of tendencies exhibited by psychopaths.

- “glibness/superficial charm
- grandiose sense of self worth
- need for stimulation/prone to boredom
- pathological lying
- conning/manipulative
- lack of remorse or guilt
- shallow emotional response
- callous/lack of empathy
- parasitic lifestyle
- poor behavioral controls
- early behavioral problems
- lack of realistic long term goals
- impulsivity
- irresponsibility
- failure to accept responsibility for their own actions
- many short term relationships
- juvenile delinquency
- revocation of conditional release
- criminal versatility”

(The Hare Psychopathy Checklist-Revised, 1991, Toronto: Multi-Health Systems)

If you compare this to many of the corporate reactions to problems associated with everything from oil spills to embezzlement, to criminal behavior, and downright stupid negligence in infamous cases involving Enron, World Com, BP, Exxon, Bank of America, Ford, General Motors, Toyota, Merrill Lynch, Goldman Sachs,( the list could go on and on), they compare very unfavorably. What traditionally has been held as the responsibility of a corporation’s board was “maximize profitability ” to the stockholders. This leads to psychotic, and sociopathic behaviors, but it increases a stockholders wealth and therein lies ANOTHER problem.

Wealth is a thorny issue. Success and wealth are concepts, which to some, are based on one of the basest emotions: greed. To most of us greed is bad. It is culturally, ethically and morally antithetical to our core principles in the US. But to some in the business community they conjure the name of Adam Smith and imply that Smith believes that greed is a strongly positive motivating force for the good of economic prosperity. They propose that “healthy” economies are driven by this motivating force. But this may be is a mistake in reasoning, or selective excising of evidence in order to further a point that I don’t believe carries any weight.

Here is part of the quote in question, which I believe contains the salient issue of greed:

“Give me that which I want, and you shall have this which you want, is the meaning of every such offer; and it is in this manner that we obtain from one another the far greater part of those good offices which we stand in need of. It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages.” (Wealth Of Nations, I.i.2: pp 26-27)

What I propose he is saying is essentially part of every altruistic cultural lifestyle and accepted religious group, a version of the Judeo-Christian ethos …Do unto others as you would have them do unto you. The motivating force may be self interest but so
is the motivating force of the “Golden Rule.” This does not propose to give license to corporate boards to run rough shod over the good of the many so that they may accommodate their share holders.

In the past, a designer’s excuses for never pushing our clients to look at the long term benefits of designing sustainably were legion. It was difficult to get a handle on all the information, many of the technologies were too expensive and too cumbersome, nobody else is doing it, so why should I. The long and short of it is that we no longer have any more options. We have to do it. We live in the 21st century, but it is not the world of Flash Gordon, Star Trek, the Jetsons, and all of that popular culture utopia that I expected, and ingested when I was a kid. I used to wholeheartedly believe that all our problems could be solved by technology. That belief may be a bit jaded now. We live in a world where the reality of finite natural resources present problems that require monetary resources and brain power to solve. Both of these we have. What we need is the will to do it.

McDonough & Braungart’s advocate to try and imitate the natural processes of the planet’s closed system of finite resources to build an infinitely replenishing cycle of prosperity. Reuse, reduce, recycle, regulate and restore may be the only answers. This requires another ‘r:’ research.

There’s obviously a growing demand for everything from designer tee shirts to luxury autos due to the inexorable steam-roller of globalization. We know the eventual damage this will cause for the planet will increase exponentially if there aren’t some controls put into place while we search for answers. We need a strong push towards building awareness that we can’t keep eating the seed potatoes when we should be planting them to adapt a phrase. We should be abandoning our parasitic behavioral patterns out of a sense of survival. Many of the people responsible for wanting the same system to continue are wealthy enough to pour money into creating misinformation against the “sustainability crowd,” but with increased education and awareness this cannot stand for long.

We already know about Global Warming, and some of us believe in the science which confirms its reality. Whether it is due to human factors or not is immaterial. We know that the increase in fossil fuel demand and the release of carbon gases such as methane locked into the permafrost of the arctic and deep in our oceans trenches will have some very powerful effects on how we currently live. An increase in droughts, violent storms have become more frequent and damaging. The diminishing land mass, slowing of the natural engine of the weather patterns that are affected by the sun’s heat as well as the cooling capacity of the ocean may make some cities uninhabitable in the not too distant future. There are also other things to consider which don’t receive nearly as much “play” in the media but could have a much more serious (if possible) effect on human civilization and planetary health. The loss of usable drinking water can be the most frightening of these, but as I said before all of this can be fixed if given the will.

Proposing to students that they design with controls in mind, (the five r’s and the 3 p’s) and reminding them that they have to be inventive, use less material, maintain cultural awareness, and define the entire life-cycle of a product’s usage are some of these. It does not mean however that things need to be bland. They can still adhere to artistic standards of excellence associated with good graphic design. It’s just a tougher row to hoe. Parameters seem often times to be limits to creativity rather than being an impetus for stimulation, but I believe that it is the hard problems which promote creativity not the easy ones.

Even though the “r’s” of reuse, reduce recycle, regulate and restore may seem to me to be a hackneyed approach, it is at present the best avenue for sustainable design. The design efforts used in preparing for a project with those “r”s, along with the triple bottom line approach always in mind are essential. The solutions discovered in the process may be more creatively rewarding than the glitz and the glamour that we deem fashionable for the short term. The realization that one knows that they are trying to do the right thing should last for an age and by default is easily sustainable.
ABSTRACT

Melatonin fluid and AIDS text is unparalleled in its' observations of the Human Immune Defense System diseases deletion concept. Melatonin fluid acts as an antioxidant that's present within all cells. Melatonin fluid is significant in cell activation, growth, structure and phase energy motion / momentum (M/M). A combination of chemical reactions bind together in various stages forming melatonin fluid. This biological Cross Over observer concept will feature; melatonin fluid as a common elixir within blood plasma cells and as an insatiable desire of AIDS cells. Hidden viral encoded messages within AIDS cells will be unlocked, accessing a stream that plugs into phase energy M/M activity. This text will blend a Cross Over concept of viral encoded messages that links melatonin fluid, its' transport chain, neuron retinal cells and a buffer solution, that'll co-exist with a common household chemical compound. The human immune defense system network has been blueprinted, documented and structured in text form for more than 120 years. "It’s just like those times when you cannot find your eyeglasses, only to discover them resting on your nose". Cellular immune science, in its' haste to find answers or an 'instant over the counter cure' to what has now become a life threatening enigma within individuals throughout the world. Somehow, mankind has allowed small yet obvious solutions to become elusive and over looked by rushing in without any logical scientific observations. The Ancient Forefathers’ of cellular biology; Dumas, Gallo, Koch, Mendel, Mendeleyev, Nissl, Pasteur and other ancient cellular biologists' have detailed a foundation for the future advancements of cellular science. By mapping microscopic structure of antigens, bacteria, plasma cells, molecules, neuron cells, pathogens, proteins and nearly all viruses that are known to mankind. It's now up to modern cellular science to discover hidden viral encoded message links that'll access viral streams leading to disease cures within the human immune defense systems' Viral Code Network. This text will take a bulls-eye-on-target aim at plugging into streams linking AIDS to a common household chemical compound. This common blend or mixture will reveal a series of very significant streams linking to human body tissue, blood circulatory and lymphatics.

Keywords: Human Immune Deficiency Virus, Melatonin Fluid, Buffer Solution, Amino Acid, AIDS.

1. HUMAN IMMUNE DEFICIENCY VIRUS / HIV

History states, the HIV virus was first discovered in 1983 a.c.e. by Luc Montagnier of the Pasteur Institute in Paris, France. He called his discovery 'Lymphocyte-Associated Virus (LAV)'. Independently, U. S. scientist Robert Gallo of the National Center Institute at Bethesda, Maryland, claimed its discovery in 1984 a.c.e. and called it 'Human Lymphocytotropic Virus 3 (HTLV-3)' [1]. Most people don’t feel any symptoms when they first develop the HIV virus. Others have a flu like illness within days to weeks of when they first develop the virus. They complain of extremely high fever, headaches, tiredness and enlarged lymph nodes at the neck. These symptoms will usually disappear on their own after a few weeks. After that, the person feels normal and there’s no more symptoms. Asymptomatic stages will last for a few years. The progression of the disease will vary among individuals due to individual pH factors; Body Mass Index (BMI) variant mass and Basil Metabolic Rate (BMR) invariant mass levels. This low positive phase energy progression period may last from a few months to 10 years or possibly longer. During this period AIDS cells continue to divide and multiply slowly without any constraints, growing and destroying healthy cells of the immune defense system network. AIDS cells destroy the blood cells that are the primary infection fighters, special types of blood plasma cell’s known as Memory B cells or CD4, T -cell helpers and B Plasma cells. Even though the individual has no signs or symptoms, he or she is contagious and can pass the AIDS cells to others through a variety of access points. AIDS cells is the consequence of the HIV virus; it's when the immune system begins to lose its' ability to fight infections. Once memory B or CD4 cell, T -cell and B plasma cell counts fall below the healthy boundaries of its’ host, an infected individual is said to have AIDS. The diagnosis of AIDS, is sometimes made when the individual has unusual viral infections or cancers that shows a weakened immune defense system. Infections that occur due to AIDS related complications are called ‘Opportunistic’ infections. The predator infectious virus takes advantage of the opportunity to further infect the individual host [2]. AIDS cells attach themselves onboard a healthy cells’ outer membrane using its' many protruding Dendrite microtubules Fig. 1. AIDS cells have multiple appendages / dendrite microtubules that allow it to grab on and plug into a healthy cells' membrane for a predator ganglion-like take over. Once an AIDS cell has detected melatonin fluid within a cell, it'll begin to dig in deeper within the healthy cells' exterior membrane. A once healthy cell will now become a host for AIDS cells as they take over a healthy cells' structure as a new home, already equipped with a supply of melatonin fluid for the taking. Neuron ganglion cell's are minuet and appear similar with multiple appendages or dendrite microtubules structure Fig 2. AIDS cells divide and multiply just like cancer cells, without any signs of stability Fig. 3, this cycle will continue until you absolute stop quantum structure activity of AIDS cells.
2. MELATONIN QUANTUM STRUCTURE

Melatonin fluid is located within a cell’s interior membrane of its’ nucleolus matrix. Melatonin is the widely distributed high positive phase energy M/M hormone located within cells of the body. Levels of melatonin hormones vary in a daily cycle. Melatonin fluid is a hormone that’s manufactured naturally by the Pineal Gland. This hormone communicates information to the body about environmental lighting. It has antioxidant properties as well as a broad range of effects on the body, from cell growth, structure, reproduction function, biological rhythms, sleep patterns and it’s a significant compound in manufacturing L-Tryptophan [3]. All positive phase energy M/M sources in nature, all foodstuff of living things produce melatonin fluid. It powers virtually every phase energy motion activity of a cell and host organism. All organisms from the simplest most common bacteria to human life forms uses melatonin fluid as the primary phase energy M/M source. Many biological effects are produced through melatonin receptor activation. It can also produce a variety of peripheral cells like bone marrow cells, epithelial cells and lymphocytes. Melatonin fluid levels found within these cells have more of a chemical concentration than in the circulatory system. Melatonin fluid phase energy levels carry just the right amount for most biological cell structure reactions. Blood of the circulatory system contain low phase energy amino acid bonds which are not very useful for high phase energy M/M. Low phase energy amino acid bonds must be translated into high phase energy bonds [4]. Melatonin released in blood acts as an Endocrine Hormone. Melatonin fluid has duality within the quantum mechanic structure of biological cells and physics particles matter activity. A steady stream of melatonin fluid is so critical for cell life, that if a poisonous substance were to attach itself to any of the amino acids or protein compound structure of melatonin fluid, it would absolute stop phase energy M/M structure activity. Melatonin is what creates activity for phase energy M/M within AIDS cell structure. As a consequence of deleting phase energy M/M structure; will cause AIDS cell structure to asphyxiate and oxidate, due to quantum structure contraction. Within the structure of a cell, there are organelle structure that allow for phase energy M/M, proper pH levels and other major network operations occur within the interior membrane of all cells. Interior organelle networks of a cells’ membrane must follow a set of encoded mapping and a series of encoded instructions that have been passed on through heredity within the DNA / Information Pack (IP) materials of a cells’ nucleolus. An absolute stop of its’ quantum mechanic structure is how AIDS cell activity is to be approached for contraction / deletion. A contraction of quantum structure will oxidize AIDS cells’ phase energy M/M, without propagating any further harm to the individual that has AIDS. AIDS cells’ phase energy M/M must be absolute stopped / deleted from its’ interior quantum structure to its’ exterior membrane structure. In a Cross Over observation; deletion must occur ‘From the inside out’.

3. AIDS CELLS PREDISPOSED TO MELATONIN FLUID

Melatonin is made from the basic amino acid tryptophan, its’ a bi-product in manufacturing of morphine fluid within the human brain. Tryptophan is an essential amino acid, the body cannot directly manufacture it; we need to get it through the foods we eat. We are learning that its’ a significant influence on our hormonal, immune and nervous system [5]. Melatonin appears as an addictive drug for AIDS cells. AIDS cell axon microtubules latch on to then penetrate healthy cells outer membrane to become HIGH / intoxicated by melatonin fluid located within cells interior membrane structure. AIDS cells act akin to a leach as it syphons melatonin fluid from a healthy cells interior membrane. AIDS cell quantum structure are encoded to function as long as there’s melatonin fluid available for synthesizing. Melatonin fluid is manufactured by the pineal gland, it’s about the size of a pea, and located in the center of the brain outside of the Blood Brain Barrier (BBB). Melatonin fluid is mostly found located within the BBB Network. The BBB network regulates sleep-wake cycle and lowering body temperature [6]. In a Cross Over comparison; HIV virus symptoms include; tiredness, fatigue or a lack of sleep and very high fever temperature [7]. Those symptoms are analogous system functions of the pineal gland network and are significant in all evolutionary stages of HIV. Fatigue and high body temperature provides for a significant consequence of HIV virus, it leads to; stress, weakness, possible system breech, leakage or failure occurring from within the human internal closed isolated systems, which requires consistencies and principals for maintaining optimum functional system performance for a healthy hosts’ BMI-BMR levels. It’s
believed that latent HIV can cross the BBB inside of circulating monocytes in the bloodstream (Trojan horse theory) within the first 14 days of infection. The BBB acts very effectively to protect the brain from many common bacterial infections. Thus, infections of the brain are very rare. However, since antibodies and antibiotics are too large to cross the BBB, infections that do occur are often very serious and difficult to treat. The BBB becomes more permeable during inflammation, meaning; that some antibiotics can get across. Viruses can easily bypass the BBB by attaching themselves to circulating plasma immune cells [8]. If cells can enter this region, neuron retinal cells can also exit a systemic region, known as the Blood Retinal Barrier (BRB). In a Cross Over related comparison; water pipes within your home will leak or fail under similar consequences such as stress, weakness and intense heat. HIV virus symptoms and BRB daily network functions incorporate systemic similarities. AIDS cells appear to nest as neuron retinal ganglion cells that have escaped the BRB, due to the high intense body fever that leads to an enlarging and swelling effect of the closed isolated system network of the BRB. There’s a thin membrane bridge formed by a Fenestrated capillary network of Endothelial cells that acts as a tight-thin separation point between the BBB and BRB. Escaped neuron retinal cells would have the ability to communicate through a communication synapse. Neuron retinal cells through synapse, have the ability to keep an individual within an awakened state, by producing high and low body temperature effects within the individual nervous system. Chills and fever effects will make the infected individuals’ pineal gland to manufacture as much melatonin fluid as possible, even while the individual is in an awakened state. Fenestrated capillary membrane bridge will repair itself, once high body temperatures have returned to within viral code network boundaries. AIDS cells appears to have a hereditary predisposition gene that plugs in for high amounts of melatonin fluid for phase energy M/M and activity.

4. MELATONIN TRANSPORT CHAIN

The melatonin transport chain are arrangements of amino acid compounds within the living cell, takes part in positive phase energy M/M production. Melatonin fluid transport covers the entire Cardiovascular system network, it’s the means by which amino acids and proteins are oxidized in various stages Fig. 4. Amino acids from within certain stages can be used for the manufacture of melatonin fluid by oxidative molecules [9]. Melatonin fluid operates as a type of growth elixir, antioxidant and protection by enhancing cell interior and exterior membrane structure and reproduction [10]. AIDS cells appear akin to neuron cells ganglion as it nest on the outer membrane of healthy cells Fig. 5, it grabs and tears its’ way through the outer membrane into the interior membrane of a healthy cell, where melatonin fluid is located. AIDS cells appear addicted or predisposed to melatonin fluid existing within a healthy cell structure.

5. NEURON CELLS / AIDS CELLS

A neuron is a special type of cell found in the bodies of most animals, all are members of the Eumetazoa group. There are estimated to be as many as 100 billion neurons in our nervous system network. The main portion of the cell is called the Soma or cell body. Neurons have a large number of extensions called Dendrites. One extension is different from all the others, and is called the Axon. At the very ends of the axon is the axon ending, the ending are known as Bouton, Synaptic Knob, Axon Foot [11]. Neuron dendrites axon ending are noticeable in Fig. 6.

AIDS cell are special types of cells found in the human body network. AIDS now infects over 50,000 people every year, without any decreases in numbers since the epidemic began nearly 30 years ago. There’s an infinite amount of blood plasma cells and other cells within the human body. Healthy cells, and AIDS cells have a large number of extensions called Dendrites. One
extension is different from all of the others, as the imagery below shows, AIDS cell axon endings are noticeable in Fig. 7. In a Cross Over comparison; all cell structure within the human body are similar in features and shapes. Differences in cells are chemical compound mixtures and encoded DNA / IP material. Humans, like all eukaryotic cell structure are analogous in basic quantum cellular make-up. Dendrite extensions or arms, with grabbing axon or hand structure on the ends of the extensions.

Figure 6

Figure 7

6.

A Cross Over concept observation explanation is; it appears that AIDS cells are neuron retinal cells, that have escaped from the BRB located behind the eyes and in front of the BBB. AIDS cells require constant amounts of high phase energy produced by melatonin fluid. Photosensitive Ganglion Neuron Retinal (PGNR) cells are accustomed to constantly feeding their tremendous thirst for high phase energy. PGNR cells are mainly excited at the presence of blue cones or daylight of the visible light spectrum. Their response to visible blue light stimuli produces phase energy increases within PGNR cells’ nerve impulses, at an increased rate [12]. PGNR cells mature within a closed isolated system of the Optic system network. Neuron retinal cells receive a constant flow of high photon particles matter streams or daylight, found in normal daily light exposure for its’ growth, nourishment, reproduction, structure, vision and phase energy M/M [13]. The optic system networks’ cell environment has a duality. Melatonin fluid is available for low invariant rest mass while the body is asleep. Known as quantum low phase energy, the optic network utilizes photon particles matter streams or daylight, for high variant quantum phase energy for thirsty neuron retinal cells while the body is awake. Neuron retinal cells are high phase energy specialty cells. They can communicate through electro-stimuli to the BBB via nervous system pathways, some of the stimuli is good and some not so good. Some neurons cells are called Sensory neurons, they’re located in the skin, muscles, joints and organelles that regulate pressure, temperature and pain. Neurons of the retina are sensitive to light, and allows us to see [14]. Neuron cells have the ability to create an electromagnetic shock that feels like chills. Anyone that’s had a fever before understands the electrical shock-like effects of a sudden chill feeling. Simultaneously, you will immediately open both of your eyes, allowing photon particles matter or daylight to enter the eyes for thirsty neuron retinal cell nourishment. Neuron retinal cells also conduct electrochemical impulses called nerve impulses or action potential. All neurons cells outside of the central nervous closed isolated system network, can conduct impulses along hairlike cytoplasmic dendrite extensions through nerve fibers and axons. Axons grow out of the cell body, which houses the nucleus as well as other interior organelle structure [15]. In a Cross Over observation; AIDS cells are the results of an autoimmune presence, not an invasion of foreign cells from an unknown origin (ie. Rhesus monkey theory). Instead, neuron retinal cells escaped from the optic network via the intense high body temperatures at the onset of attaining the HIV virus. Fever or body heat processes has allowed for the hosts’ own cells of the BRB viral code network region to escape, they’ve infiltrated beyond their original viral code networks’ boundaries. As time passes, neuron retinal cells are reproducing and running amuck within a more viral code sensitive region then they’re accustomed to. Within the BRB neuron retinal cells interact with other neuron retinal cells, as they manically interact within their own viral code boundaries, receiving needed high phase energy from blue cones or daylight. High sensitivity levels within the blood and lymphatic systems are due to their specific functions. The immune network is regimented for strategically targeting unwanted materials, not manic feeding exchanges of high phase energy levels. Neuron retinal cell presence propagates a haywire effect among blood plasma cells. Blood plasma cells are being attacked by escaped cells from another cell network within the hosts’ body. AIDS cells are not infected cells, instead they’re fugitive virulent neuron retinal cells feeding on healthy plasma cells’ melatonin fluid for phase energy M/M activity and reproduction. Escaped neuron retinal cells must be deleted or contracted from body tissue, blood circulatory and lymphatic systems.
7. BUFFER SOLUTION

A mixture of compounds chosen to maintain a proper individual pH, is known as a Buffer. The commonest buffer solution consist of a mixture of a weak organic acid and one its' salts, or a mixture of phosphoric acid. The addition of either an acid or a base causes a shift in the chemical equilibrium, thus keeping the proper pH necessary for the health of the individual [16]. You can change the pH of the buffer solution by changing the ratio of acid to salt or by choosing a different acid and one of its' salts [17].

Baking Power is a leavening agent, most frequently used in recipes like cakes, quick breads and pancakes Fig. 7. You will often see baking power advertised as double acting. Unlike baking soda, baking power has a Duality, it frequently adds an additional ingredient usually an acid to a bicarbonate of soda. This results in a higher rise level in baked goods, because the rising begins at room temperature instead of when foods are baked. The most common combination of acids and an alkaline that binds to manufacture baking soda are; cream of tartar and sodium bicarbonate. Sodium bicarbonate plugs in at high temperatures, but to combine it with an acid, like cream of tartar activates it earlier. Not all recipes require baking powder, in fact, some recipes can be ruined by the double duality rise mechanism. When a recipe calls for baking soda, using baking power can cause to much rise. Substituting soda for power may result in flatter baked goods. “YOU MUST USE BAKING POWER CONTAINING SODIUM ALUMINUM SULFATE” use double acting with duality. Baking powder has the double acting rising effect, the first activation occurs when wet, second rising occurs when heat reaches the baking powers’ activation degree [18]. Once activated, the solution will filter into body tissue circulatory and lymphatics, causing a simultaneous contraction / deletion of unwanted material and AIDS cells.

Ascorbic acid is an antioxidant that’s contained in melatonin. Ascorbic acid better known as Vitamin C, oxidizes in the presence of metals [19]. Antioxidants act as a protector, a coating of armor, preventing any medications from destroying AIDS cells exterior membrane structure. Baking powder with sodium aluminum sulfate, utilizing glucose as a masking agent will offer a sweet treat for addicted to melatonin fluid abusing AIDS cells. Junky, melatonin fluid abusing AIDS cells will enjoy a sweet treat. Sodium aluminium sulfate will bind to the interior membrane of AIDS cells’ mitochondria protein structure, resulting in an oxidation / rust, and contraction of its’ interior cell structure. An absolute stop and deletion of unwanted quantum structure activity.

Thiols is another antioxidant contained within melatonin fluid, this reaction releases enzymes that carry a bad smelling sulfur gas odor. Thiols are responsible for the telltale odor that lingers after skunk spray [20]. The odor of thiols could possibly be the reason that prevents T-cell helpers from binding with B plasma cells for defending the immune network against AIDS cells. The odor of the AIDS cells defensive chemical spray mechanism activates a Fight-or-Flight response from T-cell helpers. American physiologist, Walter B. Cannon 1871 - 1945 a.c.e., theorized that animals react to threats with a general discharge of the sympathetic nervous system, priming the animal for a fight-or-flight response [21]. Apparently, T-cell helpers have decided flight is the best option, far away from the odor of AIDS cells’ defensive activity spray.

8.

Melatonin and Serotonin, both belong to the amino acid chemical group that contains the amino acid Tryptophan. Serotonin is one of the chemicals that regulates emotions, depression, bi-polar disorder, anxiety, migraine, sexuality and appetite. As well as being found in the brain, serotonin is found in abundance within the digestive system as well as in the circulatory system network. When the proper foods are digested, the host creates its’ own serotonin [22].Tryptophan is an amino acid that’s essential for organisms. Amino acids, are building blocks in protein biosynthesis and cannot be synthesized by the organism, so its become a significant part of an organisms or individuals diet [23]. Melatonin, serotonin and tryptophan are chemical compound mixtures involved in the manufacturing of Morphine in the human brain, it works as a self inducing or a self regulating pain reducer.

Baking powder releases carbon dioxide CO2, this cause’s bread to bubble, rise, swell or bleb. In a Cross Over observation; melatonin fluid oxidizes when it comes in contact with CO2. If you want to prove how baking powder works, simply try mixing a teaspoon of baking powder into a cup of hot water Fig. 8. If the baking powder is fresh, you will definitely see a bubbling, rise, swell or bleb type of chemical compound reaction [24]. Tiny minuet in size AIDS cell structure will experience the same chemical compound reactions; a bubbling, rising, swelling or bleb type of reaction within very tiny minuet cells’ structure.

Sugar is glucose and fructose Fig. 9, both common compounds belong to the carbohydrates chemical group [25]. The respiration reaction inside of AIDS cells, involves the oxidation of melatonin, serotonin and ascorbic acid or vitamin C. Melatonin’s the desired drug of variant AIDS cells in the human circulatory system network. Glucose acts as a masking agent,
helping to camouflage and transport the anti-viral medication used for deleting unwanted cancerous causing material within body tissue, circulatory and lymphatic systems.

9. DEVELOPMENTAL ANTI-VIRUS INJECTION

This significant common chemical compound of baking powder sulfate and glucose or sugar will provide the necessary Cross Over concept, revealing encoded viral code messages that link to the absolute stop of quantum mechanic structure phase energy M/M within AIDS cells. The acidity and aluminum content of baking powder sulfate will cause an oxidation of interior membrane mitochondria organelle structure within AIDS cells. Cell oxidation will cause AIDS cells interior membrane mitochondria to corrode, rust and become oblate, resulting in an absolute stop of phase energy structure. The rising compounds in baking powder sulfate are; sodium aluminum sulfate, baking soda and beaten egg whites. This combination causes a bleb or swelling effect due to air bubbles produced by baking powder sulfate reactions. This chemical compound combination produces high levels of CO₂ within AIDS cells. Baking powder sulfate has a duality. Carbohydrate glucose or sugar is the sweet taste that acts as a masking agent, hiding the acidity levels of the baking powder sulfate compound. AIDS cells appear to have an innate predisposition or addiction for melatonin fluid. This Cross Over concept combination of baking powder sodium aluminum sulfate and glucose will cause an absolute stop of phase structure of AIDS cells mitochondria organelle structure. As a consequence; AIDS cell structure asymmetry will contract, oxidize and fail causing an absolute stop of its' phase energy M/M activity, along with other unwanted cancerous material existing within regions of human body tissue and organelles.

Heterolactic Acid Fermentation, is common chemical compound structure, that will help provide assistance to the human immune defense system network in fighting against bacteria, pathogens, viral infections and other unwanted viruses in the immune system. Heterolactic acid fermentation is unique, it doesn't produce a gas as a bi-product. The proper individual pH must be calculated, providing the proper acidity level dosage per viral infected individual. Baking powder sulfate plugs in for activation at room temperature. The common chemical compound will take effect simultaneously cleansing the circulatory, lymphatics and body tissue of unwanted material.

AIDS cells consequence, post common chemical compound injection explanation is; AIDS cells and nearly all viral infected cells will become deleted from the infected human immune defense system network. The immune defense system network will reset to nearly normal parameters, deleting AIDS cells and possibly all pathogens and other viral infections from within the body's immune network. The proper pH levels will be calculated by the variant and invariant mass or BMI-BMR levels. This will calculate the correct dosage necessary for each infected individual receiving the anti-viral injection. The injection is a significant step for mankind towards cleansing body tissue, blood circulatory, lymphatics and organelles of unwanted cancerous material, while assisting at easing the pain within people of the world.

10. CONCLUSION; MELATONIN FLUID AND AIDS CELLS

Viral infections, pathogens and other cancerous unwanted material has plagued mankind for many millennia. Calculating mortality rates and merely explaining unwanted viral presence hasn’t resolved the epidemic known as AIDS, nor the high transmission rates of the HIV virus. AIDS cells are perfect examples of ‘Human Autoimmune Disease’, a haywire effect that has a presence within a host’s cellular network, as its’ cells attacks cells within its’ own hosts’ network of cells. The ‘Observer Stage’ will complete the framework for a triangulation effect, linking an understanding for unlocking viral encoded messages within AIDS cell activity, has assisted cellular immune biology in finding a Cross Over concept for stopping / deleting phase energy structure activity within AIDS cells and unwanted cancerous material. Ancient hidden viral encoded messages have
been accessed, leading to a complex stream within the Viral Code Network of AIDS cells. For example; AIDS cells and other cells have divided and multiplied since the beginning of time. Quantum structure of a cell is an activation of interior organelles for phase energy M/M, it spins, turns and twists with the precision of a synchronized clock, this quantum activation occurs in all particles matter and molecules. AIDS cells are programmed for two apparent functions; ingesting the steady flow of melatonin fluid and reproduction. AIDS cells have evolved and reproduce seemingly without any signs of stability in sight. Stability is what’s needed for blood plasma cells to take a stance for fighting against unwanted materials with strategic efficiency. Blood plasma cells are a systematic fighting force programmed for a regional deletion or oxidation of unwanted material within the lymphatic network. Within body tissue and blood circulatory systems, it’s much more difficult for blood plasma cells to take an immune stance for fighting against unwanted material away from the lymph node capillary beds. Modern cellular science must now resolve the AIDS cell mystery, by utilizing a common chemical compound as an anti-virus. The common chemical compound will become a variant oxidizing agent for deletion / contraction of viruses and unwanted material within the human body. After administering the common chemical compound, a simultaneous absolute stop, oxidation, rust, bleb and oblate will occur to AIDS cells’ mitochondria organelle structure. This traversing common chemical compound is known as the ‘Observer’. The Observer common chemical compound formula; NaAl(SO₄)₂ + 3NaHCO₃ + C₂H₂O₁₁. This is a common chemical compound made of baking powder; 2 parts cream of tartar salt, 1 part baking soda, a BMI variant mass and BMR or invariant mass, calculated amounts of sodium aluminum sulfate for proper individual pH. The other common chemical compound is a carbohydrate; 2 parts glucose, cube sugar. Baking powder sulfate propagates CO₂ with an oxidation of unwanted virulent cell structure. It also has a Duality; melatonin fluid oxidizes when in contact with metal, melatonin’s a direct scavenger of OH, O₂ and NO, but it can’t activate with CO₂ within its’ interior structure, baking powder manufactures CO₂. The Observer will traverse within the body tissue and immune system network with messenger encoded RNA buffer solution that’s replicated within the hosts’ cell structure. Proper individual pH consistencies and principals of the Observer must be maintained for optimum efficiency. Observation explanation is; the ‘Observer’ will provide a normal healthy functioning cell structure within the body. After administering the common chemical compound, the ‘Observer’ will provide a normal healthy functioning cell structure within the hosts’ immune system network with messenger encoded RNA buffer solution that’s replicated within the hosts’ cell structure. Proper individual pH consistencies and principals of the Observer must be maintained for optimum efficiency. Observation explanation is; the ‘Observer’ will provide a normal healthy functioning cell structure within the body and immune system network with messenger encoded RNA buffer solution that’s replicated within the hosts’ cell structure. Proper individual pH consistencies and principals of the Observer must be maintained for optimum efficiency. Observation explanation is; the ‘Observer’ will provide a normal healthy functioning cell structure within the body tissue, circulatory and lymphatics. This is Book# 6.

11. CONSEQUENCES; MELATONIN FLUID AND AIDS CELLS

Consequences for an over dosage, of an individual taking the ‘Observer’ are; the individual must immediately ingest water orally as a neutral dilutant for the acidity level effect of baking powder sulfate compound, as the proper pH level of an individual’s BMI-BMR is re-established. Baking powder and glucose are dissolvable and will become solvent when mixed in a saline solution or water (H₂O). Mortality rates from a baking powder sulfate over dosage or an over-reaction will be calculated and explained within the scope of the ‘Observer’ trial research.

12. REFERENCES; MELATONIN FLUID AND AIDS CELLS


13. FIGURES; MELATONIN FLUID AND AIDS CELLS
RECURRENT ANTERIOR CRUCIATE LIGAMENT INJURY IN A FEMALE HIGH SCHOOL MULTI-SPORT ATHLETE: A CASE REPORT

Jonathan Ratliff and Yvette Bolen
Athens State University, USA

ABSTRACT

**Purpose:** The objective of this study is to present the case of a female high school multi-sport athlete with recurrent grade 3 Anterior Cruciate Ligament (ACL) sprains to her right knee requiring surgical repair and to study the possible causes of her condition. **Background:** A 17-year-old female multi-sport athlete suffered her third documented grade 3 ACL sprain (non-contact) in August 2008 while participating in volleyball practice. This athlete suffered her first injury in November 2008 (involving contact) during a basketball game. Following surgical intervention with 8 months of supervised rehabilitation she returned to full activity in a brace then suffered her second injury in January 2010 (non-contact) during a basketball practice while wearing the prescribed brace. Surgical intervention followed by 9 months of supervised rehabilitation was completed prior to return to full activity. **Differential Diagnosis:** Patellar dislocation/fracture, femoral, tibial, or fibular fracture, MCL tear, LCL tear, PCL tear, ACL tear, midsubstance ACL tear, meniscal tear. **Treatment:** The first surgical intervention involved the use of a hamstring autograft followed by 8 months of supervised rehabilitation under the direction of the physician with a physical therapist and certified athletic trainer. The second surgical intervention involved the use of an Achilles tendon allograft followed by 9 months of supervised rehabilitation under the direction of the physician with a physical therapist and certified athletic trainer. The course of action for surgical intervention of most recent injury has yet to be finalized. **Uniqueness:** Statistics show that in the United States that 1 in 3000 individuals sustain an ACL injury each year (Souryal, T.O., 2011). Female athletes have traditionally had a higher rate of occurrence than their male counterparts participating in the same sport and surgical reconstruction of the ACL has been shown to have long-term success rates. However, recurrent instability and graft failure has been reported in approximately 8 percent of patients (Wolf, R.S., Lemak, L.J., 2002). **Conclusions:** Injuries to the ACL are the most common injuries incurred among the athletic population. As sport participation increases, more documented cases of ACL tears in children and adolescents are becoming more prevalent (Abel, K., Chilutti, D., Goebel, J., Ganley, T., Wells, L., Winnell, J. and Campo, T., 2010). Graft failure following surgical intervention can result from technical failure, biological failure, traumatic failure, or arthrofibrosis. Obtaining a complete physical history is a key factor in determining the possible cause of graft failure and subsequently the correct treatment to be implemented to safely return the athlete to activity. **Keywords:** ACL, Q-Angle, Autograft, Allograft, Graft Failure, Recurrent Knee Injury, Female Athlete Knee Injury.

INTRODUCTION

The study of knee injuries with ligamentous involvement dates as far back as 1845 when Amédée Bonnet wrote a treatise that included three essential signs indicative of acute ACL rupture: “In patients who have not suffered a fracture, a snapping noise, haemarthrosis, and loss of function are characteristic of ligamentous injury in the knee” (Colombet, P., Allard, M., Bousquet, V., De Lavigne, C., Flurin, P.H., n.d). He based his findings on his own clinical experience as well as research on cadavers. Unfortunately, his work remained unknown due to the fact that it was not published in English. The first documented attempt at surgical reconstruction of the ACL was performed by F. Lange in 1903. His procedure involved the use of braided silk attached to the semitendinosus as a ligament substitute (Colombet, P., Allard, M., Bousquet, V., De Lavigne, C., Flurin, P.H., n.d). While his idea may have failed, it led to the development of other techniques.

ACL injuries are graded to report the severity of injury to the ligament. A grade 1 sprain involves the stretching of the ligament, a grade 2 sprain involves a partial tear of the ACL, and a grade 3 sprain is defined as a complete tear or rupture. Surgical intervention and rehabilitation protocols have come a long way to ensure the athlete the highest possible chance of a return to pre-injury status. Some studies have suggested ACL injuries are more likely to result when multi-planar, as opposed to single-planar, mechanisms are occurring. Quatman, Quatman-Yates, and Hewett (2010) suggest the causal factors related to an ACL injury’s initial event and the biomechanics involved remain “elusive”. Determining the cause for recurrent injury involves a thorough investigation of biomechanical factors, surgical intervention, and patient compliance. We present the case of a female multi-sport athlete who has suffered a total of three grade 3 ACL sprains to her right knee requiring surgical intervention and look into possible causes of her condition.
CASE REPORT

A 17-year-old female student athlete was evaluated on the volleyball court by a certified athletic trainer following a non-contact injury to her right knee. The athlete reported no pain post-injury and there were no visible signs of swelling or obvious deformity. Further evaluation noted no injury to Medial Collateral Ligament, Lateral Collateral Ligament, or Posterior Cruciate Ligament. The certified athletic trainer performed both Anterior Drawer and Lachman’s test for ACL integrity. Both tests yielded positive for grade 3 ACL sprain. The team physician was contacted and athlete was scheduled for an in office examination. Team physician evaluation resulted in the same conclusion and an MRI was scheduled which confirmed complete ACL rupture.

This athlete’s knee problems began in November 2008 as a 15-year-old freshman basketball player. During a basketball game the athlete collided with another player and fell to the floor with immediate pain and subsequent swelling. Certified athletic trainer, team physician, and MRI all concluded the injury as a grade 3 ACL sprain with meniscal involvement. Patient along with parent consent chose to have surgical reconstruction using a hamstring autograft. The surgery was performed and the athlete underwent 9 months of rehabilitation following ACL protocols under the guidance of team physician, physical therapist and certified athletic trainer. Athlete was then released to regular activity with the use of an ACL brace.

In January 2010 the athlete was practicing basketball and while performing a jump stop to shoot a lay-up felt her knee “give out” and stated she heard it “pop”. The certified athletic trainer was in attendance at this practice and witnessed the injury and also reported hearing a “pop”. Upon examination both the Anterior Drawer and Lachman’s test yielded a soft end point indicating possible ACL involvement. Referral was made to team physician and subsequent in office examination and MRI revealed a grade 3 ACL sprain. Patient along with parent consent chose to have surgical reconstruction using an Achilles tendon allograft. The surgery was performed and the athlete underwent 9 months of rehabilitation following ACL protocols under the guidance of team physician, physical therapist and certified athletic trainer. Athlete was once again released to regular activity with the use of an ACL brace.

The third and most recent injury occurred in August 2011 while athlete was participating in volleyball practice. The athlete was immediately evaluated by a certified athletic trainer. Once again both Anterior Drawer and Lachman’s test were positive for a possible grade 3 ACL sprain. Athlete was referred to team physician for further evaluation. An MRI was ordered and confirmed complete ACL rupture. Patient, parents, and team physician are currently discussing the course of action for this injury.

DISCUSSION

A study of fifty-six athletes who underwent anterior cruciate ligament reconstruction (ACLR) were observed for twelve months to determine if further injury occurred to the ACL. Thirteen of the subjects experienced a second ACL injury. These results indicated that athletes returning to participation in sport following ACLR are at an elevated risk of ACL injury – a reinjury or a contralateral injury (Paterno, M.V., Schmitt, L.C., Ford, K.R., Rauh, M. J., Myer, G.D., and Huang, B. (2010). It is important that the health care provider appropriately assess and manage an ACL injury because failure to recognize the severity of the injury can lead to elevated morbidity and poor functionality results (Abel, K., Chilutti, D., Goebel, J., Ganley, T., Wells, L., Winnell, J. & Campo, T. (2010).

The ACL is an intracapsular, extrasynovial ligament of the knee that attaches medially to the anterior intercondylar area of the tibia and to the posteromedial aspect of the lateral femoral condyle (Andrews, J.R., Harrelson, G.L., Wilk, K.E., 1998). The ACL, like all other ligaments, is composed of type I collagen and is also composed of two bundles, the anteromedial bundle and the posterolateral bundle (Souryal, T.O., 2011). The primary function of the ACL is to prevent anterior tibial translation on the femur. In addition to controlling anterior tibial translation, the ACL has several other functions that include the screw-home mechanism, control of varus and valgus stresses, and controlling hyperextension stresses (Andrews, J.R., Harrelson, G.L., Wilk, K.E., 1998).

While the ACL can suffer from avulsion injury resulting in a rupture of the ligament, the most common tear is a midsubstance tear (Souryal, T.O., 2011). It is estimated that approximately 70 percent of ACL injuries occur through non-contact mechanisms leaving 30 percent occurring from direct contact with a person or object (Foran, J., Grelsamer, R.P., Manner, P.A., 2009). It is often accepted that the mechanism of injury involves a deceleration force in combination with a pivoting or cutting motion resulting in anterior tibial translation with enough force to tear the fibers of the ACL. Often the patient will report hearing or feeling a “pop”. The resulting injury can be a grade I, II, or grade III ACL sprain. Research shows that women have a higher incidence of ACL injury versus men. Studies suggest that differences in conditioning, strength, neuromuscular control, Q-angle measurement, and estrogen levels can contribute to this phenomenon. ACL tears are not usually repaired using sutures to sew it back together, because repaired ACLs typically fail over time (Foran, J., Grelsamer, R.P., Manner, P.A., 2009).
mind, a substitute graft made of tendon is generally used. Some of the more commonly used tendons are the patellar tendon, Achilles tendon, and the semitendinosus. The exact course of action following injury is typically determined by physician and patient.

Of the possible causes for ACL reconstruction failure, technical failure is the most common. Femoral tunnel placement, tibial tunnel placement, synthetic grafts, or poorly selected autografts or allografts have all been suggested as possible explanations for technical failure (Wolf, R.S., Lemak, L.J., 2002). Biological failure, which involves infection or possible graft rejection during the healing process, can also be a possible explanation for reconstruction failure. The next possible explanation could be the result of traumatic failure during the recovery and rehabilitative phase or even after return to activity. Some of the reasons for traumatic failure could include patient non-compliance with post-operative restrictions, overly aggressive rehabilitation protocol, or returning to full activity too soon. Even with traumatic failure, technical error must always be considered as a possible underlying factor (Wolf, R.S., Lemak, L.J., 2002). The remaining possible causes for ACL reconstruction failure include associated ligamentous instability and arthrofibrosis. Associated ligamentous instability must be addressed at the time of ACL reconstruction to avoid graft failure (Wolf, R.S., Lemak, L.J., 2002). Arthrofibrosis involves the failure to regain preoperative range of motion. Possible causes for arthrofibrosis could include patient non-compliance with rehabilitation or technical error at time of surgery.

In all three incidents of injury, the athlete reported either hearing or feeling a “pop”. The first injury which occurred in November 2008 was surgically reconstructed using a hamstring autograft while the second injury in January 2010 was surgically reconstructed using an Achilles tendon allograft. A third option which was not selected for either of those surgeries is the patella tendon graft. While one of the main differences in grafts is the size of the graft, graft size is not a determinant of patient outcome. It is generally accepted that graft placement is the most important factor in determining overall success. While the patella tendon graft is considered the “gold standard” among surgeons, all grafts have advantages and disadvantages.

A combination of factors must be considered when taking a closer look at the possible causes of graft failure in this case. The first injury occurred with contact while the second and third were both non-contact injuries. Also, the first and second injuries occurred during participation in basketball while the third occurred during participation in volleyball. This athlete has also participated in field events as a member of the Track & Field team, but did not suffer injury during this sport. Another factor to consider is that both the second and third injuries were sustained while the athlete was wearing a prescribed protective knee brace. Research suggests that up to 95 percent of all failures are due to technical error as described earlier. This possibility must be considered due to the high incident of causation. Biological failure is not a viable option considering that prior to release from the first two surgeries, the integrity of the ACL had not been compromised and athlete was cleared medically. Traumatic failure seems to be just as much an option as technical failure due to the fact that the athlete was participating in a high risk sporting activity when re-injury occurred.

Additional factors leading to re-injury should also be considered as research suggests. These include Q-angle measurement, estrogen level, muscular strength, and level of conditioning. The Q-angle is formed from a line drawn from the anterior superior iliac spine to the center of the kneecap, and from the center of the kneecap to the tibial tubercle (Cluett, J., 2008). Normal Q-angle measurement range in females is 14 to 20 degrees. A higher Q-angle has often been considered as pre-disposing an athlete to a higher incidence of injury to the ACL, but studies on this theory are inconclusive. Studies on estrogen levels and the incidence of knee injuries in women have also provided conflicting conclusions. Some studies report that days 10-14 of the menstrual cycle result in increased levels of estrogen therefore increasing the chance of injury, while others report that there is no clear evidence linking estrogen levels and ACL injury. In regards to muscular strength and conditioning, experts say there are four ways to reduce the risk of ACL injury: Proper leg muscle strength training and core training, proper neuromuscular training, proper coaching on jumping and landing, and proper footwear and use of orthotics if necessary (Horwitz, S., 2011).

CONCLUSION AND SUGGESTIONS

In this case it is clear that a multidimensional approach needs to be taken to try and determine why this athlete has suffered multiple ACL injuries to her right knee. Documented patient compliance regarding rehabilitation and use of a protective knee brace can all but eliminate these as an explanation for re-injury. That leaves many of the other factors that have been discussed as possible explanations. If the patient chooses an ACLR that involves the use of a patellar tendon graft, her case could give us the opportunity to somewhat equally compare the use of a hamstring autograft, Achilles tendon allograft, and a patellar tendon autograft on a single patient. Recently published literature indicates higher failure rates (23% to 34.4%) with the use of allografts in young, active patients returning to high-demand sporting activities (Foran, J., Greisamer, R.P., Manner, P.A., 2009). Autograft failure rates are much lower with the patella tendon autograft having a slightly higher rate of success than the hamstring autograft. These failure/success rates are only part of the formula to determine which graft should be used.
The patient will need to have an honest conversation with the physician on what their return to play options are and what long term activities they plan to participate in outside of sports. Additional considerations should include level of instability without surgery and the risk of secondary knee damage.

REFERENCES


VIRTUAL WORLDS FOR LIMITED PROTOTYPING, TESTING, AND TRAINING OF HEALTH INFORMATION TECHNOLOGY SYSTEMS

Maurice Eugene Dawson Jr.
Alabama A&M University, USA

ABSTRACT
As the United States (US) continues to become a wired society then it is imperative that the majority of the industries within the countries follow suite. As the Department of Defense (DoD) has relied significantly on technology to fight a battle that has become more and more net centric over the years it is time for those industries such as health care to change. The health care industry in its current stage has been identified as technological inept to handle newly available tools such as social media, virtual technology, Open Source Software (OSS), mobile computing, and platforms such as Service Oriented Architecture (SOA). Thus to prepare this industry it is key to test all functionality of new applications that will provide ends users an easy method for accepting these new technological features.

Keywords: Virtual Worlds, Technology Innovation, Health Information Technology, Low Fidelity Prototyping.

INTRODUCTION
One of the quickest growing technologies enabling technologies to test usability and interaction is virtual worlds. Virtual worlds such as Second Life (SL) and Open Simulator (OpenSim) provide an opportunity for engineers, technicians, and scientists to create a limited prototype to collect data. This data collected can be utilized to gather key information needed to improve the usability and interaction of the tool that would be significantly impacted in the real world. SL hosts multiple medical centers which allow end users to explore, and experience functionality of new health systems. Imperial College Medical Science Centre has a virtual simulation which is displayed in Fig1. (a) which is hosted on an island that encompasses multiple buildings, conferences centers, and walk ways that provide a totaled immersed experience (Imperial College London, 2011).

![Figure 1: Simulation of Imperial College Medial Science Centre and Simulation design of hospital's health IT systems](image)

Even in military applications modeling utilizing SL or virtual worlds may become the training mechanism for the future (Dawson, 2011). As third world countries continue to expand military and national police forces for purposes of homeland security they will need an inexpensive tool to train. SL will allow these countries to train in a virtual environment to include allowing these countries to be trained by others without a need to travel.

REFERENCES
AN ANTHROPOMORPHIC PERSPECTIVE IN HOMOLOGY THEORY

Brett A. Sims
Borough of Manhattan Community College, USA

ABSTRACT

In this work we seek to mathematically describe philosophical kinship among people based on their use of a common set of principles with which to define “concepts” that are perceived. We use definitions and theorems found in homology theory to develop the notion of “sameness” among people. Definitions and propositions on the simplex, simplicial complex, map, and simplicial map are used to show that people that use the same set of “principles” to formulate definitions or a “way of understanding” are homotopic with one another, in the sense that any one person’s “way of understanding” can be “cultivated” (continuously transformed) into any other person’s “way”, along a given period of time. Further, we discuss the idea of a hierarchal system, for the class of “homotopic” people, in terms of rank where a person’s rank depends on the number of principles that they use to develop a “definition” or “understanding” of a thing. Also the notion of “contiguity” among people is developed based on the way they “manifest” philosophies.

Keywords: Simplicial Complex, Simplicial Map, Homotopy, Philosophy.
WALKING THE TALK: EMBEDDING SUSTAINABLE DEVELOPMENT INTO EVERY DAY PRACTICE

William Emanuel and James Hunter
Morgan State University, USA

ABSTRACT

The built environment of the future will hopefully be significantly different than the version being produced today. There is a movement where the study of the eco-systems can be used to model the Built Environment and Systems Engineering. This allows one to model a Built Environment that mimics and complements the eco-system, rather than disrupts nature. Beneath the technical effort to reshape the Built Environment lays the concept of sustainable development and sustainability. With the acknowledgment and articulation of human responsibility for destroying people’s health and the eco-system of today and for future generations, there emerges a field of ecological economics, which redefines and provides new meaning to cost and value.

The value and impact of people’s health should play a vital role when designing and reshaping the Built Environment. Different studies on reshaping the Built Environment helped prove that environmental interventions can be based on the recognition that people’s health is integrally connected to their physical and social environment. CDC has been making the connection between health and environment for many years, but as federal regulations regarding sustainability have become more stringent, specific strategies and goals needed to be outlined and reported to comply with requirements. The Office of Sustainability has pieces of sustainability across the Agency. Many people believe the one missing piece is CDC doesn’t have embedded sustainable practices at the Agency.

This study will show that stairwells represent an important opportunity for daily physical exercise. This can provide a way for embedding a sustainable lifestyle and practice into the lives of employees. This can occur at a low-cost to the employer and a convenient way to integrate physical activity into the lifestyles of employees. This will help justify why employers needs to send more money upfront, in the design stage on building stairwells. So money can be saved in the long run as it relates to the employees health. Having healthier employees in the long run may translate into better productivity on the job, lower insurance’s rates, decrease in sick leave and finally cost savings. The Utilization Rate Design Plan introduced here will demonstrate the increase usage of the stairwell using a control group. This stairwell building strategy can increase physical activity and thereby reduce or control chronic diseases which over the long term, will pay back the increased funding budgeted to projects like these.

Keywords: Sustainability, Built Environment, Utilization Rate, System Engineering, Sustainable Development.
IMPORTANCE OF EMERGING TECHNOLOGIES IN SOCIETY FOR FUTURING & INNOVATION

Imad Al Saeed
Colorado Technical University, USA

ABSTRACT
Emerging technologies have the ability to be a positive impact on our society and offers exciting new teaching options for teachers and new learning options for students. It can enhance the learning process and outcome by making many of difficult topics much easier to cover, minimize the learning time, eliminate the risk, and reduce the cost efficient. Universities need to be prepared to move quickly in response to technology changes. They should increasingly look at emerging technologies and use them for the higher order skills to offer flexible, more effective, low-cost educational environments to the students. In 2008, Halal discussed the entire span of technological innovation. One of these technological innovations is Star Travel. It could be very costly trip for discovering and collecting data for students to explore the planets. The emerging of the virtual worlds such as Second Life (SL) provides an opportunity to create a space simulation environment and eliminate the associated risks and costs. It is true that there are a number of benefits from adopting new technologies but there are also some forces that may support or impede the adoption of the emerging technologies such as technological, cultural, economic, and temporal which will be covered in further detail within this paper.

Keywords: Emerging Technologies, Virtual Worlds, Educational Environment, Innovation, Space Simulation.

INTRODUCTION
Over centuries, new technologies are emerged due to theoretical or commercial research and development. Emerging technologies are technical innovations which represent progressive developments within the fields of interest (Soares et al., 1997). In general, emerging technologies provide many of useful and powerful technological developments within different fields in many significant ways including but not limited to information technology, robotic, artificial intelligence, cognitive science, etc. (O'Reilly, 2008). The current and future emerging technologies have positive impact on our society and offered exciting new teaching options for teachers and new learning options for students. For example, virtual simulation reality as new leaning tool is already being tested in several universities’ classrooms such as Colorado Technical University, Colorado Spring, CO computer science and management classrooms. In 2011, Dawson argues that “Simulation-based training provides many benefits to education, commercial, and military industries, allowing trainees to test and hone their skills in a safe virtual environment” (Dawson, 2011). Trying out these different styles in leaning process will make facilitate learning, provide an easy way to collect data, and make group and class discussions much more interesting.

In 2008, Halal covered in his book “Technology’s Promise” the entire span of technological innovation. One of these technological innovations is Star Travel (Halal, 2008). Virtual worlds such as Second Life increased our innovation skills and offer as powerful tools to create a space simulation environment could represent the real world environment and eliminate the associated risks and costs to discover and study the planets. Second Life (SL) and Open Simulator (OpenSim) provide an opportunity to create innovation space educational simulations and allow students to become immersed in the learning process and help in convert them from passive to more active learners to become hand-on operators in more interactive environment. In other words, simulation environment could be designed using emerging virtual technology for educational purpose such as space education purposes. It may turn students to be active leaners by engaging them in an immersive virtual environment.

This research explores the important of emerging technologies for exploring new educational and innovative environments to visit, study, and collect data about the planets using SL. The goal of this research is to examine its impact on the students’ learning process.

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THE MULTI-FACILITY COMPETITIVE LOCATION-ALLOCATION PROBLEM WITH M/M/k QUEUE, BASED ON THE MAXIMUM CAPTURE PROBLEM WITH PRICE MODEL

Mojtaba Hasanpour, Iraj Mahdavi and Esmaile Khorram

1Mazandaran University of Science & Technology, Iran and 2Amirkabir University of Technology, Iran

ABSTRACT

Competitive location problem is one of the new approaches in the location problems. The objective of the competitive location problem is maximizing market share or maximizing profits. Indeed, all the competitive location models can be called maximum capture. The existing maximum capture with price model is used to locate the fixed number of the same facilities in a competitive environment in order to maximize customers capture, but it is not determined that each demand point is captured by which facility. So, it is not efficient for serving the customers with different arrival rates. In this paper, we consider a multi-facility competitive location-allocation problem with the presence of a competitor firm in a connected graph. Facilities serve customers with k servers according to M/M/k queue. There are some constraints for the maximum number of facilities, maximum number of servers in each facility and the total costs of offering some new facilities and serve them by servers. First, the mathematical model is presented based on the maximum capture with price model, then a heuristic method to solve it will be proposed.

Keywords: Competitive Location, Maximum Capture, Spatial Pricing, M/M/K Queue Model, Heuristic Method.

1. INTRODUCTION

Hotelling’s work (Hotelling, 1929) on two terms competing in a linear market set the foundations of what is today the burgeoning field of competitive location. An exhaustive review of the subject of competition on a line can be found in Eiselt and Laporte (Eiselt & Laporte, 1989). The generalization of the competitive environment to a network was addressed first by Hakimi (Hakimi, 1983). Another model that examines competition among retail stores in a spatial market was developed by ReVelle (ReVelle, 1986). The maximum capture problem (MAXCAP) has formed the foundation of a series of models (Farahani & Hekmatfar, 2009). ReVelle and Serra (ReVelle & Serra, 1991) extended the formulation to allow relocation of existing servers as well as the location of new servers. Price-location modeling has been studied in a non-competitive model by Hanjoul et al. (Hanjoul, Hansen, Peeters, & Thisses, 1990). They develop three incapacitated plant location models where different alternative spatial price policies are considered. Serra and ReVelle (Serra & Reveille, 1999) introduced the maximum capture problem with price model (PMAXCAP) which is a kind of location and design problem that contains the price of the product in its output, and presented a competitive price-location heuristic to solve the model.

Effective system design is fundamental to the competitiveness of service organizations such as retailers and distributors. One of the first location models to incorporate queuing effects was the larson’s hypercube model (Larson, 1974). Marinov et al. (Marinov, Rios, & Icaza, 2008) proposed a model for locating several multi-server facilities in a region where there is already a competitor operating, in such a way as to maximize market capture by the entering firm, when customers choose the facilities they patronize, by the travel time to the facility and the waiting time at the facility.

We address the problem that a firm A faces when it enters a market with at most p outlets or facilities, when there is already a competing firm B operating with q facilities in the same geographical area (represented as a network). The firm A wants to maximize its profits, assuming that its facilities serve customers with k servers according to M/M/k queue.

2. MODEL FORMULATION

We assume that the space is discrete and is defined by a connected graph. On each vertex of the graph there is a demand with a distinct size, the set of local markets that are located on the vertices of the graph. All the nodes in the network are candidates to the location of facilities, as well as nodes containing demand. The product sold in this industry is homogeneous and demand is totally inelastic. The consumer’s decision on patronizing a store is based on transportation costs and price. Consumers always go the facility with the lowest total price, regardless of its ownership. Customers’ patronize the most attracting facility with their full demand. The formulation of the model is as follows:

\[
\text{Max} \Pi = (p^A - v) \sum_{i \in I} \sum_{j \in J^A} a_{ij} x_{ij}^A - \sum_{j \in J^B} F s k_j^A + F c x_j^A
\]
Subject to:

\[ y_{ij}^A \leq x_{ij}^A \quad \forall i \in I, \forall j \in CA_i \]  
\[ \sum_{j \in J} y_{ij}^A \leq 1 \quad \forall i \in I \]  
\[ k_j^A \geq \lambda_j \quad \forall j \in J \]  
\[ k_j^A \leq k_{\text{max}} x_j^A \quad \forall j \in J \]  
\[ \sum_{j \in J} F_s k_j^A + F_c x_j^A \leq C \]  
\[ \sum_{j \in J} x_j^A \leq p \]  
\[ CA_i = \{ \forall j \in J, P^A + t \cdot d_{ij} < P^B + t \cdot d_{ib} \} \]  
\[ x_j^A = \{0,1\} \quad \forall j \in J \]  
\[ y_{ij}^A = \{0,1\} \quad \forall i \in I, \forall j \in J \]  
\[ k_j^A \text{ integer} \quad \forall j \in J \]  

Where:

- \( i, I \): index and set of demand nodes
- \( j, J \): index and set of potential locations for firm A’s facilities
- \( J_B \): set of actual locations of the facilities of firm B
- \( CA_i \): capture area of node \( i \)
- \( P^B \): the mill price to B’s customers irrespective of this location
- \( v \): production cost per unit of firm A’s product
- \( t \): traveling cost per distance unit
- \( a_i \): demand at node \( i \)
- \( d_{ij} \): the network (shortest) distance between demand nodes \( i \) and a facility in \( j \)
- \( b_i^B \): the closest firm B’s facility to node \( i \)
- \( \lambda_j \): the arrival rate to facility \( j \)
- \( \mu \): the service rate of each server
- \( k_{\text{max}} \): the maximum number of servers at each facility
- \( F_s \): cost of putting a server in each facility
- \( F_c \): opening cost of a facility
- \( C \): the maximum costs of offering some new facilities and serve them by servers
- \( p \): the maximum number of facilities to locate by firm A
- \( P^A \): the mill price to A’s customers irrespective of this location (Continuous decision Variable)
- \( k_j^A \): the number of servers at each facility of firm A (Integer Variable)
- \( x_j^A = 1 \), if firm A locate a facility at node \( j \); 0, otherwise
- \( y_{ij}^A = 1 \), if firm A captures demand node \( i \) by facility \( j \); 0, otherwise

The objective function is nonlinear, since variable \( P^A \) and \( y_{ij}^A \) are unknown. So, first we find an optimal value for \( P^A \) by a heuristic method. Then we can solve the resulted integer linear problem using optimization software, such as Lingo 9.0.

3. CONCLUSION

The PMAXCAP model is used to locate the fixed number of same facilities in a competitive environment in order to maximize customers capture, but it is not determined that each demand point is captured by which facility. So, it is not efficient for serving the customers with different arrival rates. We proposed a new model based on PMAXCAP, assuming that facilities serve
customers with $k$ servers according to $M/M/k$ queue. The number of servers at each facility ($k$) is variable, and determined by customer's arrival rates and service rate of servers.

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LEVERAGING VIRTUAL WORLDS FOR EVENT PLANNING

Daniel Sampson and Maurice Eugene Dawson Jr.
Alabama A&M University, USA

ABSTRACT

In today’s ever increasing technology focused society it is a constant struggle to find the newest, most innovative way to reach the consumer and be not only effective but efficient. The field of event planning has grown exponentially in terms of innovative planning and creative ideas but has a lot to be desired in the area of developing new and interesting ways of approaching the incredibly creative world of event planning. As event planners are seeking more than the traditional tools to increase their market share, virtual worlds could provide the needed leverage to be successful. Virtual worlds provide the potential client a representation of how an event could potentially look, sound, and feel like. With tools such as Second Life (SL) and Open Simulator (OpenSim) the planner and client have the ability to review the logistics of a floor plan, where the coordinator proposes to set up the tables, stage, lounge area, etc. The planner has the ability to perform a virtual walkthrough with the potential client to obtain an overview of what the event may look like, how the music may sound, review the food layout, and to include viewing details on seating. The utilization of these virtual tools could result in a more effective way for the client to preview their event and provide a more accurate view of what the planner envisions for the occasion. Time would be another improvement to virtualizing event planning as users would be able to see the venue actually having to travel to a site visit. Planners and clients would be able to make near real time changes to the event. By enhancing effectiveness, speed and overall appeal, these enhancements would add to the effectiveness of the event planning industry and change the way that things are done in a planner’s / client’s day to day activities.

Keywords: Virtual Worlds, Application of Theory, Marketing, Event Planning

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EMERGING NEED FOR CYBER SECURITY IN SUB-SAHARAN AFRICA

Augustine Dike and Maurice Eugene Dawson Jr.
Alabama A&M University, USA

ABSTRACT

As Sub-Saharan African continue to do more business with the Chinese it is essential that the technology received is secured. This is important as many African countries have continued to increase the numbers of mobile devices, and internet usage over the last decade. As many western countries such as the United States of America (U.S.A.) have encountered issues with The Peoples Republic of China (PRC) such as reported incidents of applications that provide data back to PRC embedded in hardware manufactured in China. Sub-Saharan Africa needs to be sure that the products received undergo a rigorous test as the possibility for sensitive data to be leaked is a reality. As China supplies this area of Africa with technology, Africans needs to be able to understand the Information Assurance (IA) posture of received products. To prepare Africans to be able to do this would mean a need for an African cyber command which trains military servicemen on IA and cyber warfare. As certain African countries have above average crime as identified by the Organisation for Economic Co-operation and Development (OCED) a secure IA posture would also ensure that cyber criminals within countries encounter technical roadblocks when attempting to steal sensitive information from individuals. As Sub-Saharan African countries move toward into the digital age it is essential there is an awareness that fosters IA.

Keywords: Cyber Security, Sub-Saharan Africa, Technology, Cyber Terrorism, Cyber Crime

REFERENCES

SECTION 3

EDUCATION, SOCIAL & ADMINISTRATION

Ethics, Academic Integrity, and New Technology
John Mankelewicz, Robert Kitahara and Frederick Westfall ................................................................. 252
A Culture for Success
Carolyn Russell, Isabelle Warren, Charlotte Minnick and Yvette Richardson ........................................... 263
Process Consulting and Intervention Case Study at Collin County Community College
Negar Sohaee ................................................................................................................................................. 276
Graphical Representations for Introductory Statistics Education
Lin Ge ........................................................................................................................................................... 289
Creativity’s Role in the Success of College of Business Students: An Empirical Study
Doreen Sams, Michael Hersh, Shannon O’Keefe, Emily Scarboro, Zachary Tuman and Lauren White ........ 299
An Analysis of the Corporate Assessment of Marketable Skills in the Computer Information Systems Continuum
Donald Caputo
“Involves Me and I Will Learn”
Reza Varjavand ...................................................................................................................................... 305
Academic Engagement Ratings and Instructional Preferences: Comparing Behavioral, Cognitive, and Emotional Engagement among Three School-Age Student Cohorts
Tonya Conner ........................................................................................................................................ 318
Working With Minority Parents and Their Children With Disabilities: Are Parents Satisfied?
Lawrence K. Ametepeee, Beatrice Adara, Susan Abu and Garcia Farquharson ........................................ 329
The Global Imperative: Preparing This Generation for an Interconnected World
Rodney Davis .............................................................................................................................................. 334
The Future of Doctoral Education for Educational Administrators in Leadership and Critical Thinking
Darrel Norman Burrell, Emad Rahim, Khuram Hussain, Maurice Dawson, Jr. and Allynia Finch ............ 343
Reducing Juvenile Delinquency
Sloan T. Letman III, Alison Duggins, Janell Bryant, Shirley Chuo and Jack Aschkenazi ......................... 349
Co Relationship between Commercial Bail Bond Industry and Tennessee Jail Populations
Chiyere Ogbonna McGruder, Eric Martin and John A. Taylor II ................................................................ 353
A Comparison of Special Education Laws in Ghana and the United States
Samad M. Dimbie ..................................................................................................................................... 370
Accounting Education: A Review of Changing Nature
Simone Watson ........................................................................................................................................ 398
Effective Multidisciplinary Active Learning Techniques for Freshmen Polytechnic Students
Adeel Khalid, Bernice Nuhfer-Halten, Jennifer Vandenbusche, Donna Colebeck, Mir Atigullah, Sonia Toson and Craig A. Chin ................................................................................................................. 399
Revisiting Brown versus Board of Education: 57 Years Later
Chiyere Ogbonna McGruder ...................................................................................................................... 405
The Use of Football Metaphors among Ghanaian Tertiary Students Before and After Examination
Eric Opoku Mensah .................................................................................................................................. 395
Seniors for Society
Carol Shepherd ...................................................................................................................................... 396
School Time Programs: A Review of California’s Out of School Time Program Standards
Darrel Norman Burrell ............................................................................................................................. 393
An Interdisciplinary Analysis of the Book, Black Greek-Letter Organizations 20: New Directions in the Study of African American Fraternities and Sororities
Darrel Norman Burrell ............................................................................................................................. 399
The Need for Technology in the School Physical Education Setting
Wendy Cowan and Yvette Bolen ............................................................................................................... 410
Determining Equality for California Out of School Time Programs: A Review of California’s Out of School Time Program Standards
Carl B. Featherston III .............................................................................................................................. 412
Assess or Perish: Fulfilling Learning Outcomes Assessment in Higher Education, a Case Study of Direct Measures of Assessment
Kingsley O. Harbor .................................................................................................................................. 415
Sustainable Leadership Skills Acquired by Cross Cultural Education
Dustin Bessette ........................................................................................................................................ 416
Florida Superintendents Perceptions of Online Teacher Education Courses and Programs
Neil T. Faulk and Veronikha Caceres Faulk .............................................................................................. 417
Middle School Infractions Decrease with the Implementation of an Aggressive Anti-Bullying Initiative – P.R.E.S.S.
Jackie Hester, Yvette Bolen, Bruce Thomas, Beth McCulloch Vinaon and Ben Heatherly ......................... 418
Using Virtual Worlds to Teach Event Planning
Maurice Eugene Dawson Jr., Darrell Norman Burrell and Daniel Sampson ........................................... 421
Voyeurism in Jamaica: Performance Gender & Control
Karen Carpenter ........................................................................................................................................ 423
Organizational Change and Prosecutorial Misconduct
Wesley E. Phillips Jr. ................................................................................................................................. 424
Emerging Technologies as a Degree Option
Imad Al Saeed ........................................................................................................................................ 425
ETHICS, ACADEMIC INTEGRITY, AND NEW TECHNOLOGY

John Mankelwicz, Robert Kitahara and Frederick Westfall
Troy University, USA

ABSTRACT
To prevent and police academic dishonesty, schools have increasingly turned to modern technologies. The outcomes have been at best mixed, as current social, technological, and legal trends may have sheltered and favored the cheaters. This paper examines academic dishonesty and the tools, practices and strategies to mitigate the problem from a formal ethical perspective, with special attention to more currently prominent technologies. However, technologies do not address the many underlying pressures, skill factors, and value traits driving students to cheat. Hybrid approaches, integrating technology into the development of personal virtues and ethical culture at schools may prove more potent (Kitahara, et. al., 2011).

Keywords: Academic Integrity, Technology, Biometrics, Electronic Monitoring, Ethics

INTRODUCTION
Both the academic literature and the popular press are replete with reports concerning the growing problem of academic dishonesty across the globe. This parallels the attention to dramatic cases of cheating in nearly every facet of today's society: family, business, sports, entertainment, politics, etc. Students believe that cheating is more prevalent and accepted today, and is present in every facet of life. For example, results from the 29th Who's Who Among American High School Students Poll taken in 1998 indicate that; 80% of the country's best students cheated to get to the top of their class, more than half the students surveyed said that they do not think cheating is a big deal, 40% cheated on a quiz or a test; 67% copied someone else's homework, and 95% of cheaters say they were not caught. Ercegovac and Richardson (2004) found that 58.3 percent of high school students let someone else copy their work in 1969 and 97.5 percent did so in 1989. Over the same time period the percentage of students who report ever using a cheat sheet doubled from 34 to 68 percent. They reported that at Virginia Polytechnic Institute various forms of cheating have more than tripled from 80 in 1995 to 280 in 1997. These results imply that educators must assume a much more proactive and attentive role in order to preserve the academic integrity of their courses and programs. The literature also suggests that academic dishonesty may be growing at disturbing rates worldwide (McCabe, et. al., 2001a; Eckstein, 2003).

In response to assaults on academic integrity, institutions are searching for the best policies, procedures and tools to minimize the problem (Academy of Management Panel, 2009). Olt (2002) classifies the approaches to combating academic dishonesty for online courses into three categories of policing, prevention, and virtue. Policing seeks to catch and punish cheaters. Prevention seeks to reduce both the pressure to cheat and the opportunities to do so. A virtues approach, the slowest but probably the most effective, builds a culture for students so that they do not want to cheat. This classification structure provides a convenient and concise way to discuss potential approaches to ensuring academic integrity.

Increasingly, schools have turned to technology. The methods commonly employed include; electronic and procedural mechanisms for controlling the classroom/exam-room environment, software aids for detecting plagiarism, biometric systems for student identification, and statistical methods for analyzing unusual patterns in student performance compared to class or historical norms. However, even when schools have employed advanced technology, most solutions to date have involved straightforward policing methods for detection and punishment, as well as preventive security measures.

It seems clear that the nature of cheating is changing. As data storage, access, distribution and communication technologies have advanced, so too has the sophistication of the methods by which offending students practice their deceptions (Conradson & Hernandez-Ramos 2004, Argentsinger, 2003). Collaborative environments like team projects and the Internet are making the distinction between honest and dishonest behavior much more fuzzy.

Issues of academic dishonesty in general or technology do not exist in a vacuum, but are influenced by a broad cultural context. This paper will first discuss this context. It will then describe the issue of academic dishonesty, including factors that drive students to cheat. A formal ethical analysis will treat the actions of the academic offender, the educational institution, and society. It will then consider in detail the ethical issues surrounding widely used policing/prevention technologies. Focus will be first upon the consequences of these actions for specific types of stakeholders and then upon the patterns of Moral Intensity (Jones, 1991) surrounding the actions and consequences.
SOCIETAL CONTEXT

The societal context provides both concrete elements and events and the intellectual assumptions and outlooks within which issues like academic dishonesty and preventive technologies are considered. In the developed societies, this context is one of rapid change and increasing demand for skills and education. As a society, the US presents a particularly complex case. A nation of immigrants with still increasing cultural diversity, it affords an unusual variety of outlooks on life, ethics, education, and even technology. However, the US has a long history of valuing individual effort and allowing great social mobility. Educational attainment is not only a driver of wealth, but also the increased social status derived from wealth increases desire for both cultural amenities and formal educational credentials. There are new personal aspirations and social demands. Patterns of explanation and attribution and become immensely complicated. Causal textures, if they have any objective meanings, may be bidirectional and across levels of social organization.

Family expectations, consumerism, a general belief in both individual enterprise and now globalized capitalism are among many factors producing on the contemporary student a tremendous pressure to succeed, perhaps at any cost. Parents, schools, and society in general send mixed messages. It becomes unclear whether the offense is dishonesty or just getting caught. At the same time, there appears to be more tolerance of cheating. Constant pressure and delayed gratification have their impacts. Yes, they can indeed strengthen character, especially patience and hope. At the same time, they can produce a certain sense of unreality, giving life a certain dreamy or even game-like quality as an unending series of real time moves - perhaps like a video game. Stressed students often complain that coursework is a guessing game, or mind reading. They may not be so far off base.

Why is education like a strategic game for many students? It is because the outcome for a player is dependent not only on that player's actions but on those of other players. It may also be partly dependent on unforeseen, even random factors, or on luck. In the context of academic dishonesty, the analogy of poker seems especially suitable. First, there are real stakes: present or future monies or other amenities. Second, a very good single player beats most single cheaters, just as diligent and bright students exceed those who depend on cheating. However, collusive cheating is much more effective. Collusive cheating involving the dealer is deadly, and may be almost impossible to detect; this would be analogous to involvement of an academic employee as an accomplice. Also, in poker bluffing is not considered cheating; it is part of the game. Viewing education as poker is a problem, with social consequences. Not quite so obvious, however, is that the destructiveness is made worse because most student offenders (and many school officials) are bad players. There is an appropriate old poker adage: "a fool bluffs on anything, a sucker calls on anything." Some cheaters try to bluff an exam, bluff when confronted, and actually "call" by commencing a risky legal proceeding. Some of course survive because institutional authorities back down.

Attitudes toward technology may be as diverse as those toward ethics. However, for the most part, the current generation of students is savvy in using information technology and the new consumer technologies. They have used them as learning aids. They have utilized and helped drive three of the most important trends in personal tech: wireless, miniaturization, and convergence. Indeed, these tech "toys" in general (not just video games) have also been a source of comfort – momentary relief from the intense pressures for performance while growing up in a confusing world. It is not hard to understand that students would use them to alleviate perceived academic dangers. Consider a smart phone, with integrated zoom digital camera, voice recorder, and Bluetooth – easily concealed and paired with micro ear buds. It would a powerful tool, opening opportunities for academic cheating; it would greatly facilitate communication – especially asynchronous communication - with confederates. Instructors and institutions may employ equally robust counter technologies. Educational technology as well as consumer technology is in rapid change, and many tools for mitigation of cheating techs are still relatively new technologies, for which implementation is the technology (Weick, 1995). Hence, analysis must focus on the impacts upon the new technology as well as possible early impacts from it; causal attributions may validly be bidirectional. The term "new" is best understood as relative to the user. Offending students may be more savvy in some ways than the instructors or officials monitoring them, they may in fact be shaping and creating the real new technology, the one forming in practice.

ACADEMIC DISHONESTY

Research on identifying causal factors (personal, social, demographic, and institutional) continues but thus far has produced mixed and sometimes conflicting results. Dowd (1992) concluded from his review of the literature and from surveys taken at the Lincoln Land Community College (LLC) in Springfield Illinois that students feel stress in the academic environment and that stress may cause them to act improperly. Dominant influences were peer pressure and improper management of the classroom/examination environment, e.g. close proximity to other test takers and large class sizes. Students reporting poor study conditions, such as those that limited their study time, were more likely to cheat. McCabe and Trevino (1997) found that "peer-related contextual factors" had the most influence on whether a student would commit an act of academic dishonesty.
The research on gender as a discriminator for cheating has yielded mixed results and may necessitate investigation of secondary gender-related factors (Crown & Spiller, 1998; McCabe, et. al., 2006; Ruegger & King, 1992). Being male and/or younger than 24 years of age were characteristics associated with greater involvement in academic misconduct (Ercegovac, 2004). On the other hand biological age, social class, and work status had no effect in the study by Pino and Smith (2003). Interestingly, those authors found that students who watched television and engaged in student clubs or groups were more likely to cheat, dramatically illustrating societal and technological influences on student behavior.

Whatever the influencing variables, most research suggests that cheaters are generally less mature, less reactive to observed cheating, less deterred by social stigma and guilt; less personally invested in their education, and more likely to be receiving scholarships yet performing poorly (Diekhoffett, et. al., 1996). Not surprisingly cheaters tend to shun accountability for their actions and blame their parents and teachers for widespread cheating, citing increased pressure on them to perform well (Greene & Saxe, 1992). Students are likewise more apt to blame their dishonest or unethical patterns to external influences and rationalizations for which they are cannot be held accountable; in this they follow the “fundamental attribution error” (Kelley, 1967), attributing their own failings to adversity, while attributing the failings of others to character flaws. Worse yet, society as a whole has become increasingly more tolerant and even accepting of the practice of cheating, often citing the need to survive in today’s competitive environment as justification for that shift in attitude (Slobogin, 2002; Vos Savant, 2006). They are more apt to threaten lawsuits with the belief that the university will ultimately back down. Clearly these factors imply that it will require more thought, time and energy to maintain academic integrity in today’s academic environment.

The literature is largely consistent on one aspect as reiterated in investigations by Hardy-Cox (2003) that cheating is not simply a student issue but is shared by the institution and community/society. Dowd (1992) concluded that to encourage academic integrity the academic institution must establish itself as a role model for proper behavior, and faculty and institutions must educate students on why not to cheat and demand no less. Additionally, policies empower both instructors and students and consequently crafting and enforcing them must be a collaborative effort including administration and institutional leadership. Likewise, environmental influences on dishonest behavior must be minimized, integrity must be stressed, and administration’s continuous support is essential. Several studies indicate universities that have implemented a student honor code have experienced lower rates of cheating among their students (McCabe, 2005; McCabe, et. al., 1993). Some institutions adopt hybrid approaches and strategies with significant technology-based tools as key policing and detection elements (Kitahara and Westfall, 2007), while starting the long-term tasks of building ethical academic culture. In a more proactive and integrity-building manner, many have adopted honor code based systems with participation and commitment by students, instructors and administration in the development and implementation of strong, formally-derived academic standards of conduct and honor codes with the full realization that these efforts to build a culture of honesty will likely require a good deal of time (Kitahara and Westfall, 2008).

ETHICAL ANALYSIS

Ethics apparently evolved in response to two shortages: that of physical goods and amenities and also of human sympathy for others. Lacking such sympathies, people began to harm each other, intentionally or not. In response, society developed norms, mores, and formal ethical systems to create clear expectations and make behaviors more predictable. Ethics deals with values, obligations, and the relationships between them. It is productive to begin ethical analysis – and policy considerations – with a thoughtful rather than merely moralistic tone. First, issues of academic dishonesty are very complex, demanding sober rumination. Also, these are not pure ethical issues for either the offender or the educational institution; rather, they are actually management issues, combining both practical matters of fact with premises of value (Simon, 1945). An individual student is managing her or his efforts, time, and attention within a personal goal structure and set of constraints, just as an educational institution is managing its resources and processes. The very nature of the issue suggests Utilitarian ethics as the immediate, dominant, relevant framework. Other schools of thought - Virtue, Justice, Rights, or Deodontic approaches - do indeed have significant input, primarily to provide limits and constraints in specific areas of activity. The immediate concern is with achieving desirable consequences and avoiding undesirable ones. Moral rationality for institutions here lies mainly in maintaining consistent outcome preferences and incorporating them into goals.

However, there is no universal consensus on desirability or on exact standards for evaluating consequences, and many students seem to have a fuzzy understanding of many integrity issues, especially in regard to plagiarism. Without some clear consensus, it will be hard to develop a strong sense of Moral Intensity (Jones, 1991) – an important concept to be discussed shortly. Also, it is usually beyond human rationality to correctly predict all consequences or even their probabilities. Unless the situation becomes clouded with factors such as personal animosity, academic dishonesty basically involves deliberately false representations and potential denials, rather than deliberate harm to another or oneself. This gives the issues a special character. The negative consequences of academic dishonesty might include inappropriately appropriated gains to the cheater,
undeserved ill treatment to the honest student, the social consequences of later job related incompetence, the distrust among peers, parents, or others, the reputation damage to the academic institution, etc. All of these are immediately recognizable as consequences, or they can be easily rephrased as such. But if he perceives these stakeholders as competitors or as hostile, the student may ask how much of the truth he actually owes them, or how much concern he should have for them. In this sense the ethics of modern academe are very similar to that of business; concerns arise and are articulated as ethical when one party senses actual loss, potential loss, or lost opportunities. Further, much if not most academic dishonesty involves sins of omission rather than commission. Omissions of proper citation (plagiarism) are particularly common. There is also the equally significant but less visible negligent omission of appropriate mindfulness by the student, teacher, or administrator. Such negligent omissions are generally unintentional; this lowers the apparent moral culpability of the actor, raises the burden of proof, and discourages immediate imposition of a legalistic framework.

Why is Cheating Wrong?

From this starting point, consider why society (or at least of society) believes that cheating is wrong. Intuitively, the failure to convey good reasons to the students would seem to be a strong causal factor in the problem. Surely there is much diversity of opinion, but are the critics of academic dishonesty themselves unclear? Consider five explanations. These are essentially Utilitarian, but they need not depend on any specific school of ethical thought, and most people are somewhat familiar with them. They all appear to have validity for this discussion.

It is often asserted that common sense is the final practical test of an ethical position or action. Certainly the almost universal presence of Double Effect in our actions suggests this. Virtually every school of thought will somehow attempt to draw on it. The criticism here is that common sense is not only that hard to formally define, but it is not really very common. It is so often used as a purr word or growl word. In ordinary speaking

Academic dishonesty is an offense against truth. We may be taught to honor truth for many reasons, with or without belief in a Supreme Being. Some would argue that a preference for truth is hard wired within us, and that our well being, self esteem, and even our health, suffer as we depart from it. If this is so, then dishonesty is an offense against ourselves. However, this may be a little too philosophical for some.

Dishonesty would not pass the Disclosure Principle of ethics. This admonishes the actor to consider the reaction if his decisions and actions were known publically. This is related to the argument from truth, but adds the emotional and concrete reactions of others to the consequences. It is a powerful preventive principle. However, the cheater seems to believe activity can be kept secret.

Cheating breaks an implied – and sometimes explicit - social contract. This is true even when there is no possibility of legal enforcement. There may be psychological hurt to others. There may also be the loss of others’ respect. Clearly this is a more specific explanation, but even here there will be disagreements. Defensive offenders will say no contract existed.

Dishonesty violates the ethics of fair competition; this is often cited, e.g., Knight (1923). It is a major belief of US and many other cultures. But even in the US attitudes toward competition are diverse, and there is some disagreement about what those rules actually are, or should be.

Finally, academic dishonesty is actually a violation of professional ethics. The argument is that most students attend school for vocational gain, usually career growth as a professional. Further, this applies not just to doctors, lawyers, accountants, etc., but also to professional occupations that are unlicensed - even to self employment. A student who cheats in professional preparation will later be an incompetent and probably dishonest professional.

Moral Intensity

Three Utilitarian models are central to contemporary discussion of business ethics: the stakeholder approach, with many advocates (e.g., Mitchell, et. al., 1997), the Jones (1991) Issue Contingent Model, and Integrative Social Contracts Theory (Donaldson & Dunfee, 1994). Each has a contribution for our understanding of academic integrity, and the three work well together. Applying these models together yields some interesting insights. First, the superiority of building a culture of virtue rather than policing becomes very clear, as it would galvanize stakeholders and perhaps add new ones. By raising the consensus regarding academic integrity, ethical culture would also increase the probability of negative consequences to the perpetrator. There would be greater social disapproval as a consequence, and likely more immediate consequences, and possibly more upper level leader support.
The school or college must cope with these complexities, while retaining its effectiveness and adherence to the values and norms of its own organization culture. Thus more issues demanding ethical decisions arise on the side of the institution than on the side of the academic offender. This very difficulty is part of the explanation why faculty and administrators are so sluggish in acting. The discussion will treat first the Jones (1991) Issues Contingent Model and its importance for academic integrity. Next the issues will be discussed first with regard to the offender(s), and then from the vantage of the educational institution and society. The impacts upon and probable reactions of stakeholders are cardinal elements.

Ethical issues are not truly quantitative, but they are not without degrees of comparison. A very important tool for making such comparisons is Jones' (1991) Issue Contingent Model, which introduced the concept of Moral Intensity. It is useful in analysis of Double Effect and general stakeholder considerations. This model, shown as Figure 1, provides crude surrogates for both the degree to which values are generally violated in a situation as well as the sense of obligation of a focal actor to deliberate or to act. However, this model deals with issues and outcomes, and does not prescribe specific values or ethical principles. Having recognized an ethical problem, managers then pass through the stages of moral judgment, intentions to act, and finally actions (Rest, 1986). The greater the Moral Intensity (Jones, 1991) of an issue or problem, the more likely an individual will continue through the steps of this process, proceeding toward intentional moral behaviors. The moral intensity concept encompasses six measurable dimensions: magnitude of effect, probability of effect, concentration of effect on a specific group(s), social consensus on the issues, immediacy in time, and proximity in space. Many aspects of organizational context may act to facilitate behaviors or impede intentions from becoming behaviors (Jones, 1991). High magnitude of effect and strong social consensus regarding an issue greatly facilitate initial moral awareness in competitive business environments, providing that the discussion contains explicit moral language (Butterfield, et. al., 2000).

![Figure 1: Issue Contingent Model (Jones, 1991)](image)

Individuals’ philosophical differences also interact with the characteristics of the issue, as defined by moral intensity. "Utilitarians" become aware of fewer moral issues than "Formalists" (Reynolds, 2006), although everyone seems to attach moral significance to unjustified and clear-cut instances of physical or financial harm, i.e., to serious consequences. Reynold's utilitarians seem to have less moral awareness generally, and especially in issues like cheating, that may appear victimless. Other research appears to indicate that persons who rely heavily on numbers oriented paradigms may also slowly become less morally aware. For instance, partners in CPA firms generally showed lower moral reasoning than lower level employees (Ponemon, 1992); accountants and accounting students similarly scored lower than comparison groups from other fields (Lampe & Finn, 1992).

Integrative Social Contracts Theory naturally links ethics to law and social pressure. The theory would hold that cheating violates an implied or explicit “contract” at the local or micro level of students and schools, the level of contract administration and adjudication. Academic contracts derive their legitimacy and ultimate enforceability from adherence to “hypermorns” prescribed by some larger social entity(s) at the macro level, which might include society and the state and federal levels of government. Note that public bodies are important third party payers for education services. Industry also values the benefits from education. Stakeholders at the macro level have not, however, provided the constraint and detailed guidance needed to inhibit academic misconduct.
The Offender

In his classic *Lies and Truth*, the psychiatrist Marcel Eck (1971) emphasizes that a system of personal loyalties – to family, clan, faith, school, etc. - is developed in childhood well before the child can achieve any sophistication at discerning verisimilitude to reality. This appears to be true in all cultures. Almost all individuals develop these loyalties early, while many people may never develop keen faculties for practical or moral reasoning. Loyalty demands greater affection, greater truthfulness, and a greater sense of protectiveness toward the targets of devotion. It may also involve baser attitude towards people or things outside the circle. There is of course a paradoxical friction here: the bondings from early loyalties and dependencies often eventually lead to more “white lies” told to family members, close friends, etc. than to outsiders. At a higher level, information screens are often tighter within organizations than between them.

There are many ramifications to this pattern of human development, which affects not only action and speech, but also perception itself. The fundamental attribution error (Kelley, 1967) is very common. Similarly, negative or positive impacts to those in the circle of loyalty are more easily perceived than consequences to strangers; there is a psychological homologue to Jones’ (1991) dimension of physical proximity. In ethical consideration of their own activity, individuals simply may not see many of the perfectly valid stakeholders impacted by their actions. On the other hand, the actions of those very stakeholders impacted may have a high Moral Intensity for them.

One immediate ramification concerns application of the Principle of Double Effect. Since almost all serious or complex actions will have both good (desirable) and bad (undesirable) consequences, an accurate assessment and comparison of effects requires that they be anticipated before the action. When people, because of the pattern of their personal loyalties, omit stakeholders, they also omit many consequences from the comparison. This applies to good as well as bad consequences. Double Effect analysis becomes distorted, probably misleading, and possibly useless. In particular, the search for better alternative actions is severely truncated.

Not many educational or learning entities can command truly close personal loyalty of this kind: military academies, quality circles, and religious communities, perhaps a few others. Peer pressure on the other hand is present in many situations and is often very powerful. Indeed, in the academies, circles, and communities just mentioned, peer pressure is likely to be particularly high. Students situated there are also more likely to perceive their fellows as valid stakeholders in their actions. Perhaps even in these venues camaraderie (and peer pressure) can supersede moral awareness as the governing dynamic. However, there is also self-selection. The idea is ancient. Emphasizing that people are social as well as rational creatures, Aristotle emphasized that they universally tend toward association with those at a similar level of virtue (Ross, 1984) – moral and intellectual – whether in business or social life. The dishonest deal with the dishonest in perpetually shifting alliances, and honorable people congregate together in long lasting bonds of mutual profit and friendship. Each group is uncomfortable with the other; personal misrepresentation of one’s character is unsustainable over the long term. Since Aristotle’s virtues are to be developed and increased through practice, the honorable group has an apparent self-sustaining pattern.

Most students, and especially those who are dishonest, do not recognize the complex impacts that academic dishonesty has on a variety of stakeholders. Table 1 provides a preliminary summary listing of the major impacts. While some students may indeed be morally corrupt, most do not see the impacts because their mindset is fixed in what Diesing (1962) would have called “economic rationality.” Educational institutions, by contrast, are fixed on “technical rationality,” in which cheating is a very disruptive element in the process of assessing and controlling learning process. Later these organizations may be required to exercise a difficult “legal rationality,” in the wake of student offenses.
The Educational Institution and Society

Institutions of learning are cultural guardians who nurture and perpetuate both existing and new knowledge. Their clients may be considered to be students, their parents, the government, and society at large. Future employers of the students are also often said to be stakeholders. Schools and colleges are functioning, productive organizations as well. Although their products are hard to define, these institutions must operate on budgets, abide by the laws, and fulfill reporting requirements. In addition to these “crisp” requirements, they must fulfill innumerable “softer” tasks in maintaining their societal legitimacy. The tasks are many, multifaceted, hard, and usually ambiguous. Academic dishonesty disrupts these tasks. Institutions must be vocal, fair, and proactive in confronting it. Yet the actions a school will take will will themselves have significant impacts. Table 2 provides a preliminary summary listing of the major impacts upon the most important stakeholders.

<table>
<thead>
<tr>
<th>Constituency</th>
<th>Impacts of Discipline to Offender</th>
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<tbody>
<tr>
<td><strong>Primary:</strong></td>
<td></td>
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<tr>
<td>Owners</td>
<td>Educational Establishment</td>
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<tr>
<td>Employees</td>
<td>Faculty, etc.</td>
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<tr>
<td>Customers</td>
<td>Offenders</td>
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<tr>
<td>Creditors</td>
<td>All</td>
</tr>
<tr>
<td><strong>Secondary:</strong></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>Education improved</td>
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<tr>
<td>Government</td>
<td>Respect for law</td>
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</table>

Academic governing committees may employ measures beyond those dictated by purely academic concerns and policy violation as they resolve accusations of academic dishonesty. They must inquire if the University’s Academic Policies and Procedures - to which all incoming students must agree - are truly effective. They must determine the role for technology in resolving such cases. In particular, they must determine what level of evidence, i.e. burden of proof, is necessary? Applying courtroom standards to such cases marks a retreat from the historic independence of universities. It requires that colleges publish policies and procedures for dealing with cases of cheating to protect students’ rights to Fourteenth Amendment rights to
Plagiarism typically tops the list of the most common ways students cheat (Konnath, 2010); Turnitin and similar software systems have proven to be effective tools against plagiarism. These monitor the output: the finished paper or essay. Anti-plagiarism systems have been most effective to combat academic dishonesty and have survived privacy and legal challenges. They are less intrusive to the individual, often working seamlessly and invisibly; they are the most generally accepted technology. However, very the nature of the inputs implies a high task variability. Task analyzability is tricky, since ideas go beyond words, and the system can only compare words and character strings.
The above technologies do not directly influence stakeholders. While they may be formidable prevention/policing tools with some deterrent effect, they have little impact on the Jones (1991) Issue Contingent Model dimensions. For the most part they increase the probability and immediacy of detection, not necessarily the probability of consequences - except of course for the very raising of the issue at all as a form of consequence. Only web-cam based human proctoring provides a clear, real time source of testimonial evidence, so important in both academic and legal proceedings. Providing more immediate alarm systems from the other methods to a live proctor could of course, strengthen this facet. Also, the technologies could possibly be used to add a new category of consequences as a deterrent. By more judiciously providing signals to suspected perpetrators during the suspected offenses, the technologies might cause some undesired behaviors to cease. Technical information provided by these hardware/software solutions finds its way to academic administrators slowly. This information typically reaches societal decision makers level stakeholders as aggregated report data after passing through many hands. Thus support from this macro level will be slow.

**DISCUSSION**

It appears that standard policing and prevention strategies are largely ineffective in curbing the upward trend of cheating in academia (Academy of Management panel, 2009). Technological solutions are inherently limited and are likely to serve only as stopgap measures. Students inclined to cheat will always find a way to do so once the mitigation strategy is known and they gain experience with the measures implemented. Present reactionary approaches to mitigation of academic dishonesty seem to lack penalties/consequences with sufficient deterrent capability. The “cost exchange ratio”, i.e. relative costs to the student compared to the relative costs to the institution, is currently in students’ favor. Some institutions have turned to much more significant penalties such as permanent notations on “official” and publicly releasable transcripts but the effectiveness of this strategy on deterring would-be cheaters is yet to be determined. Many institutions place large emphasis on policing, detection and punishment approaches complemented by education of students on what constitutes cheating and emphasizing honesty and personal integrity. In the long term the prevailing wisdom is that the problem must be addressed and solved at the societal level, a responsibility shared by students, instructors, institutions and all other stakeholders in the education process. Their peers and the values of the local and general societies within which they function most dominantly influence students. Implementation of a virtues approach will require time to turn the tide on the present trend towards a “culture of cheating” – one that seems to be more tolerant of dishonest practices in almost every aspect of daily life. These latter issues require further investigation. It is appropriate to introduce and discuss the subject of ethics and ethical behavior.

McNamara (1997) concluded that the problem of ethics is extremely complex and most approaches to managing business (and personal) ethics have been far too simplistic and largely distracted by fundamental myths. Business ethics is now in fact a core discipline in 90% of most academic business curricula. The myth that the administration of ethics is straightforward must be replaced with the realization that ethics is extremely complex, driven by many conflicting value interests and is prone to large “areas of gray” when applying ethical principles. The myth that ethics is a superfluous concern since people want to “do good” must be replaced with a well-established formal code of ethics and corresponding codes of conduct - living documents that change with the needs of society and the organization. The myth that ethics cannot be managed must be replaced with adherence to established laws, regulations and rules that account for the interests of all stakeholders, i.e. “the common good.” Indeed establishing a culture of honesty within an organization requires commitment to established norms. Freeman, et. al. (2009) likewise dispute common myths about human behavior in organizations; human beings are always driven by self-interest, economic models (in business) can explain most behavior, and ethics is focused on altruistic concerns. The more appropriate perspective is that in our capitalist society all stakeholders cooperate to create value for each other, business is about purpose, money and profits will follow, and fundamentally people tell the truth, keep their promises, and act responsibly most of the time.

If students must be educated to even see the stakeholders harmed in academic dishonesty, schools must be particularly careful in systematic stakeholder analysis. Like any other kind of organization facing any strategic issue, the commitment must be shown conspicuously from the top. This begins by carefully identifying and then prioritizing the stakeholders by salience. Dealings toward all must meticulously meet the “moral minimum.” That is, actions must follow respected principles, conduct must consistently follow value preferences articulated in clear goals, and procedure and judgments must be visibly scrupulously impartial. As discussed above, these principles should come first from Utilitarian ethics, conditioned by Justice and Rights doctrine. Academic institutions must be careful to consider the Principle of Double Effect in their actions. Disciplines should match the severity of the “crime.” However, the requirements of fairness, reasonableness, and visible impartiality may require that the system sometimes be lenient, sadly allowing some offenders to slip through the cracks.
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A CULTURE FOR SUCCESS

Carolyn Russell¹, Isabelle Warren¹, Charlotte Minnick² and Yvette Richardson³
¹Troy University – Phenix, USA, ²Troy University – Troy, USA and ³Alabama Board of Education, USA

ABSTRACT

The Superintendent of a small school system in Alabama asked Troy University faculty to assist her in developing a series of workshops for her school system. The Superintendent introduced her vision for “A Culture for Success” by discussing John Kotter’s book The Iceberg Is Melting (2005) in which Kotter explains his Eight Step Method for guiding successful change. Troy University faculty planned and facilitated A Culture for Success workshops for the central office personnel and six participating schools. Included in the project were four elementary schools, one middle school, and one high school. The first workshop for the central office personnel was conducted in August during a day-long retreat and the remaining workshops were held in September and October at each of the schools. During each workshop the teachers and administrators had the opportunity to identify and discuss the factors that were barriers to the success of their schools. They also engaged in discussions to determine solutions to the identified problems and to create strategies that would foster A Culture for Success within their school. The participants, guided by two Troy University facilitators, selected one or two critical barriers to success that the school would work toward eliminating during the school year. The data collected during the workshops revealed interesting similarities and differences in the identified barriers (concerns, problems, and needs) as well as the variety of strategies proposed for eliminating the barriers to success among the participating schools and central office.

Keywords: Culture, Success, Collective, Horizontal, Transformative, Community.

DEFINITIONS

Culture: Culture is the attitudes, behaviors and practices that characterize the students, faculty, and administration in a school. Marilyn Katzenmeyer and Gayle Moller (2009) authors of Awakening the Sleeping Giant: Helping Teachers Develop as Leaders (3rd ed.), discuss school culture and include the following definition. “Culture, according to Peterson and Deal (1998), is ‘the underground stream of norms, values, beliefs, traditions, and rituals that has built up over time as people work together, solve problems, and confront challenges’ (p. 28).” One aspect of the school culture would be the attitude expressed by President Abraham Lincoln (Bartlett, 2002, p. 477:8) “I do the very best I know how—the very best I can; and I mean to keep on doing so until the end.”

Success: Success is the achievement of something the administration, faculty, and/or students planned, intended or attempted. According to Katzenmeyer and Moller (2009) “The context of the school is central to … success” (p. 83).

Collective: “1. Assembled or accumulated into a whole. 2. Of, relating to, typical of, or made by a number of individuals taken or acting as a group” (Webster’s II New College Dictionary, 1995, p. 220).

Horizontal: “2. Occupying or restricted to the same level in a hierarchy” (Webster’s II New College Dictionary, 1995, p. 533).

Transformative: “An act or instance of transforming or the state of being transformed” (Webster’s II New College Dictionary, 1995, p. 1170).

Community: “1. A group of people residing in the same locality and under the same government. 6. Common ownership or participation” (Webster’s II New College Dictionary, 1995, p. 1170).

OBJECTIVE

The essential challenge addressed by this project was how to empower a learning community to improved morale and success using the Eight Steps to Successful Change (Kotter, 1996, 2002, 2005, 2010).

BACKGROUND

Geography plays a role in controlling climate. High humidity and high temperatures dominate the climate of this region, the summer temperatures range between the mid 90’s to the low 100’s and the winter temperatures range between the mid 40’s to the low 60’s. The climate and geographical conditions triggered the ideal agricultural environment for growing cotton, pine trees, peaches, pecans, and warm weather vegetables. It also triggered the historical direction of this area.

The natural geographical features attracted settlers as unique as the landscape. The first people to inhabit this region were the Indians, then the Spanish, French, and English. The Indian tribe that occupied this area was the Creek (Kyle, 1986, p. 23). The
waves of white settlers and the signing of treaties that surrendered their land to the “white man” eventually eradicated the Creek Indians. Their final tragic encounter with the local white settlers was in the “Trail of Tears” (Kyle, 1986, p.13). The Spanish, French and English all had a hand in settling this area but the English established the final stronghold (Kyle, 1986).

The combination of climate, soil and water plus the lack of local agricultural laborers combined to facilitate the use of slaves to pick the abundant cotton crops that drove the textile economy. The slave population grew to between 38 and 50 percent of the total population in this area (Kyle, 1986, p.47). Because of the geographical “blessings,” the “cruse” of slavery became part of the social landscape and history. Boundaries and barriers of the past are colliding with the boundaries and barriers of the present to reshape the landscape and the lives of the inhabitants of this rural Alabama area.

Historically, boundaries and barriers between exploitation and economic prosperity reside in this area. Child labor in this and nearby communities was a part of the mill culture. Children were often referred to as “Dinner Toters” and were paid $.25 per week to carry lunches, sometimes as many as ten per day, to mill workers. Such tasks took longer than the usual one hour for lunch at regular schools, so these were children not getting an education” (Kyle, 1986, p. 156). The majority of the adult population in the counties surrounding Columbus, Georgia and Phenix City, Alabama worked in the mills. Their average workday was 11 hours and the workweek was six days.

Barriers of the present shape the lives of the inhabitants of this Alabama region. For example, the Alabama unemployment rate for February 2010 remained at 11.1 percent. “State Industrial Relations Director Tom Surtees announced that the unemployment rate was unchanged from January’s 11.1 percent, which is the highest jobless rate the state has experienced in 26 years. Unemployment in rural Wilcox County in southwest Alabama remained at 27 percent, one of the highest rates in the country. Counties with the next highest unemployment rates were Monroe at 21.4 percent and Conecuh at 20.3 percent” (Ledger-Enquirer, 2010, p. A 9). “Literacy rates have improved in all but one Alabama county since the early 1990s, but 15 of every 100 people in the state still reach adulthood without learning to read, new statistics show” (Ray, 2009, p. 3). Another barrier is the Alabama Public High School Dropout Rate which was 38.75 percent in 2006. The rate for the area under investigation was 51.34 percent which was the second highest dropout rate for the state (The Advisor, 2009, June, p. 3). Finally, the percentage of women giving birth who are unmarried is on the rise in Alabama. The rate for teens increased from 71 percent in 2000 to 76 percent in 2007, for women in their 20s it increased from 34 percent to 40 percent (The Advisor, 2009, May, p. 3).

INTRODUCTION

The vision for “A Culture for Success” was generated from conversations with the Superintendent of a small rural school system in Alabama. The vision for the county included creating A Culture for Success in the central office as well as in the schools. The development of the project began with a meeting with the superintendent and two Troy University faculty members. The three discussed ideas for motivating administrators and teachers to develop plans for school improvement that would lead to high teacher morale, improved academic achievement, and overall success for the system. As the conservation developed, the superintendent shared her vision of having each school in her system develop an individual culture for success plan. She did not want to dictate, mandate, nor manipulate the participants. Each school’s plan would be unique and would be developed independently of the others in order to meet the individual needs of each school. The development of the project included a series of training workshops designed to guide participants in the design of A Culture for Success which would be directed and carried out by the individual school’s faculty and staff. The Superintendent introduced the vision, Troy University facilitators assisted with putting the vision in motion, and then the participants implemented the success strategies and procedures. The objective was to motivate faculties to change their cultures, improve their performance, build organizational commitment, create focus and to have each group of participants determine precisely what would be required of them and what would lead to their success.

Purpose

One goal of the workshops was to assist the participants in determining the barriers to their success. A second goal was to assist in determining how to remove the barriers. The third objective was to prepare teachers to deal with the changes that would be required in order to implement new procedures and strategies. A fourth objective was to motivate the faculties to fully implement their plans. John Kotter (2002) has found that there is often a great deal of trepidation about change, and most schools and organizations have difficulty in helping the faculties and employees to understand it, not to mention to buy into it.
LITERATURE REVIEW

Introduction
Organizations whether business or schools are moved ahead or kept at bay by their leadership’s understanding or misunderstanding of organizational structures, dynamics, and the power of leadership. Every organization has leadership; the quality of the leadership determines the direction of the organization. The organization which established the project of A Culture for Success had exceptional leadership from the top position of superintendent. This review addresses organizational structures, change, change agent, personnel dynamics, and the art of leading.

Organizational Structures
One model of organizational structure was created by Noel M. Tichy and N. Cardwell. The authors discuss the model in The Cycle of Leadership: How Great Leaders Teach Their Companies to Win, which is based on the leader having a Teachable Point of View (TPOV) and moves towards Virtuous Teaching Cycle (VTC). Tichy and Cardwell explain that, “A TPOV is a cohesive set of ideas, values, and ways of energizing people that can be articulated and put into action” (p. 311). They go on to explain that a leader who uses the TPOV model must make it clear, compelling, concise, and consistent for the model to be effective (p. 334). The model is used to establish lines of order, “…cascade the ideas and the teaching throughout the organization. The scale shifts from the individual to the small team to the whole organization, but the basic elements of creating the teaching and learning cycle are the same” (Tichy and Cardwell, p. 138).

Change and Change Agent
Frances Hesselbein, Marshall Goldsmith, and Richard Beckhard (1997, p. 9) state in their book, The Organization of the Future, that “Any major change effort must begin by describing the journey’s destination.” They further explain that, “Major change programs must be top-down and vision driven, and they require broader participation in the design and implementation phase” (Hesselbein, et al., p. 11). Michael Fullan (2001b, p. 71), continues this strain of understanding change and change agent in his book, The New Meaning of Educational Change, by stating that ‘Effective approaches to managing change call for combining and balancing factors that do not apparently go together-simultaneous simplicity-complexity, looseness-tightness, strong leadership participation (or simultaneous bottom-up/top-downness) fidelity-adaptively, and evaluation-nonevaluation. More than anything else, effective strategies for improving require an understanding of the process, a way of thinking that cannot be captured in any list of steps or phases to be followed.” The successful implementation of change in any organizational structure is dependent on the leader as described by Michael Fullan (2001b, p. 1), “For better or for worse, change arouses emotions, and when emotions intensify, leadership is key.”

John Kotter is an award winning bestselling business author of more than fifteen books, numerous articles, and a noted expert in change. Through his more than twenty years of research at Harvard Business School and with corporations and government agencies around the world, Kotter has learned the critical success factors in any change effort. Kotter explains how organizations can use his Eight Step Change Process in a number of popular books including Corporate Culture and Performance (1993), Leading Change (1996), Our Iceberg Is Melting: Changing and Succeeding Under Any Conditions (2005), Succeeding In A Changing World (2007) and Transform Your Organization With John Kotter (2010). He reports that most leaders and managers are experts at their core business, but aren’t experts in change. Kotter maintains that for most organizations, change is difficult, painful, and costly. He has also observed that people, organizations, and school systems often do not see the need for change.

In Leading Change (1996, p. 3) Kotter writes that “To date, major change efforts have helped some organizations adapt significantly to shifting conditions, have improved the competitive standing of others, and have positioned a few for a better future.” Kotter’s Eight Step Process (2005, pp. 130 - 131) is outlined below.

Set The Stage
1. Increase Urgency – See the importance of and the need for change. Kotter (1996, p. 4) believes that “By far the biggest mistake people make when trying to change organizations is to plunge ahead without establishing a high enough sense of urgency in fellow managers and employees. This error is fatal because transformations always fail to achieve their objectives when complacency levels are high.”
2. Build the Guiding Team – The team must be powerful (in terms of formal titles, information, expertise, reputations and relationships), credible and have leadership skills and authority. “Major change is often said to be impossible unless the head of the organization is an active supporter” (Kotter, 1996, p. 6). Kotter maintains that successful transformations occur when a powerful coalition of leaders and others have a commitment to improved performance and they pull together as a team (Kotter, 1996, p. 6).
Decide What To Do
3. Get the Vision for Change Right – Determine how the future will be different and how to make it a reality. The most important element, according to Kotter (1996, p. 7) is a sensible vision that helps to “direct, align, and inspire actions on the part of large numbers of people.”

Make It Happen
4. Communicate for Buy-In – Assure that participants understand and accept the vision and the strategy.
5. Empower Action – Remove as many barriers as possible.
6. Create Short-Term Wins – Create visible successes right away.
7. Don’t Let Up – Be relentless with initiating changes until the vision is accomplished.

Make It Stick
8. Make Change Stick – Maintain the new behaviors in the new successful culture.

The Eight Step Method was developed after evaluating how hundreds of organizations guide successful change efforts. Kotter’s method has a proven record of success in a varied array of organizations. The Eight Step Process will allow schools and school systems to build their own plan to help change the culture of participating schools.

Personnel Dynamics
According to Noel Tichy and N. Cardwell (2004, p. x) “The successful companies and leaders will be those who understand that the greatest resource we have in the enterprise is people and that the human capital we are entrusted with has to be developed and turned into a more valuable resource.” Tichy and Cardwell (2004, p. 154) continue their discourse on personnel dynamics by quoting Jack Welch, “…people first, strategy second…”.

Kotter addresses the human element in the change process in his book The Heart of Change: Real-Life Stories of How People Change Their Organizations (2002). His findings from more than twenty years of research reveal that the central issue is never strategy, structure, culture, or systems. These elements are important but the core of the matter is changing the behavior of people. He explains that behavior change happens in successful organizational change by addressing people’s feelings. It is when leaders find ways to help others identify problems and solutions in ways that impact their emotions, that change efforts are successful. “Feelings then alter behavior sufficiently to overcome all the many barriers to sensible large-scale change” (Kotter, 2002, p. x).

The central challenge in all eight stages of the successful change process is changing people’s behavior and the need for significant shifts in what people do (Kotter, p. 2). “Both thinking and feeling are essential, and both are found in successful organizations, but the heart of change is in the emotions. The flow of see-feel-change is more powerful than that of any analysis-think-change” (Kotter, 2002, p. 2).

Art of Leading
Leading is an art form (Fullen, 2001b). According to Warren Bennis and Joan Goldsmith (1997, p. xv) in their book, Learning to Lead, “The leader not only must have direction, but must communicate it in such a way that ownership is created on every level and in every corner of the operation.” Michael Fullen (2001a, p. xi) recommends more directives to leaders in his book, Leading in a Culture of Change, he reports that “Schools can learn from how the best companies innovate and get results. At the most basic level, businesses and schools are similar in that the knowledge society, they both must become learning organizations or they will fail to survive. Thus, leaders in business and education face similar challenges – how to cultivate and sustain learning under conditions of complex, rapid change.” The exceptional leader has the hedgehog effect as explained by Jim Collins (2001, p. 91) in his book, Good to Great, “No the hedgehogs aren’t simpletons; they have a piercing insight that allows them to see through complexity and discern underlying patterns. Hedgehogs see what is essential, and ignore the rest.”

METHODOLOGY
The project, A Culture for Success, was divided into two parts. The first phase began with a workshop for the central office personnel. Phase two included workshops in each of the six participating schools. The workshops followed procedures developed by Harvard Business School Professor John Kotter which assist organizations with effectively dealing with change.
The Superintendent introduced Phase One of A Culture for Success during a one day retreat in August just before the school year started. Current research, articles, and books were presented and discussed as an overview of the vision for A Culture for Success. One of the books discussed was Our Iceberg Is Melting (2005), by John Kotter which included a fable about a colony of penguins living in the frozen Antarctic on an iceberg. One of the penguins, Fred, was different from most penguins in that he was unusually curious and observant. Fred became alarmed by the changes he observed in their iceberg. The information he gathered indicated that the colony would need to make a change if they were to continue to survive and prosper. The penguins made the necessary changes without realizing that they were implementing the Eight Step Process outlined by John Kotter. For many years Professor Kotter has studied change and has developed a step by step process that can guide organizations through the often difficult process of change. The Superintendent shared Kotter's Eight Step Process of Successful Change with the administrators. Following the introduction, the school system’s assistant superintendents, directors, and coordinators participated in the first A Culture for Success Workshop. This first workshop included an orientation for the entire group, small group sharing sessions, whole group sharing and the development of strategies, procedures, and changes needed for creating A Culture for Success for the school system. First, the facilitators encouraged participants to share ideas and to engage in discussions and brainstorming to identify barriers to success in the schools and in the system. Second, groups of five to eight administrators discussed conditions and situations that needed to be improved. Next, each small group had to reduce their list to one, two or three barriers to success. Then, each group recorded the top 1, 2, or 3 barriers on chart tablets. Next, the entire group met to discuss the issues listed on the chart pages. Before the meeting ended the whole group determined which of the items were the most critical. Finally, the entire group discussed the strategies and activities that would need to be developed and put in place in order to remove the barriers to success and thereby improve in the identified areas of weaknesses.

Phase Two began shortly after the central office retreat. Six principals asked to participate in A Culture for Success workshops with their faculties. Four of the schools were elementary, one was a middle school, and one was a high school. All of the workshops were scheduled during September and October. Hour long workshops were conducted at each school in the afternoon after the students were dismissed. The two Troy University workshop facilitators met with all of the teachers and administrators in the school. Refreshments such as fruit, nuts, cookies, and drinks were provided to promote good will and to encourage participation.

Each workshop began with an overview and introduction in which the vision was explained to everyone. It was critical that participants understand the mission of the project. The facilitators learned from each workshop and modified the meeting agendas and procedures in order to improve the sessions. The faculties of each school were divided into small groups and were asked to identify problems and barriers to the school’s success. They were to brainstorm and to discuss anything they believed would be required in order for their school to become more successful. Teachers met in two different small groups to provide more opportunities for discussion and sharing. They were grouped by grade levels, by subject matter, by teams, across grade levels, or by what seemed most appropriate for the school. The groups were asked to write their top three concerns (barriers to success) on large sheets of chart paper which were posted on the wall. The three chart tablet pages were labeled Priority #1, Priority #2, and Priority #3. After groups posted their concerns the participants came back together as one large group to discuss the items on the charts and to identify one or two issues to target for improvement in the coming year. The participants were asked to discuss and then select, as a whole group, the barriers to their success that were most important for them to remove. Next, the faculty discussed procedures, recommendations, solutions, plans, and suggestions for improving in the one or two identified areas. The faculty decided on the activities and procedures they would implement in order to create A Culture for Success.

The role of the Troy University leaders was strictly that of facilitator. The workshop leaders planned the organizational structure of the meetings but did not share their ideas or thoughts with the participants. The facilitators kept the groups organized and focused on the important issues. Participants had an opportunity to complete their mission without any influence or advice from the workshop leaders. It was important that each school develop and own a unique plan that would meet the needs of their school.
The schools were quite receptive and the faculties were friendly and enthusiastic. The positive and upbeat attitude of the attendees was remarkable since the workshops were conducted at the end of the school day. Everyone was cooperative, worked hard, and seemed to sincerely care about the outcome. The participants spoke of their commitment and their willingness to implement their plans.

The concerns or barriers to success expressed during each workshop reflected a broad range of issues and problems. The most striking difference was observed with the high school faculty. Many of their concerns were applicable to older students. Overall each workshop was unique.

A workshop report was written after the meetings and provided to each school. The chart tablets and the meeting notes were examined and summarized for each school. First, all information from the chart tablets and notes taken during the workshops were entered into an Excel spreadsheet. Next, a brief summary report was developed for the administration and faculty of each school. Copies of the reports were delivered to each school’s principal. Each teacher received a copy of the report which included everything that was discussed and decided during the workshop. The top concerns were identified. The procedures and recommendations for removing the barriers to success were listed. Specifically, the report presented all of the concerns for priorities one, two, and three. The top one or two barriers to success which were selected by the participants at each school were included in the summary report. The plans, strategies and procedures to improve in the most important areas were listed as well.
RESEARCH RESULTS

Results for each workshop were examined qualitatively and quantitatively. Summaries of the work completed at each workshop are presented below.

Priorities and Plans for Improvement for Five Schools

**Elementary School 1-L**

**Concerns**
- Student achievement
- Learning
- Motivation

**Plans for Improvement**
- Find opportunities for collaboration
- Improve math achievement

**Elementary School 2-O**

**Concerns**
- Student learning
- Motivation

**Plans for Improvement**
- Use homework passes
- Grade of 100 percent is rewarded with no homework
- Homework corrected to 100 percent will improve the grade
- Use “Caught Being ____________” cards and awards
- Encourage parents to help with homework
- Offer parent training and enrichment by grade level
- Have Parent Day to allow parents to shadow their child
- Develop a parent accountability plan
- Require parent attendance for certain functions
- Invite parents to “Lunch and Learn” by having lunch with their child and attending a workshop

**Elementary School 3-R**

**Concerns**
- Student achievement
- Teacher morale
- Developing positive attitudes

**Plans for Improvement**
- Collaboration
- Celebrations
- Build trust
- Praise one another
- Develop a positive classroom
- Develop personal positive attitudes
- Believe in ourselves
- Continue to learn and grow
- Remember our purpose
- Share ideas
- Talk to one another
High School 4-R

Concerns
- Parental involvement
- Effective planning and scheduling
- Teacher confidence

Plans for Improvement
- Contact parents
- New phone system
- More phone lines
- Parents pick up report cards
- Student events for PTA

Elementary School 5-MO

Concerns
- Discipline
- School pride

Plans for Improvement
- School uniforms
- Consistency with discipline
- School-wide discipline policy and procedures
- Collaboration among teachers
- Diverse recesses

ANALYSIS & DISCUSSION

Qualitative Analysis

The data were examined qualitatively. First, all data were entered into an Excel spreadsheet. A number of questions emerged during the initial analysis:

1. Were there similar concerns or barriers among schools?
2. Were some concerns unique?
3. Did the concerns fall into categories?
4. Were there common categories of concerns?
5. Was there one “most important” concern?

The analysis of the spreadsheet data revealed similarities among the items. The concerns could be grouped into categories of issues related to: teachers, students, the school, leadership, parents, and community. Next, the frequency with which the items occurred was determined. The percentage for each of the categories was also calculated. Finally, graphs were created to visually display the results.

Categories of Concerns or Barriers to Success

In examining the concerns by category the teacher related concerns ranked highest.

Table 1: Ranking of Concerns by Category

<table>
<thead>
<tr>
<th>Rank</th>
<th>Concern Category</th>
<th>Selection Percentage</th>
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<tbody>
<tr>
<td>1st</td>
<td>Teacher concerns</td>
<td>32%</td>
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<tr>
<td>2nd</td>
<td>Student concerns</td>
<td>27%</td>
</tr>
<tr>
<td>3rd</td>
<td>School concerns</td>
<td>24%</td>
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<tr>
<td>4th</td>
<td>Leadership concerns</td>
<td>9%</td>
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<tr>
<td>5th</td>
<td>Parent concerns</td>
<td>6%</td>
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<tr>
<td>6th</td>
<td>Community concerns</td>
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</table>
Concerns related to teachers, students, and the school ranked highest and accounted for 83 percent of the items presented.

**Unique Concerns**

Some of the concerns were unique or mentioned just once. These barriers were identified primarily by the high school faculty. These issues included:

- Developing student confidence
- School involvement
- Commitment to school
- Student responsibility
- Student self-respect
- Effective planning and scheduling
- Public image
- Teacher leadership

![Figure 4: Areas of Concern as Reported by Participants](image)

An examination of this list revealed that three items were related to students and three were school issues. The student issues were: 1. developing student confidence, 2. student responsibility, and 3. student self-respect. The three school issues were: 1. school involvement, 2. commitment to school, and 3. effective planning and scheduling. One item related to the image of the school and one addressed teacher leadership.

**Teacher Concerns**

Morale
- Collaboration, share ideas, teachers talk with one another
- Praise and positive feedback for students and teachers
- Develop positive attitudes and confidence
- Help students believe in themselves
- Become unified with common goals
- Teamwork, unity
- Continue to learn and grow
- Build trust with leadership
- Professionalism
- Communication
- Improve public image
- Experimentation
Student Concerns

Achievement and learning
Discipline
Morale
Motivation
Confidence
Ownership
Continue to learn and grow, knowledge
Responsibility
Self-respect

School Concerns

Positive school environment, climate, richer environment
Appearance
High expectations, Higher standards enforced
Commitment and involvement
Pride
Organization and consistency
Effective planning and scheduling
Vision

Solutions or Plans for Removing Barriers

Find opportunities for collaboration
Improve math achievement
Use homework passes
Grade of 100 percent is rewarded with no homework
Homework corrected to 100 percent will improve the grade
Use “Caught Being ________________” cards and awards
Encourage parents to help with homework
Offer parent training and enrichment by grade level
Have Parent Day to allow parents to shadow their child
Develop a parent accountability plan
Require parent attendance for certain functions
Invite parents to “Lunch and Learn” by having lunch with their child and attending a workshop
Collaboration, share ideas, and talk with other teachers
Celebrations
Build trust
Praise one another
Develop a positive classroom
Develop personal positive attitudes
Believe in ourselves
Continue to learn and grow
Remember our purpose
Contact parents
New phone system and more phone lines
Parents pick up report cards
Student events for PTA
School uniforms
Consistency with discipline
School-wide discipline policy and procedures
Collaboration among teachers recesses

Most Frequently Listed Solution

One solution, related to teacher collaboration, was mentioned by all faculties. The teachers in the six schools who participated in this project wanted more opportunities to talk, share, and collaborate with one another.
Find opportunities for collaboration (mentioned by three schools)
Talk with other teachers
Share ideas

Solutions and Plans for Removing Barriers Organized by Categories

Teacher Related Solutions
- Find opportunities for collaboration (Listed by 3 faculties)
- Talk with other teachers
- Share ideas

School Related Solutions
- Improve math achievement
- Use “Caught Being __________” cards and awards
- Celebrations
- Develop positive classrooms
- Continue to learn and grow
- Remember our purpose
- School uniforms
- Diverse recesses
- Consistency with discipline
- School-wide discipline policy and procedures
- Use homework passes
- Grade of 100 percent is rewarded with no homework
- Homework corrected to 100 percent will improve the grade

Solutions Related to Parents
- Encourage parents to help with homework
- Offer parent training and enrichment by grade level
- Have Parent Day to allow parents to shadow their child
- Develop a parent accountability plan
- Require parent attendance for certain functions
- Invite parents to “Lunch and Learn” (have lunch with their child and attend a workshop)

Solutions Related to Dispositions and Attitudes
- Build trust
- Praise one another
- Develop personal positive attitudes
- Believe in ourselves
- Contact parents
- New phone system and more phone lines
- Parents pick up report cards
- Student events for PTA

LIMITATIONS & FUTURE RESEARCH PLANS

This study was limited to one small rural school system with six schools and the central office participating. The researchers plan to conduct similar workshops in a nearby school system. The collection of additional survey data, participant interviews, and focus group discussions during future workshops will help improve the process of developing a culture for success in the schools in this area. Because the participants in this study shared a common interest in collaboration, sharing ideas, and talking with one another; it will be important to investigate the need for collaboration with other faculties. As part of the proposed interview process, teachers may provide the researchers with a better understanding of their need for collaboration and perhaps suggest ways to meet this need.
A list of goals for future workshops is presented below.

**Goals**

- Develop interview questions, interview participants, and plan items for focus group discussion.
- Make an audio tape of the interviews and focus group discussions.
- Develop and examine concrete solutions to solving the problems.
- Determine how successful the faculties are in developing A Culture for Success.
- Determine whether the faculties are asking the right questions.
- Measure how well faculties are planning the right solutions.
- Determine how well faculties know how to identify and solve their own problems.

**Proposed Participant Survey**

1. Did you find the workshop, *A Culture for Success*, helpful?

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<td>Moderately</td>
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<tr>
<td>Very Helpful</td>
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2. Did you focus your efforts on improving the topic identified by your faculty?

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<tbody>
<tr>
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<tr>
<td>Often</td>
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3. Did some faculty members work to improve the selected area of need?

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4. Did most of the faculty work to improve the identified area?

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<td>Not At All</td>
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<td>Sometimes</td>
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<tr>
<td>Often</td>
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5. Has there been improvement in the area selected by your faculty?

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<tbody>
<tr>
<td>Not At All</td>
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<tr>
<td>Moderate</td>
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<tr>
<td>Very Much</td>
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6. Explain why the faculty could or could not follow through with improving the area identified.
7. Is the area still problematic?
8. Would you be willing to participate in an interview with one of the facilitators?

**AUTHOR NOTE**

We would like to acknowledge the effort and time provided for this project by Dr. Yvette Richardson, former Superintendent and initiator of the transformation effort discussed in this report. We are also grateful to the administrators and teachers for their contributions during the workshops.

**REFERENCE LIST**


PROCESS CONSULTING AND INTERVENTION CASE STUDY AT COLLIN COUNTY COMMUNITY COLLEGE

Negar Sohaee  
Colorado Technical University, USA

ABSTRACT
The purpose of this case study is to explore consensual validation of propositions at Collin County Community College District in Texas (CCCCD). Methodology which I have worked is based on Appreciative Inquiry (AI), theoretical perspective and Identification of life-giving forces. Indeed, I found the whole core values through real story telling of success by Faculty members and full time staffs. Appreciative inquiry is a way which I had chosen to rediscover the core strengths and highest potentials at CCCCD. It also helps participants developing self-talk in a constructive way and encouraging them to reach their optimum goal. Appreciative inquiry is a method that shows all goals and dreams which will support the future of CCCCD. Appreciative inquiry is the fundamental approach to; honor amplification of what works and the life-giving elements. However it is a system process that works at all levels, with individual students, one-on-one student-teacher relationships, classrooms, schools, school districts and communities. Expansion of life giving forces or core values has been identified by appreciative interviews, which helps to build consensual validation of the propositions.

Keywords: Process Consulting, Intervention, Appreciative Inquiry (AI), Life-Giving Forces, Core Values, Collin County Community College District (CCCCD), Case Study.

INTRODUCTION
Choosing a college is one of the most important decisions any student will ever make. Students choose Collin County Community College District (CCCCD) because they find the right combination of programs, innovation and personal attention. In fact, Collin College is the home of three U.S Professors of the Year in nine years, one Texas Professor of the Year, two Fulbright Scholars, and three Academic All-USA students in five years, five Minnie Stevens Piper Professors and nearly 1,000 outstanding faculty members. CCCCD had offered its first classes at area high schools in 1985, and it has expanded to serve about 45,000 credit and continuing education students each year.

Clearly, developmental education was a major issue for CCCCD. Existing data analysis also indicated that the developmental education program was being on a right track but CCCCD has specific plan to:

- Increase the percentage of students who complete the core curriculum, earn a certificate, or earn a degree within three years of entering the College.
- Increase the community’s recognition of Collin College’s educational opportunities, quality, and value.
- Create linkages and new opportunities to help students navigate 21st century educational transitions.
- Improving higher education accessibility and advancing educational quality through the development of alternative resource streams and improved efficiencies.

January 2010 marked the opening of the Collin Higher Education Center, where universities offer junior- and senior-level college courses as well as graduate and doctoral programs. The center admits university programs and offering the convenience of higher education without commuting outside of Collin County.

Past decade, dramatic effort has changed the whole educational system, need to work better and lower cost, introduced numerous strategies and techniques designed to improve the quality of service delivery. Nowadays, online education is more efficient and effective. In this case study employees are asked to think differently about what they do and how they do, to see a range of possibilities instead of the one right answer.

METHODOLOGY
Appreciative Inquiry as a methodology seeks to locate and heighten the life giving forces or core values of organizations (Cooperrider and Srivastva, 1990). An affirmation of the organization calls for an in-depth understanding of the CCCCD life giving forces. Life giving forces refer to the unique structure and processes of an organization that make its very existence
possible. The life giving forces can be compared to the building blocks or central pillars of an architectural marvel and will vary with each organization (Thatchenkery, 1996, pp. 17-20). Life giving forces may be the ideas, beliefs, or values around which organizational activity occurs.

In this outlines the methodology that we used in designing and carrying out my AI project at CCCCD, Spring Greek Campus. I followed the basic overall model, which has been described by Dr. Thatchenkery.

**APPRECIATION INQUIRY MODEL**

Appreciative Inquiry (AI) is based on the realization that improvement is more engaging, more fun, and more effective when the focus is on what is already working rather than what is broken. This AI principle is inherent in the best of human relationships, and most of us have had an experience of an appreciative moment that has changed our lives in ways both little and large (Fitzgerald, Murrell, & Miller, 2003).

AI offers an approach and methods that encourage breaking through to new levels of consciousness. By recognizing and amplifying successes and strengths that already exist, we create a new image of the future that is so compelling that we consciously and unconsciously move toward it; we make decisions and take actions that create it. AI allows us to move beyond those relentless problems we have been working so diligently to solve (Johnson, & Leavitt, 2001).

AI methodology focuses on discovering what works well, why it works well, and how success can be extended throughout the organization. It is both the vision, and the process for developing this vision, that create the energy to drive change throughout the organization (Cooperrider, 1980). Cooperrider also noticed when the focus was on problems, the result of the inquiry was a vicious circle spiraling downward. When the focus was on what's working and what's valuable, the result was a virtuous circle spiraling upward. "When I do well I feel good; when I feel good, I do well."

Appreciative inquiry is a method of change that attempts to generate a collective image of a new and better future by exploring the best of what is and has been. These new images create a full effect that generates evolution in social forms. Four principles that drive the action research to create new and better images are that research should begin with appreciation, should be applicable, should be provocative, and should be collaborative (Cooperrider and Srivastva, 1987, p. 160). The basic process of appreciative inquiry is to begin with a grounded observation of the best of what is, then through vision and logic, collaboratively articulate what might be, ensuring the consent of those in the system to what should be, and collectively experimenting with what can be (Bushe, 1995, p. 17).

In this case study, I was working alone and I did my research at Spring Creek Campus (SCC). On August 12, I sent a letter to the Vice President of SCC and I elaborate the purpose of the project which is organizational analysis of Collin Creek Campus by using appreciative inquiry (AI) or Appreciative Sharing of Knowledge (ASK) methodology. I also mentioned that the project should provide valuable insights about the organizational dynamics of the college and generate concrete propositions that will enhance its core values, therefore, I will use an application of AI to knowledge management intended to enhance knowledge sharing in this college.

In this project I tried to co-vened SCC staff and faculty members in group. I sent an email to the faculties and staff directory and I elaborate more about this project and I also attached the questions as well and I ask them to arrange a group meeting with at least 15 faculty members or staffs who are interested to participate in this project.

Unfortunately, I wasn't successful enough have chance to have a group meeting because of different time schedule, therefore I had to have a meeting one by one by each faculty members and asked about their stories, and discussed about the core values which they determined, I also had another meeting by the end of August with completely new members and discussed about the eliminated cores value and identified why selected core values are the best values which meet the mission of CCCCD. And finally, I had the third meeting at the end of September, which I was talking about the implementation process. Most of these interviews and meetings had been done alone by interviewer and interviewee but also there were two small groups which were framed by staffs and it was really great. Finally, the total of 15 initial and final surveys from the CCCCD’s faculty members will be use to identify the validation propositions.

However this kind of meeting was really time consuming and difficult long process for me to gather data but at the end it was turned out really great because most interviewee had enough time to talk about every detail aspects and their experiences which was really helpful.
Existing data analysis also indicated that the developmental education program was being successful but still this education program is changing to be a very good and effective one. An education system which is provided is based on knowledge needs and sound working process and relationship between students and CCCCD. In fact CCCCD will be the guardian of that process while working with students.

As we work together through these stages, new information and data will become available, allowing me to specify gradually CCCCD’s approach. That information might also lead college to re-contracting and re-adjusting the role and contribution of all parties involved. The depth of those steps will be depends on the complexity of the assignment and the number of stakeholders involved. The short description of each step that had been done during this project is:

**Step 1: Contact**

It's the start of our working relationship. I use it to build the relationship, create understanding for my needs and expectations and to clarify what I can expect from CCCCD. The college is to share the initial perception of the performance issue or challenge, and understand the context the assignment will be conducted in.

This step must lead to mutual willingness to invest in working together, with good perspectives to contribute to the organization's performance & success. This step takes usually one or two meetings but in my case it takes nine meetings since I had to work one by one, after these meetings the interviewees are free to decide not to go ahead with this project.

**Step 2: Contracting**

This step leads me to a more formal working agreement covering the assignment, ways of working, roles of college and my roles as well. It’s a first attempt to define the scope and boundaries of the assignment and to identify the stakeholders involved. It produces a first outline of the expected results in terms of behavior change and performance improvement. Here we agree on:

- Next steps to take (data gathering and needs analysis)
- How to work together on this
- How to exchange information as we go
- Timing

**Step 3: Data Collection & Analysis**

In this step, I gathered and analyzed all relevant information. To create designs a number of activities to allow stakeholders to do:

- Share and discuss the information and experience I have around the issues
- Make my own analysis based on the gathered facts

This process could be facilitating by a number of methodologies such as focus groups, interviews, meta-planning, Force, Field Analysis, SWOT-analysis, Brainstorming, Impact / Effort. This project only focused on groups, brainstorming and interviews.

**Step 4: Diagnosis & Feedback**

In this step I (as a consultant) gave some feedbacks to the vice president of CCCCD on the assembled data and the different views that stakeholders had on this information (analysis) caused stakeholders involved.

Based on this information there are two options:

- Agree that we understand the nature of the problem and we can identify the context, causes and consequences that are involved in the Performance issue or challenge, or
- We decide that further investigation and data gathering is needed. The main objective of this phase is to bring about a mutual understanding and agreement on the diagnosis of the situation.

**Step 5: Decide On the Way Forward**

Once in agreement on the diagnosis, we (two of CCCCD’s professors, vice president and I) brainstorm together on possible action strategies to address the issues, facilitates the problem solving process and enables stakeholders to think out of the box and to produce a number of creative and innovative ways to deal with the issues.
Step 6: Design the Intervention

In this step, in close collaboration with internal college expertise and experience, develops a detailed plan including methodology, involvement & communication strategy, project organization, activities, resources, budgets for the identified solution. I also design the necessary measures (qualitative / quantitative) to balancing propositions shared with CCCCD by confidential survey.

Step 7: Implementation

In this project I will carry out neither the action plan generated to solve the problem, nor implement new technology, processes, etc.

Step 8: Evaluate & Learn

This is the formal closure of every project, review with the stakeholders the activities undertaken and identify the learning. Mostly In this step, consultants try to observe or measure the behavior changes that occurred and the impact it had on the business results. They also formalize the learning in terms of process: how did we work together, what went well, what can we improve and etc. The idea is to formalize the learning and use them for future assignments or for future internal projects in the organization.

DATA COLLECTION

Incredible amounts of data exist across CCCCD’s website and campuses. This data can come in the form of team functions together and individual interviews from faculty members and staffs. The task is not only how to collect the data, but what data should be collected and how to make the best use of it. By finding the right ways to make sense of data and turning it into actionable knowledge. This knowledge-seeking approach can be applied throughout the entire organization, from students improving their performance, to staffs and faculty members by using statistical analysis to identify what techniques will provide the biggest impact on.

In this project I was working on Collin County Community College District on Spring Creek Campus. Also I have a limitation on sample size since I was working alone and because of the factor of time I could only select 15 people randomly, however it wasn’t completely randomly because I divided College’s employees to two groups, one is faculty members and the other one is staffs. The selection from each group was completely randomly.

During my data collection, my ideal sample size was 20 people from both groups, but unfortunately only 15 people respond to my request and agreed to help me in this project (five professors and ten staffs).

The data collection had been done on three different steps. First step was about storytelling meeting, which 9 people were contributed (three professors and six staffs). Professors could contribute only in single meeting but staffs were attended in small groups meeting. The result of these series of interviews and meeting helped me to figure out the theme and they also helped me to narrow down to core values. In storytelling meeting I had a very friendly conversation in one by one meeting when professors talked about their story we had enough time to elaborate more about the other participant’s story, it was amazing some of them even response to their colleagues stories and give me their ideas as well. In each interview I tried to move quickly to the new topic when the conversation and concept wasn’t relevant to the interviewee. Absolutely, I did not jeopardize the flow of the interviews and tried to make a nice comfortable environment for interviewees to share their positive examples in a natural way. I had to make some minor adjustment for some interviewees to let them being relax and comfortable to talk.

The stories were condensed and transcribed to be used as qualitative data to identify value themes which help me to simplify the organizational factors to the six factors that seemed the most basic and relevant to CCCCD. These factors were:

1. Respect and dignity
2. Integrity
3. Excellent education (high quality education and services)
4. Humanism
5. Support (strive to support students)
6. Creativity

Each response was coded to a value that was imbedded in the story. Once the inter-rating was completed all data where an agreement was not reached resulted in that data being withdrawn from further analysis. A number of agreements were made...
during this process by consolidating similar terms. For example, I identified the value as excellent services and when I revised it again I identified it as involvement, finally the value was selected as service and Involvement.

The core values that were identified were ranked based on its frequency of being surfaced in the stories. The top five core values were targeted as the CCCCD's life giving forces. However, a natural break in the frequency distribution of the data was also considered in making the final decision.

A second round of interviews was conducted to accomplish step two and to validate the identified core values. A random selection of staffs and faculty members was conducted in the same manner as was done for the first round (two professors and four staffs) and they were interviewed separately. Each of interviewees was asked if they agreed with the core values that surfaced from the stories generated in the round one interview and add any if they believed that any core values was missing. And also set of interview questions was prepared to explore organizational factors that facilitate existence continuance of the life giving forces or core values. In other words, what are those factors in the organization that sustain and nourish each of the identified life giving forces or core values?

Finally in this step we came up with following core values (Figure 1):

1. Learning
2. Service and Involvement
3. Creativity and Innovation
4. Academic Excellence
5. Dignity and respect

![Diagram of CCCCD's Core Values]

In the last series of meetings my samples was selected from the first two groups, which was only six people (one professor and five staffs). In this meeting we talked about possibility prepositions eventually revised set of propositions is written. I used questionnaire to valence the propositions. The qualitative data was once again consolidated and compiled into thematic phrases to identify patterns or trends as the last step of the project. A matrix was prepared to organize the response themes into cells to correspond with the particular life giving force and organizational factor.

For the 9 individual interviews, I used a standard interview form to guide the interview process. All the interviews had been done in person neither by email nor phone. However for interviewees’ convenience I always emailed the questions before meetings to let them know what I would like to ask them.

The following list summarizes the meetings and attendance:

- Discovery meeting (one AI; one client)
• Story telling workshop I (one AI; four clients)
• Story telling workshop II (one AI; two clients)
• Individual story telling (one AI; three clients)
• Individual interviews (six interviews in three visits)
• Possibility propositions (one AI; six clients)

In the terms of actual interviews, as I mentioned before, I developed a guide line questions to help me be consistent in doing my interviews flawless. When carrying out the actual interviews I used taking notes. After all the interviews had been done I created a common form to capture the data from each interview. Typically each interviews lasted 30 to 45 minutes. Since the faculty members had a fixed time schedule so my time schedule was flexible. Also the first group meeting members selected their time to attendance the meeting but the second meeting was formed on lunch time.

The following tables and charts depict a few aspects of my sample’s diversity:

<table>
<thead>
<tr>
<th>Table 1: Summaries of Interviewee’s detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees interviewed</td>
</tr>
<tr>
<td>Professors</td>
</tr>
<tr>
<td>Staffs</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>First meeting</td>
</tr>
<tr>
<td>Professors</td>
</tr>
<tr>
<td>Staffs</td>
</tr>
<tr>
<td>Second meeting</td>
</tr>
<tr>
<td>Professors</td>
</tr>
<tr>
<td>Staffs</td>
</tr>
<tr>
<td>Third meeting</td>
</tr>
<tr>
<td>Professors</td>
</tr>
<tr>
<td>Staffs</td>
</tr>
</tbody>
</table>

RESULTS

The interview produced a large amount of data which was subsequently organized into a series of excel spreadsheets. Data was actually sorted into core value. Below are the results:

Learning- by organizational level of respondents

<table>
<thead>
<tr>
<th>Learning Theme</th>
<th>Professors</th>
<th>Staffs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High quality of education</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Facilitate higher education</td>
<td>4</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Growing so fast to become a university</td>
<td>3</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Choice No. 1 for student who wish to go to the college</td>
<td>3</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Dedicated to learning</td>
<td>2</td>
<td>7</td>
<td>11</td>
</tr>
</tbody>
</table>

Service and Involvement- by organizational level of respondents

<table>
<thead>
<tr>
<th>Service and Involvement Theme</th>
<th>Professors</th>
<th>Staffs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help students to follows their dream</td>
<td>4</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Provide Variety of courses in different campus</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>High technology and tools for students</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Facilitates for special needs students</td>
<td>0</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Good library and resources</td>
<td>1</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>
Creativity and Innovation- by organizational level of respondents

<table>
<thead>
<tr>
<th>Theme</th>
<th>Professors</th>
<th>Staffs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open to innovative program</td>
<td>5</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>High motivation for creativity</td>
<td>2</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>High level of energy in faculties</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Encourage by CCCCD to do more new thing</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Process of developing new courses and program</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Academic Excellence- by organizational level of respondents

<table>
<thead>
<tr>
<th>Theme</th>
<th>Professors</th>
<th>Staffs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Development</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Dedicated faculties</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Academic freedom</td>
<td>4</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Open communication with other college or universities</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Knowledgeable and talented faculty members</td>
<td>3</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Task oriented</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
</tbody>
</table>

Dignity and Respect- by organizational level of respondents

<table>
<thead>
<tr>
<th>Theme</th>
<th>Professors</th>
<th>Staffs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Satisfaction</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Professional development</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Academic Award</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Respectful people</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Recognized by Boss</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Encourage by college to do the best</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
</tbody>
</table>

Valencing Results

As mentioned previously surveys were developed in order to gather information related to the possibility propositions. In the final survey six people was selected from the group I and II, five of them were staffs and only one of them was faculty members. There are three focus areas for each proposition: current state, ideal condition and time frame for execution of the proposition. The data from the questionnaire was tabulated again isolate salient patterns. Surveys responses within each possibility proposition were averaged and the difference between current state and ideal conditions was calculated. All these data was noted by client. The areas with the highest degree of difference were identified as a critical possibility propositions. The figure 2 is the result of the tabulations.
Prioritized Possibility Propositions

1. Learning – Organizational Growth
The college is committed to building a diverse campus community to ensure that students explore their interests, discover new academic and extracurricular pursuits, and learn from each other. More than ever, Collin College is making its distinctive education accessible to students from a broad range of cultural, ethnic and economic backgrounds.

2. Service and Involvement – Distinctive Faculties
In this college very distinctive faculties teach most of the courses and certified course, there is no doubt that this college provide each courses with high quality and well known Instructors.
3. Service and Involvement – Organizational Growth
Collin College enrolls about 46,000 credit and continuing education students each year in different campus. Collin College is the only public college in the county that offers more than 100 degrees and certificates. January 2010 marked the opening of the Collin Higher Education Center, where universities offer junior- and senior-level college courses as well as graduate and doctoral programs. The center brings university programs to you, offering the convenience of higher education without commuting outside of Collin County. In addition, we have expanded our campuses in Frisco, McKinney and Plano.

4. Creativity and Innovation – Organizational Growth
For 25 years, Collin College has offered a first class education to residents entering college for the first time or seeking a change in career, this is a very exciting time in our history

5. Academic Excellence – Course Completion by Students
Success in the classroom can sometime depend on the support a student receives outside the classroom. At Collin College we are interested and committed in assisting each of our students in meeting their academic goals and dreams. In an effort to do just that we offer many areas for Personalized Support

6. Dignity and Respect – Distinctive Faculties
The college has garnered numerous academic awards by professors who was identified or recognized by college. We are one of the few colleges that have more than one U.S. professor of the year,” Dr. Collins said.”

INTERPRETATION AND DISCUSSION
Individual interviews with 15 faculty members and staffs give us many ideas in five core values: Learning, Service and Involvement, Creativity and Innovation, Academic Excellence, Dignity and Respect. These core values and organizational factors categorized for the purpose of developing possibility propositions. The themes chose were:

1. In Learning Theme category: High quality of Education, Facilitate higher education, growing so fast to become a university, Choice No. 1 for student who wishes to go to the college, Dedicated to learning.
2. In Service and Involvement Theme category: Help students to follows their dream, Provide Variety of courses in different campus, High technology and tools for students, Facilitates for special needs students, and Good library and resources.
3. In Creativity and Innovation Theme category: Open to innovative program, High motivation for creativity, High level of energy in faculties, Encourage by CCCCd to do more new thing, and Process of developing new courses and program.
4. In Academic Excellence Theme category: Professional Development, Dedicated faculties, Academic freedom, Open communication with other college or universities, Knowledgeable and talented faculty members, and Task oriented.
5. In Dignity and respect Theme category: Personal Satisfaction, Professional development, Appreciative letter, Academic Award, Respectful people, Recognized by Boss, and Encourage by college to do the best.

Several themes spanned several core values. The core values and underlying theme analysis revealed the predominance of various themes in my interview data. While the categorization by organizational factors and core values was primary basis for the selection of possibility propositions, the same predominance is a way or organizing my observation and data for discussion.

If I narrow down all these themes to five top themes is possible and they would be:

- Dedication to learning
- High technology and tools
- Motivation creativity
- Academic freedom
- Respectful environment

Dedication to Learning
During my interviews several faculty members and even some staffs mentioned that attending the CCCCd had a very profound impact on them and remains a strong influence on the person that they are today. Because of the unique friendly environment and educational experience, they developed a strong dedication to learning, deep community values and a self-motivated curiosity.
The further they have worked in the college, the more they have realized that their experiences were in many ways more important to their development than the years spent in other school. The way they learn, think and apply themselves today seems to originate from years at the CCCCD.

One distinguishing feature of the CCCCD that has greatly influenced them is the nice friendly and calm environment. CCCCD environment fostered an intrinsic love of learning, inspiring self-motivation as their path towards achievement. Today, they continue to approach school in this way, as something that they embrace, not as an obligation or requirement.

**High Technology and Tools**

Technology has become so entwined with college students’ often frantic lives that most in a new survey say they’d be more frazzled without it.

The Associated Press-mtvU Poll, found that being perpetually connected comes at a cost. While 57 percent of students said life without computers and cell phones would make them more stressed, a significant number — 25 percent — said it would be a relief. A big majority feel pressured to instantly answer texts or voice mails, most get nervous if someone doesn’t immediately reply to a message, and nearly half worry whether messages they get are jokes. ([http://www.latimes.com/news/nationworld/nation/wire](http://www.latimes.com/news/nationworld/nation/wire))

High school students place a high priority on colleges that mix technology into their instruction. And college campuses are trying to meet that demand by adding digital content, virtual learning and online collaboration software to their toolboxes.

An online survey of 1,019 college students, faculty and IT staff, called the CDW-G 2010 21st-Century Campus Report, shows that colleges are creating interactive learning experiences with these tools. The report also compares this survey's findings with those of the 21st-Century Classroom Report released last month. ([http://www.convergemag.com/classtech/More-Technology-in-College.html](http://www.convergemag.com/classtech/More-Technology-in-College.html))

**Motivation Creativity**

To some extent, intrinsic motivation resides in a person's own personality. Some people are more strongly driven than others by the enjoyment and sense of challenge in their work.

Although part of intrinsic motivation depends on personality, a person's social environment can have a significant effect on that person's level of intrinsic motivation at any point in time; the level of intrinsic motivation can, in turn, have a significant effect on that person's creativity.

Much of the evidence on this connection between the social environment, intrinsic motivation, and creativity comes from controlled laboratory experiments. In one such study, for example, college students were presented with a simple artistic creativity task—making a paper collage with a standard set of materials.” Half of the students were randomly assigned to a condition where they were offered a reward (money) for making the collage, and half were simply given the collage activity to do. In addition, half within each group were given a choice; they were asked whether they would agree to make the collage in order to get the money (in the choice/reward condition), or they were simply asked whether they wanted to make the collage (in the choice/non-reward condition). Students in the no-choice condition were not offered any choice in the matter; those in the no-choice/reward condition were simply presented with the reward as a bonus, and those in the no-choice/non-reward condition were simply given the collage task.

The results were quite clear and striking. The students who had essentially made a contract to do the activity in order to get the reward (choice/reward condition) exhibited strikingly lower levels of creativity in their collages than the other three groups. The "means-end" work environment—"Do this task as a means to the end of getting this reward"—appears to have undermined their creativity. In contrast, however, those students who received the reward as a bonus showed no diminishment in creativity. In fact, their creativity was higher than those of the other groups. And, in keeping with the Intrinsic Motivation Principle of Creativity, students' creativity was correlated with their reported interest in the collage activity; the more interested they were, the more creative their collages were judged by art experts. Thus, it was not the fact of reward, but the perception of reward (resulting from the way in which it was presented) that made the difference.

**Academic Freedom**

There are two distinctly different kinds of academic freedom, which should have distinct names:
Individual academic freedom protects an individual professor.
Institutional academic freedom protects universities from interference by government, a right that applies to the community of scholars, not to individual faculty.

**Individual Academic Freedom**

A general expression of individual academic freedom is included in the "1940 Statement of Principles on Academic Freedom and Tenure" by the American Association of University Professors (AAUP). This Statement by the AAUP has no legal effect, but the AAUP publicly censures colleges and universities that they believe have violated academic freedom. However, all major colleges and universities have adopted this Statement, or a variation of this Statement, which is contained in the faculty policy manual of each college or university, and is incorporated by reference in the employment contract between the university and each individual faculty member. In many cases, individual academic freedom is simply part of academic tradition – the routine way that faculty committees, department chairmen, and deans operate when they make judgments about who to hire, who to promote, who gets tenure, who gets larger salary increases, and who gets their employment terminated. ASIDE: In my ten years as a professor, the most egregious violations of academic freedom that I saw were committed by department chairmen who had spent all of their previous professional career as an employee of either industry or a government laboratory: these chairmen had neither understanding nor respect for academic freedom, they saw professors as mere employees who they rigidly managed. Individual academic freedom is a relationship between professors and the university administration.

**Respectful Environment**

The learning environment is just as important as the teaching/learning process. Some features of CCCCD classrooms are:

Many people associate respect with discipline as given by the teacher, but that is not always the case. Frequently, a respectful classroom environment comes from the students’ response to how the teacher sets the tone of the classroom. Positive learning environments such as these come from involving students, providing clear expectations and rigorous curriculum.

Involving students in the classroom provides the sense of ownership in their learning. It is easier to keep most students engaged in a lesson when they are participating through discussions, labs, projects and other student centered activities. Once engaged, students create their own respectful classroom environment through their interactions with the teacher and other students. When the teacher models respectful behavior as well then students further their understanding of how to show respect.

Another way to involve students is through classroom meetings. In a class meeting students should feel comfortable asking questions, providing their opinions and also supporting their classmates. The meetings should also provide students with the opportunity to make decisions about some classroom rules and expectations.

**REFLECTING ON THE PROCESS**

From the beginning there were several issues which effected on the project.

- Working alone in this project
- Getting permission from CCCCD to work in this college
- Setting a time schedule for individual and group's meetings
- Moving out from the Collin County
- Heavy class load

The most difficult issues was working alone on this research, since I had to do all the steps by my own was really time consuming and indeed time schedule for faculty members was really tight so they couldn't attend the group meeting therefore I was decided to interview them individually which takes almost a month to set the appointment with faculty member.

The other problem was that since I didn’t had any team member so I was coding and working on matrix so long because I didn’t want to miss any point, therefore it took almost 2 weeks to set the final Matrix.

**RECOMMENDATIONS**

My recommendation for CCCCD will focus on two major problems which were mentioned by students and some faculty members: course completion by students and administration and education cost.
• During the Term of the Course

The nature of the first year curriculum is rapid-paced and cumulative, such that each course is considered prerequisite for the successive courses. Efforts are made by course instructors, the Associate Dean for Basic Science, and advisory deans to proactively identify students, who are having academic difficulty or who, for reasons of illness or other extenuating circumstances, are temporarily unable to attend class. In these situations, the assistance of student tutors, special guidance by course directors, or other forms of academic or counseling support may be offered to help the student accomplish course goals. In extenuating circumstances and at the discretion of the course director(s), the student may negotiate to delay due dates, tests or presentations, or to retest or revise coursework during the term of the course(s).

• Incomplete Grades

It is recognized that students who encounter difficulty of an academic or personal nature may also find it necessary to delay completion of a course beyond the term of the course. At the course director's discretion, students with minor deficiencies in completion of course requirements or those who must delay completion due to reasons of illness or other extenuating circumstances may receive a temporary grade of Incomplete, to be submitted when the final grades for the course are recorded. The student must then initiate a formal request to complete the course requirements by submitting to the Registrar’s Office the Plan for Course Completion form with approval by signature of the course director and the student’s advisory dean.

If a student has multiple —Incomplete grades and —Plans for Course Completion that preclude completion of coursework in a timely manner, the Promotions Committee may recommend to the Vice Dean a delay in further progression in the curriculum. If the Promotions Committee determines that, despite an approved —Plan for Course Completion, the student is not adequately prepared to continue in the curriculum, a delay in further progression may be recommended to the Vice Dean, even though no "Fail grade has been recorded.

• Fail grades

If a grade of —Fail is received in a course, either because of major deficiencies in meeting course requirements or failure to clear an —Incomplete grade as described, the —Fail grade will become a permanent part of the student's transcript. With the course director's advice and consent, the Promotions Committee may recommend to the Vice Dean that the student remediate the course prior to promotion to the next year. Remediation of failed courses may occur only while other courses are not in session in order to avoid further academic difficulty. When deficiencies in coursework are major or in multiple courses, the Promotions Committee may recommend that the student repeat the entire course(s) the following year.

The other things that I was faced during my project process was administration and education cost. In the current economic downturn, traditional cost management strategies are not enough. Educational institutions must rethink key processes and consider smarter approaches to reduce administrative costs in order to have more students. Investments in education must be focused on ensuring lasting transformation. Smart administration for education can help educational institutions position themselves for the future.

Smart administration is an instrumented solution, using sensors and alerts to collect and monitor operational data directly from originating sources anywhere on campus. The solution is also interconnected, linking functions across the educational system through the use of the interoperable assets of a service oriented architecture.

And it provides dashboard management tools that give administrators a comprehensive view of performance across a single campus, or a set of multiple locations. With this intelligence, administrators can get a clear view of financial, environmental, risk, safety and preparedness performance to make more informed decisions.

Smart administration can unlock the value of information for better outcomes in educational system. The values of smart administration are:

• Provides data and insights related to operations, giving administrators and business officers more information about institutional performance—asset management, financial trends, risk exposures.
• Uses open and community-sourced administrative applications built on open standards to enable interoperable processes and workflows.
• Reduces costs by creating shared services centers that leverage economies of scale, green technology design, cloud computing and virtualization to efficiently provide high-quality services.
• Lowers cost of teacher, faculty and staff computing resources through desktop cloud services.

CONCLUSIONS

While most organizations focus on what is wrong and how to fix it is an ingrained habit, I applied Appreciation Inquiry (AI) process as a mental shift from focusing on problems to see all the edges of strengths. No wonder Appreciation Inquiry, the strengths-based approach, which I take to change in human systems, could have better results than just seeking out and solving problems.

Appreciative Inquiry is based on the assumption that everyone is proud of their college/colleague. Tapping into that pride as a resource allows everyone to feel responsibility and accomplish their goals. Indeed active approaches from the perspective of accomplishments, unlike many approaches that focus on identifying problems and seeking solutions, is keeping back all those negativity. Appreciative Inquiry based on college/colleague positive individual histories is building up a path and applying tools of making a foundation in a broad spectrum of their best institutional goals.

Focusing on positivity, strength and good will are producing enough energy to continue and facing of a challenging future optimistically. The process of Appreciative Inquiry results in a specific plan stated in terms that provide a vision for the future. Then is a sense of a vividly imaginary future that compels faculty and staff to support/action. These statements are all about the college/colleague where they will stay after a specific period of time, only based on the best of the past.

Each individual in my study develops specific strategy on a basis of AI, which help them to achieve those purposes and their sight on time whenever the whole CCCCD is stepping to a brighter future.

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In introductory statistics education graphical representations are often combined with formulas to express statistical ideas. The combinations can enhance students’ understanding of statistical ideas. However they can also cause difficulties and inconsistencies for students who do not have good understanding of formulas. Therefore there is a need to explore more graphical representations.

This paper discusses some graphical representations related to the topics of the normal distribution, confidence intervals and simple linear regression. The graphical representations are presented without relying on commonly used formulas. However after each graphical representation, relevant formulas are discussed to show their connections.

By differentiating and connecting between graphical representations and formulas, we can provide more choices or approaches for students to understand statistical ideas. For example, we may choose either graphical representations or formulas; we may start from graphical representations and then conclude with formulas; we may start with formulas and then use graphical representations to explain formulas; we may present graphical representations and formulas simultaneously.

Keywords: Graphical representations; Graphs; Formulas; Statistical ideas; Approaches

1. INTRODUCTION

In introductory statistics education graphical representations are often combined with formulas to express statistical ideas. The combinations can enhance students’ understanding of statistical ideas. However they can also cause difficulties and inconsistencies for students who do not have good understanding of formulas. Therefore there is a need to explore more graphical representations.

Graphical representations are discussed in many research works. Gallimore (1991) indicates that graphs in statistics education in England are often superficial and inconsistent, and there is much can be done to use graphs to improve students’ understanding of statistics. Gallimore also recommends the use of graphical representations before gradually moving to abstract representations. Friel and Bright (1995) developed an instruction with a particular sequence of graphs. Then they studied middle grades students’ abilities to read and move between different graphical representations before and after the instruction. They conclude that students need to talk more about graphs and understand the structures and implications of graphs. Pruzek and Helmreich (2009) discuss a graphical approach that is particularly relevant to dependent sample comparisons in the context of analyzing real data sets. Some of their findings would not have been readily revealed without the aid of graphic assessment. Cooper and Shore (2010) study different kinds of graphs to visualize variability in data, which could be easily tied to numerical estimates of variability.

In the following of the paper several graphical representations are discussed. These graphical representations are related to the topics of the normal distribution, confidence intervals and simple linear regression. After each graphical representation, relevant formulas are discussed.

2. GRAPHICAL REPRESENTATIONS RELATED TO THE NORMAL DISTRIBUTION

2.1 Description of a Normal Curve

A normal curve $(\mu, \sigma)$ can be described as follows:

(a) The normal curve is bell shaped.
(b) The curve is centered at the mean $\mu$.
(c) If the standard deviation $\sigma$ is larger, then the curve is flatter and more spread out.

For description (c) above, we want to discuss an alternative description as follows:
The height of the curve at the center is

\[
\text{Height of center} = \frac{1}{\sqrt{2\pi}} \frac{0.4}{\sigma}
\]  

For example, if \( \sigma = 1 \), then the height is 0.4; if \( \sigma = 2 \), then the height is 0.4/2 = 0.2.

With regard to the stretch of the curve, we know that the curve stretches from \( x = -\infty \) to \( \infty \). However we also know that most of the area under the curve (99.7%) is on the interval \( (\mu - 3\sigma, \mu + 3\sigma) \). Let us call the width of \( (\mu - 3\sigma, \mu + 3\sigma) \) to be the width of 99.7% area. Then

\[
\text{Width of 99.7\% area} = 2 \times 3\sigma
\]  

For example, Figures 1 below shows the normal curve \( (\mu = 0, \sigma = 2) \) and the standard normal curve \( (\mu = 0, \sigma = 1) \) indicating the heights of center and the widths of 99.7% area:

![Figure 1: Normal Curve (µ = 0, σ = 2) and the Standard Normal Curve](image)

Figure 2 below shows a normal curve \( (\mu, \sigma) \) indicating the height of center and the width of 99.7% area:

![Figure 2: Normal Curve (µ, σ)](image)

The above description of the height of center in (I) is related to the following normal probability density function formula

\[
f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}
\]  

Comparing (I) and (III), we see that the height of center \( \frac{1}{\sigma\sqrt{2\pi}} \) in (I) is part of the normal probability density function in (III).

In the above discussion, we have the following three descriptions:

- Description (c): If the standard deviation \( \sigma \) is larger, then the curve is flatter and more spread out.
- Height (of center) and width (of 99.7\% area) in (I) and (II)
- Formula (III)

From (I) and (II), we can easily conclude description (c). Moreover (I) and (II) are not as complicated as formula (III).
2.2 Areas under a Normal Curve

Figure 3 below shows the relation of areas between a normal curve \((\mu, \sigma)\) and the standard normal curve. A is the area under the standard normal curve for \(z\) between 0 and some value \(z\), and B is the area under a normal curve \((\mu, \sigma)\) for \(x\) between \(\mu\) and \(\mu + z\sigma\). Then we know that A and B are equal.

![Figure 3: Relation of Areas between a Normal Curve \((\mu, \sigma)\) and the Standard Normal Curve](image)

Now we want to further explain why areas A and B are equal. To do so, we first introduce the relation of heights between A and B as indicated in Figure 4 below. The figure shows that if the height of the right side of A is \(h\), then the height of the right side of B is \(h/\sigma\).

![Figure 4: Relation of Heights between a Normal Curve \((\mu, \sigma)\) and the Standard Normal Curve](image)

Next we approximate A with rectangle \(A_1\) and triangle \(A_2\), and approximate B with rectangle \(B_1\) and triangle \(B_2\) as in Figure 5 below:

![Figure 5: Area A approximated by \(A_1\) and \(A_2\) and area B approximated by \(B_1\) and \(B_2\)](image)

Table 1 below shows the widths, heights and areas of \(A_1\), \(B_1\), \(A_2\), and \(B_2\):
From Table 1, we see that $A_1 = B_1$, and $A_2 = B_2$. Then $A_1 + A_2 = B_1 + B_2$. Since $A$ is approximated by $A_1 + A_2$ and $B$ is approximated by $B_1 + B_2$, then we conclude $A = B$ (Note that if we want to approximate $A$ and $B$ more accurately, we can use more rectangles and triangles).

We can simplify the above as follows:

Comparing $B_1$ with $A_1$ (or $B_2$ with $A_2$), the width is multiplied by the factor $\sigma$, and the height is multiplied by the factor $1/\sigma$. Hence $B_1 = A_1$ (or $B_2 = A_2$).

The relation of heights described in Figure 4 is related to the normal probability density function (III) above. By the normal probability density function (III), we have

$$Height\ of\ A_1 = f(\bar{x}) = \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}$$

Then

$$Height\ of\ B_1 = f(\mu + za) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{z^2}{2}}$$

Conversely we may think that the relation of heights in Figure 4 is a property of normal curves. This property contributes to the construction of the normal probability density function (III).

3. GRAPHICAL REPRESENTATIONS RELATED TO CONFIDENCE INTERVALS

**Example 1**

Suppose that a sample of size $n = 16$ is randomly selected from a normally distributed population with population standard deviation $\sigma = 2$. The sample mean $\bar{x} = 6$. Construct a 95% confidence interval for the population mean.

First we find the standard deviation for the sampling distribution:

$$\sigma_\bar{x} = \frac{\sigma}{\sqrt{n}} = \frac{2}{\sqrt{16}} = 0.5$$

In Figure 6 below, the sampling distribution shows that 95% of the sample means $\bar{x}$ are less than 0.98 unit away from the population mean $\mu$ (because $1.96\sigma_\bar{x} = 0.98$). Consequently there is 95% probability that the population mean $\mu$ is less than 0.98 unit away from the sample mean $\bar{x} = 6$ as shown in the 95% confidence interval.
Complementary to Figure 6 above, Figure 7 below shows a possible case of the population mean $\mu$. The figure shows that if $\bar{x} = 6$ is at the position indicated by the dot and arrow inside the middle 95% of the sampling distribution, then the population mean $\mu$ is at the position indicated by the other dot and arrow inside the 95% confidence interval.

Figures 6 and 7 correspond to the following formulas:

In the sampling distribution, the middle 95% of the sample means satisfy

$$\mu - z_{\alpha/2} \frac{\sigma}{\sqrt{n}} < \bar{x} < \mu + z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$$  \hspace{1cm} (IV)

Hence if we randomly choose a sample with sample mean $\bar{x}$, then there is 95% probability that the population mean satisfies

$$\bar{x} - z_{\alpha/2} \frac{\sigma}{\sqrt{n}} < \mu < \bar{x} + z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$$  \hspace{1cm} (V)
4. GRAPHICAL REPRESENTATIONS RELATED TO SIMPLE LINEAR REGRESSION

4.1 Regression Line

Example 2

Find the least-squares regression line graphically and numerically for the following data points:

(1, 2), (3, 7), (6, 3), (7, 10) and (8, 8)

First we want to identify a point on the regression line. We know that the least-squares regression line passes through the point \((\bar{x}, \bar{y})\). Since \(\bar{x} = 5\) and \(\bar{y} = 6\), Then the regression line passes through the point \((\bar{x} = 5, \bar{y} = 6)\).

Next we want to use Microsoft Excel to test different lines passing through the point \((\bar{x} = 5, \bar{y} = 6)\) and determine which line is the desired one. The equations of the lines can be written as \(Y = 6 + m(x - 5)\). For example, for the line with slope \(m = 0.5\), we can use Excel to create the graph and the table in Figure 8 below. Note the table shows that the sum of squares \(\sum(y_i - \bar{y}_i)^2\) is 29.5 (in the bottom row).

![Graph and Table for \(Y = 6 + m(x - 5)\) with \(m = 0.5\)](image)

On the top of the table in Figure 8, the value 0.5 for the slope is highlighted to indicate that if the value is changed, then all the others (the graph and the numbers in the table) are changed automatically by Excel. For example, if the slope is changed to 0.6, then Excel gives Figure 9 below. Note the table in Figure 9 shows that the sum of squares \(\sum(y_i - \bar{y}_i)^2\) becomes 28.24.

![Graph and Table for \(Y = 6 + m(x - 5)\) with \(m = 0.6\)](image)

Table 2 below shows the sums of squares \(\sum(y_i - \bar{y}_i)^2\) for the slopes \(m = 0.5, 0.6, 0.7, \text{ and } 0.8\):

<table>
<thead>
<tr>
<th>Slope (m) of (Y = 6 + m(x - 5))</th>
<th>(\sum(y_i - \bar{y}_i)^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>29.5</td>
</tr>
<tr>
<td>0.6</td>
<td>28.24</td>
</tr>
<tr>
<td>0.7</td>
<td>27.66</td>
</tr>
<tr>
<td>0.8</td>
<td>27.76</td>
</tr>
</tbody>
</table>

294
The least-squares regression line is the line having the least sum of squares \( \sum (y_i - \hat{y}_i)^2 \). From Table 2, we see that the sum of squares decreases from 29.5 to 27.66 and then increases to 27.76. Then the smallest sum of squares is 27.66 with corresponding slope 0.7. However if we want the slope to be accurate to two decimal places, then we need to try more slopes around 0.7. Table 3 below shows the sum of squares \( \sum (y_i - \hat{y}_i)^2 \) for the slope between 0.71 and 0.75.

**Table 3:** Slope and Sum of Squares \( \sum (y_i - \hat{y}_i)^2 \)

<table>
<thead>
<tr>
<th>Slope ( m ) of ( Y = 6 + m(x - 5) )</th>
<th>( \sum (y_i - \hat{y}_i)^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.71</td>
<td>27.639</td>
</tr>
<tr>
<td>0.72</td>
<td>27.626</td>
</tr>
<tr>
<td>0.73</td>
<td>27.619</td>
</tr>
<tr>
<td>0.74</td>
<td>27.618</td>
</tr>
<tr>
<td>0.75</td>
<td>27.625</td>
</tr>
</tbody>
</table>

From Table 3, we see that the least sum of squares \( \sum (y_i - \hat{y}_i)^2 \) is 27.618 with corresponding slope 0.74. Therefore the least-squares regression equation is:

\[
\hat{y} = 6 + 0.74(x - 5)
\]

The above representation of the least-squares regression line is a combination of graphs and numerical computations. For simplicity we call it graphical-numerical representation.

Now we discuss the connection between the above graphical-numerical representation and the following formulas for the least-squares regression equation:

\[
\begin{align*}
\hat{b}_1 &= \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sum (x_i - \bar{x})^2} \quad \text{(VI)} \\
\hat{b}_0 &= \bar{y} - \hat{b}_1\bar{x} \quad \text{(VII)}
\end{align*}
\]

In the above graphical-numerical representation, we indicate that the regression line passes through the point \((\bar{x} = 5, \bar{y} = 6)\). This is equivalent to formula (VII). Because if the regression line \(\hat{y} = \hat{b}_0 + \hat{b}_1x\) passes through the point \((\bar{x}, \bar{y})\), then we can replace \(\hat{y}\) by \(\bar{y}\) and replace \(x\) by \(\bar{x}\) simultaneously. Consequently we have \(\bar{y} = \hat{b}_0 + \hat{b}_1\bar{x}\). Hence \(\hat{b}_0 = \bar{y} - \hat{b}_1\bar{x}\), which is formula (VII). Conversely applying (VII) to \(\hat{y} = \hat{b}_0 + \hat{b}_1x\), we have \(\hat{y} = \bar{y}\) when \(x = \bar{x}\).

From formulas (VI) and (VII), we can find \(\hat{b}_1 = 0.74\) and \(\hat{b}_0 = 2.32\). Then the least-squares regression equation is \(\hat{y} = 2.32 + 0.74x\). However based on formulas (VI) and (VII) alone, it is not obvious why this equation has the least squares. Then the above graphical-numerical representation can be used as an explanation.

### 4.2 Coefficient of Determination

**Example 3**

Find the coefficient of determination graphically for the following data points:

\((1, 2), (3, 7), (6, 3), (7, 10)\) and \((8, 8)\)

First we draw the scatter plot of the points and the regression line as in Figure 10 below:
Let \((x_i, y_i)\) for \(i = 1, \ldots, 5\) denote the points (1, 2), (3, 7), (6, 3), (7, 10) and (8, 8), and let \((x_i, \hat{y}_i)\) for \(i = 1, \ldots, 5\) denote the points on the regression line for \(x_i = 1, 3, 6, 7, \text{ and } 8\).

The coefficient of determination is related to \(y_i\) and \(\hat{y}_i\) for \(i = 1, \ldots, 5\). In Figure 11 below, we place the \(y_i\) on the \(y\)-axis, and place the \(\hat{y}_i\) on the right side vertical line for \(i = 1, \ldots, 5\):

Figure 11: Placing \(y_i\) on the \(y\)-axis, and placing \(\hat{y}_i\) on the right side vertical line

Figure 12 below simplify Figure 11 by showing only the \(y_i\) points on the \(y\)-axis and the \(\hat{y}_i\) points on the right vertical line:

Figure 12: \(y_i\) points on the \(y\)-axis and \(\hat{y}_i\) points on the right side vertical line

For the \(y_i\) points on the \(y\)-axis, the deviations from the mean are \(y_i - \bar{y}\) for \(i = 1, \ldots, 5\). In Figure 13 below, the graph on the left connects the deviations from the mean so that the triangles in the graph are right triangles.
For the $y_i$ points on the right vertical line, the deviations the mean are $y_i - \bar{y}$ for $i = 1, \ldots, 5$. In Figure 13 below, the graph on the right connects the deviations from the mean so that the triangles in the graph are right triangles.

![Figure 13: Deviations from the mean](image)

The length of the line segment $AB$ can be considered as a measurement of the variability of the $y_i$ points, and the length of the line segment $CD$ can be considered as a measurement of the variability of the $\hat{y}_i$ points. Then the coefficient of determination can be described in (VIII) below which compares the variability of the $y_i$ points and the variability of the $\hat{y}_i$ points:

$$r^2 = \frac{CD^2}{AB^2}$$  \hspace{1cm} (VIII)

Now we want to discuss the relation between the above graphical representation and the following formula for the coefficient of determination:

$$r^2 = \frac{\sum(y_i - \bar{y})^2}{\sum(y_i - \bar{y})^2}$$  \hspace{1cm} (IX)

For the graph on the left in Figure 13, denote the lengths of the dot lines by $s_1$, $s_2$, and $s_3$ as shown in Figure 14 below.

![Figure 14: Deviations from the Mean](image)

Since the triangles are right triangles, then

$$s_1^2 = (y_1 - \bar{y})^2 + (y_2 - \bar{y})^2$$
$$s_2^2 = (y_2 - \bar{y})^2 + (y_2 - \bar{y})^2$$
$$s_3^2 = (y_3 - \bar{y})^2$$
$$AB^2 = s_3^2 + (y_5 - \bar{y})^2$$
$$AB^2 = (y_1 - \bar{y})^2 + (y_2 - \bar{y})^2 + (y_3 - \bar{y})^2 + (y_4 - \bar{y})^2 + (y_5 - \bar{y})^2$$

That is

$$AB^2 = \sum(y_i - \bar{y})^2$$

Similarly for the graph on the right in Figure 13, we have
Applying the above to (VIII), we have formula (IX).

Note there are some similarities between Figure 11 and the figures produced by Pruzek and Helmreich (2009).

5. CONCLUSION

In the above we discuss several graphical representations for introductory statistics education. After each graphical representation, relevant formulas are discussed to show their connections. By differentiating and connecting between graphical representations and formulas, we can provide more choices or approaches for students to understand statistical ideas. For example, we may choose either graphical representations or formulas; we may start from graphical representations and then conclude with formulas; we may start with formulas and then use graphical representations to explain formulas; we may present graphical representations and formulas simultaneously.

REFERENCE


http://www.amstat.org/publications/jse/v17n1/helmreich.html
CREATIVITY’S ROLE IN THE SUCCESS OF COLLEGE OF BUSINESS STUDENTS: AN EMPIRICAL STUDY

Doreen Sams, Michael Hersh, Shannon O'Keefe, Emily Scarboro, Zachary Tuman and Lauren White
Georgia College & State University, USA

ABSTRACT

Previous research shows that expression of one’s inner ideas is beneficial to an individual’s success. Creativity is a form of expression of one’s individualism that allows a person to break out from the ordinary. A qualitative study (2009) was conducted at the Macquarie University of Australia as to perceptions of college student creativity. The current quantitative study provides a statistically significant baseline of college of business students’ perceptions of creativity’s role regarding college and business successes. Therefore, this study fills a gap in the literature and adds value to pedagogy by extending the Petocz, Reid, & Taylor (2009) study demonstrating the significant divide between knowing what is creativity and seeing its relevance to one’s educational or business successes. Findings from a sample of 79 undergraduates at a small liberal arts university in the Southeastern United States collected from a census of 1,371 College of Business undergraduates, reveals the importance of discussions early in the business core as to creativity’s role in education and business successes.

Keywords: Pedagogy, Art, Creativity, Higher Education.

INTRODUCTION

A major concern across the United States is a continual decrease in creativity exhibited by college students. Most kindergarten to 12th grade curriculums over the past decade in the United States (US) turned their focus away from exploring creative thinking, and turned to a commitment of structure and standards. Math, science, and languages are now heavily emphasized in schools as a means to a high school diploma and eventually success in the work world. Many individuals are starting to believe schools in the United States (US) are “educating people out of their creative capacities” (Garrett, 2010). Though it is sometimes argued that subjects like math and science should be the basis of learning; art in schools is more than painting in art class or singing in music class. Education in the arts sparks innovative thinking and inventive problem solving that enables people to think outside the structured box of what is currently considered core curriculum in most US school systems (Garrett, 2010). Further, research has shown that the arts benefit society by reducing school dropout rates, increasing academic scores, and improving emotional health (Hobbs, 2008).

The research objective of this current study is to fill a gap in the literature by examining perceptions of college of business students studying in the United States as to their perception of the role of creativity and success in college and in business. This quantitative study adds value to pedagogy by identifying a short circuit between terminology and application of a concept considered a pillar of university education.

LITERATURE REVIEW AND HYPOTHESES

For the purpose of this study, the following definitions have been adopted. Art is the “quality, production, expression, or real, according to aesthetic principles of what is beautiful, appealing, or of more than ordinary significance” (Dictionary.com LLC, 2011). Fine arts, is defined as, “artworks that are created primarily for aesthetic reasons (‘art for art's sake’) rather than for commercial or functional use” (Encyclopedia of Arts, 2011). Creativity is defined as “the production of novel and useful ideas” (Amabile, Conti, Coon, Iazenby & Herron, 1996). Although creativity is a nonspecific term, we are all creative to some degree. If we were not, then we would not be able to formulate sentences (Hope, 2010). Exploration of creativity from the students’ perspective is relatively unexplored; thus, the current study reveals important findings that benefit academia. Creativity is a complex and multidimensional construct that is not easily captured. Csikszentmihalyi (1990) suggests that creativity is impossible to define outside of judgments grounded in criteria that are dynamic from domain to domain and across time. Based on the complexity of the term “creativity”, the following is hypothesized.

H1: The majority of college of business students cannot define creativity correctly.
In recent years, studies have been conducted to determine the influences of an art-based education on a student and subsequent class performance and success. Research has shown that an art curriculum helps students become well rounded and perform at higher levels (e.g., receive more academic honors) than students who do not receive an art education (Paige & Huckabee, 2006). For example, a 1995 study demonstrated that academic offerings outside of the core increase academic scores (e.g., students with an art-based education tend to score higher on the SAT) than their counterparts without the same diverse education (Cooper-Solomon, 1995). Students who are involved in art education classes throughout their education (K-12) bolster their academic success in other subject areas including math and history. Research has shown that a background in art education helps students learn and prosper in academia. Smith (2009) says “involvement in the arts is associated with gains in math, reading, cognitive ability, critical thinking, and verbal skills. Arts learning can also improve motivation, concentration, confidence, and teamwork” (Smith, 2009). It should be further noted that exposure to a fine arts education fosters creativity that is carried throughout an individual’s life and can help him or her in their endeavors in the future (Children’s Music Workshop, 2006).

It should also be recognized that participating in hands-on or fine arts education in Kindergarten to 12th grade (K-12) provides students with the tools to express creativity. When students express their creativity, students are thinking outside of the box to solve problems in a manner that may be different than what is taught in core courses. Students become well-rounded individuals through arts education broadening their horizons and through processes (Sports Writer, Inc., 2011). “Advances in scientific studies of the brain are confirming that human intelligence is complex and multifaceted. We can think about the world and our experiences in terms of sight, touch, in sound, in movement and in many other ways. This is why the world is full of music, dance, architecture, design, practical technology, relationships and values” (Robinson, 2001, p. 9) allowing creativity to be developed and expressed.

According to Robinson, “Education and training are meant to be the long-term answers for all of those asking how they are to survive the coming turbulence” (2001, p. 24). However, the right answer does not come if educators misunderstand the question. “All national systems of education are based on two underlying models. There is always an economic model and an intellectual model and there is assumed to be a relationship between the two. In Western systems of education, now meaningful much of the world, the underlying economic model is industrialism; and the intellectual model that supports it is academicism. The problem we now face is that this economic model is outmoded and the intellectual model is completely inadequate. All attempts to improve education by expanding it or by raising standards will fail if these two sets of assumptions are not completely reconstructed” (Robinson, 2001, p. 23). Creativity is seen by many scholars as one of three important attributes of success (i.e., creativity, well-developed ethical stance, and high level of cross-cultural understanding) that are expected to lead to success of college graduates in the 21st century as businesspersons (Petocz, Reid, & Taylor, 2009).

However, a mediating factor has been the steady decline in the amount of exposure of arts-related classes in both public and private schools since 1997. Due to budget cuts, course offerings in the fine arts have been reduced or completely cut from K-12th grade in many states in the United States over the last three decades leaving universities to address creativity on a major scale (Hobbs 2008).

A study was conducted at the Macquarie University of Australia that researched a group of 44 students that were obtaining a business degree at the Division of Economics and Financial Studies (EFS) or the International College of Management, Sydney (ICMS). “The study was developed to gain a better understanding of business students concepts of creativity, ethics, sustainability, and cross-cultural understanding” (Petocz, Reid, & Taylor, 2009). The study further examined how creativity builds a student’s tool-kit for the professional world. This was a phenomenography study (i.e., a qualitative orientation to research that takes a non-dualist perspective and is often used to describe people’s experience of learning and/or teaching situation or their experience of an academic discipline) (Bruce & Gerber, 1995; Prosser & Trigwell, 1997). The participants were both domestic and international business students. Participants were asked the same questions including how, in their own words, he or she defined creativity. From Csikszentmihalyi’s (1990) work, it is evident that perceptions of creativity are domain specific and, therefore, warrant examination across a US sample.

It is difficult for individuals in the United States to see themselves as creative when they pride themselves on being “practical people” (Hope, 2010). Business people who focus on skill development and product development may find creative as a nice sounding philosophical or psychological concepts, but may not recognize themselves as creative individuals (Hope, 2010). Yet, in the United States small businesses created by entrepreneurs are responsible for 70% of all new jobs (Gillibrand, 2010). A study by Golshakoh, Hassan, Gholamreza, Mirsalaldin, Parviz & Alireza (2010) measured entrepreneurial traits using MET instrument (i.e., a creativity questionnaire by Abedi), and analyzed the data. A multiple regression analysis revealed a statistically significant relationship between creativity and entrepreneurship (p<.01, t =5.283, beta 2.671). Based on the Hope (2010) study, the following are hypothesized.
The majority of students in a college of business do not perceive that creativity is an important academic skill. The majority of college students majoring in business do not see themselves as being highly creative.

Creativity is seen as one of three important attributes (i.e., creativity, well-developed ethical stance, and high levels of cross-cultural understanding) leading to the success of college graduates in the 21st century and as businesspersons (Petocz, Reid, & Taylor, 2009). This study extends the qualitative study performed by Petocz, Reid, & Taylor (2009) by conducting a probability quantitative study that allows for generalizability as well as the opportunity to determine small statistically significant differences in the findings and thus reveal a clearer picture of the perceptions of creativity by college of business students.

The majority of college students majoring in business do not believe that the level of a student’s creativity influences college success.

The majority of college students majoring in business do not believe that the level of a student’s creativity influences business success.

Studies have shown that race, gender, and public or private schools relationship to creativity social status has not been examined (“Take Part,” 2008). Social economic conditions are expected to play a role in the opportunities for exposure for an individual to the fine arts; therefore, social economic status is expected to disadvantage those in the lower social economic strata as related to the development of creativity and thus success in college. Therefore, the researchers for this study examined socioeconomic factors.

The majority of college students majoring in business believe that a child’s family’s social economic status influences the development of his or her creativity.

METHODOLOGY

Primary data was collected to identify the self-perception of students in the college of business of a small liberal arts university in the Southeastern United States as to their perceptions of personal levels of creativity and importance of creativity to college and business success. The subject university for this study, like many others address creativity as a vital part of their mission:

“… a commitment to scholarly and creative work to enhance instructional effectiveness …”

The unit of analysis for the research study was individuals seeking a business degree at a small liberal arts university in the Southeastern United States. The population was 1,371 undergraduate students. Therefore, the appropriate sample size for a probability sample was figured to be 73. The sampling frame came from the college’s Institutional Research Department. The survey was conducted by putting a link on the university’s home page and sending an email to all college of business undergraduate students through the university’s list serve soliciting their participation. Seventy-seven (77) usable survey responses were obtained. SPSS19® statistical software was used to analyze the data.

Respondents were first asked to come up with their own definitions of art and creativity. This process provided the research team a clearer picture as to the degree of understanding of these concepts by the respondents. Later in the survey instrument definitions were provided to add clarity to avoid responses based on misperceptions of these two important concepts.

ANALYSES AND FINDINGS

Hypothesis #1 (majority of business students cannot define creatively correctly) was measured with two qualitative questions that engaged the respondents in defining art and defining creativity in their own words. The respondents’ definitions of creativity were compared to the definition determined for this study as to the closeness of keywords in the responses to the actual definition. These responses were also compared to the definition of art to determine if respondents were or were not confusing the two concepts. Interestingly 82.7% could not correctly define art. Yet, the respondents’ definitions showed that they clearly did not confuse art with creativity. The majority of the definitions of art focused on expressing emotions and a personal perception of value. Findings of the content analysis (input into a frequency analysis) revealed that 53.1% of students correctly defined creativity. Thus, hypothesis #1 is not supported. This finding may be a factor if creativity within the framework and context of a body of knowledge (e.g., business education), associated with a field of endeavor such as a college discipline (e.g., economics, finance, management, marketing, etc.), profession, etc., is manifested (Hope, 2010). A majority of the sample was marketing majors (39%) and (20.8) management majors. This demographic may play a role in that these two majors require creativity in innovation and design.
Hypothesis #2 was measured with an overall attitude scale consisting of a four-items six-point Likert scale with endpoints of 1=totally disagree and 6=totally agree. Scale reliability was .73. A frequency analysis was used to analyze the responses to whether creativity is perceived as an important skill. Out of 77 responses to this scale, only 42.9% agreed that creativity is an important academic skill relative to success in college. The hypothesis that college of business students do not perceive that creativity is an important academic skill was supported. Further, respondents were asked to identify the courses they felt that creativity was needed for them succeed. No one course offering stood out, although management information systems and marketing were revealed to be perceived to have a significantly higher need for creativity than any of the other courses offered in the sample school’s college of business. Those who responded with agree are reported in Table 1 below (no totally agree responses):

Table 1: Creativity Relevant to Course Success

<table>
<thead>
<tr>
<th>Accounting</th>
<th>Business Communications</th>
<th>Economics</th>
<th>Finance</th>
<th>Management</th>
<th>Management Information Systems</th>
<th>Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5%</td>
<td>10.4%</td>
<td>6.5%</td>
<td>6.5%</td>
<td>16.9%</td>
<td>23.4%</td>
<td>27.3%</td>
</tr>
<tr>
<td>5 of 77</td>
<td>8 of 77</td>
<td>5 of 77</td>
<td>5 of 77</td>
<td>13 of 77</td>
<td>18 of 77</td>
<td>21 of 77</td>
</tr>
</tbody>
</table>

Prior to the point in the survey instrument where this hypothesis was measured, respondents were given a definition of both art and creativity. Hypothesis #3 was measured with a four-item six-point Likert-type scale with endpoints of 1 = no creativity and 6 = totally creative. These statement responses were summated and analyzed with a frequency analysis to determine an overall level of perception of creativity among college students majoring in business. Interestingly, 15.6% of respondents do not see themselves as being highly creative and only 33.8% agree that they are highly creative. However, 50.6% somewhat agree that they are highly creative. The data supports the hypothesis that college of business students do not perceive that they are highly creative as evidence by the “somewhat agree” responses.

The study went beyond merely measuring whether respondents believed that they were highly creative and if they perceived creativity as an important academic skill to measure whether the respondents believed that the level of their creativity influenced their academic success. Thus, Hypothesis #4 was measured by a one-item (i.e., the more creative a student is, the more likely he or she will be successful in college) six-point Likert scale with endpoints of 1=totally disagree and 6=totally agree. A frequency analysis revealed that only 28.6% agreed with this statement and 48.1% somewhat agreed. Taken together, the majority agreed at some level that creativity does influence academic success. Although the sample came from only college of business students, the question was not specific to college of business student success so the findings should be taken with caution.

Post hoc analysis reveal, through a cross tabulation, that from the respondents’ perspective, college success is not relative to the application of creativity in class involvement. The data revealed that only 7.7% of the sample agreed that the ability to be creative in class applications contributes to success in college.

Hypothesis #5 relative to college of business students majoring in business perceiving that their level of creativity influences business success was measured by a one-item (i.e., a student’s level of creativity influences his or her success in the business world) six-point Likert scale with endpoints of 1=totally disagree and 6=totally agree. Findings of the frequency analysis reveals that of the 79 responses to this scale item, 20.2% agree that their creativity level influences business success, while 46.8% somewhat agree. The findings do not support the hypothesis as greater than 50% either somewhat agree to agree that creativity does have a role in their future success in business.

As to whether the majority of college students majoring in business believe that a child’s family’s socioeconomic status influences the development of his or her creativity, hypothesis #6 was measured with a hybrid-ordinarily-interval Likert-type one-item (i.e., a student’s childhood socioeconomic status influences development of individual creativity) agree/disagree six-point scale. A frequency analysis was conducted and revealed that only 20.8% of the 77 respondents reported that he or she believes that socioeconomic status of a child influences the child’s creativity development. Therefore, the hypothesis was not supported.

To further test this phenomenon, outside arts activities such as participation in private lesson in art, dance or music were examined to determine if the respondent’s own experiences with private art education are relevant to the findings. Based on the fact that most “private” lessons are expensive, the variable was expected to be a good indicator of socioeconomic status. A
frequency analysis revealed that 100% of the sample had participated in some type of private art education lessons (26.5% art, 72.3% dance, and 1.2% music). A clear indication that the respondents are potentially biased based on their socioeconomic status.

OTHER FINDINGS

The sample was representative of the population of the sample college in that the majority of the respondents were marketing and management (49%) majors. The sample was also a representation in that 87% of the sample was Caucasian and 13% were from other races and ethnicity.

As to the concern that few (K-12) grades are offering arts to their students, a series of frequency analysis revealed the following as to participation in art education by members of the sample: (See Table 2 below for details.)

<table>
<thead>
<tr>
<th>Grades</th>
<th>Art</th>
<th>Band</th>
<th>Chorus</th>
<th>Music</th>
<th>Theatre</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-5th</td>
<td>68</td>
<td>18</td>
<td>32</td>
<td>51</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>6th-8th</td>
<td>53</td>
<td>21</td>
<td>19</td>
<td>29</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>9th-12th</td>
<td>21</td>
<td>12</td>
<td>12</td>
<td>11</td>
<td>13</td>
<td>30</td>
</tr>
</tbody>
</table>

The findings in no way reveal whether fewer courses were offered to the respondents during their high school years, but does reveal that participation dropped off significantly the further the respondents progressed in school. Obviously, there are multiple reasons for this occurrence including working part time and going to school. One interesting finding is that theatre participation increased with grade level progression and band increase in middle school years and then dropped off in high school. This finding does reveal that the sample is well versed in their (k-12th) grade years in the arts. This finding highlights a disconnect between understanding the meaning of creative and a failure to clearly seeing the connection to educational and business successes an important finding that warrants deeper investigation.

CONCLUSIONS AND RECOMMENDATIONS

Results of the study show that respondents do not believe that a person’s socioeconomic status influences development of individual creativity. This may be a phenomenon of the study as the majority of the sample comes from upper middle class homes and have had the privilege of taking private art lessons, which are typically costly.

From this study, it can be concluded that college of business students in the sample know what creativity is, but the majority do not see themselves as highly creative. Also, the majority does not see creativity or the opportunity to apply creativity in class assignments as contributing factors to their success in college. There is a lack of connectivity between knowing what creativity is and seeing its role in one’s college success. Yet, as to whether creativity contributes to success in business, respondents do believe it plays at least somewhat of a role in their future business success.

This study empirically supports the qualitative findings that college of business’ students know how to define creativity. Then, it empirically demonstrates the significant divide between knowing what creativity is and clearly seeing its relevance to education and business successes. Thus this study takes the work of Petocz, Reid, & Taylor (2009) a step further. As with most colleges and university, the sample university expounds the importance of creativity. Therefore, the pedagogical disconnect between terminology and relevance should be addressed. As suggested by Petocz, Reid, & Taylor (2009) early course discussions as to what is creativity and creativity’s role as to success in business courses and in the business world is important for the students; however, it is important in addressing the mission of the university. By making the connection early in the business curriculum and reinforcing it through to graduation, students will meet interview situations in which creativity is considered, an important graduate skill, with confidence giving them a competitive advantage over those less informed.

REFERENCES


AN ANALYSIS OF THE CORPORATE ASSESSMENT OF MARKETABLE SKILLS IN THE COMPUTER INFORMATION SYSTEMS CONTINUUM

Donald Caputo
Robert Morris University, USA

ABSTRACT
This research study was originally conducted in three phases. The first phase, which has been updated and expanded, has been redefined with more current and infused data. The first phase dealt only with the prescribed technical skills evaluation of the corporate community, rather than the business-infused skills that form the continuum of this updated survey. Those technical skills which have survived corporate scrutiny are retained, along with the newer skill sets that form the cutting edge of Information Technology, and represent the second phase that initiates this report stage. The major initiative, which reports the findings of a survey of Southwestern Pennsylvania Technology Council business corporations to determine the Information Technology skills deemed most important to the business needs of the corporate entity, was generated through mailed survey forms and short question and answer meetings followed, in selected integrated corporations, with lengthy in-depth interviews. The data was derived from a sampling of more than 127 corporate IT practitioners in widely varied management roles within the Information Technology hierarchy. The third phase of the study examined the perceptions and planning actions of a majority of graduate and undergraduate students, both male and female, who were enrolled as Computer and Information Systems majors at Robert Morris University in the year following the completion of the corporate study. The student surveys gathered information on the student’s perceptions of the competency value combined with enrollment-planning options in the designated skills area. These findings were then compared with the business needs rankings of the corporate entities. The subjective nature of the student segment of the study, which often involved fused and integrated concepts that were not always as apparent as the technological skills, did not lend itself as well to statistical analysis as the corporate results, which were more consistent and measurable.

Keywords: IT corporate skills, Academic/Corporate IT trends, CIS curriculum design

1. INTRODUCTION
Computer Information Technology has become a vital and growing segment of U.S. economic strength, as well as emerging as one of the key drivers for success in the global economy. Strategic advantage in the business arena can be achieved with the coordinated development of a technology-related workforce that is designed to meet employer-defined needs. The synergy of corporate and academic interests is enhanced when the competencies developed in higher education ensures that the emerging workforce is in sync with the business technology-driven sector (Sabol, 2008). Many diverse categories of business competencies and information technology skills are integrated into the fabric of technological innovation. However, rapid changes, additions and evolution of new methods and standards of business practice needed in the job market now dictate a re-evaluation of these necessary competencies and attributes.

Information Technology (IT) has also exhibited rapid and substantial changes amid new patterns of growth. In western Pennsylvania, the IT cluster (Paytas, 2001) contains more than 1,600 firms that employ more than 39,000 workers, and has accounted for 15% of the region’s job growth over the past decade. This rapid expansion is a challenging and ongoing task not only for IT corporate practitioners, but also for educators in institutions of higher education that prepare Information Technology professionals. In order to meet this challenge, data must be continually collected and analyzed to determine the relevancy and the adequacy of its programs and courses (Modzelewski, 2002). While the universities have the primary responsibility of evaluating each program, Information Technology professionals can provide valuable feedback concerning what areas of study and competencies are critical (Smith, 2001). These areas of study and competencies can then be identified as valid entities that must be integrated into the Information Systems programs of colleges and universities.

This phase of the study relates to, and captures, the expertise of professionals who are involved in the Information Technology field. A survey was conducted from a representation of the western Pennsylvania regional technological corporate community with the following objectives:

1. To identify the areas of study in the Computer Information Technologies that exist in a process of changing requirements, as assessed by field professionals.
2. To determine which specific categories and competencies are emerging as growth areas requiring increased personnel and corporate resources.
3. To determine which specific categories and competencies are emerging as declining growth areas requiring less personnel and corporate resources.
4. To identify the specific skill areas that are considered to be essential to the business needs of the corporation, and thus, by extension, those qualities that are most highly-prized in the selection of candidates for employment.

The next phase of the study attempts to determine the student perception of the values of the skills available to them through study in the courses at the university level. Students completed surveys that listed the same set of competencies and skills that were rated by the corporate IT respondents. The students were asked whether they had already taken courses in specific skill areas, or whether they planned to take the skills during their tenure at the university. Finally, each skill was rated by the student as one that would be considered “essential” to their future job needs. This final response was the criteria that was used as the basis of comparison to the corporate view. Students were not made aware of the ratings of the corporations prior to completing the survey.

The gathering and evaluation of such information could be of value to the following institutions and individuals.

1. Information Technology departments in colleges and universities as a means of providing reliable information upon which educators can base decisions regarding modifications in curriculum and programs.
2. Information Technology departments in business, industry, and education as an aid in determining standards for the selection and education of their personnel.
3. Students enrolled in Information Technology programs.
4. Individuals employed in Information Technology or students expecting to enter the field within a short time frame who can benefit from an analysis of essential skills with the possibility of being motivated toward self-improvement and preparation for advancement.

2. ASSUMPTIONS

This study is predicated upon the following assumptions:

1. Those individuals surveyed are a representative sample of Information Technology practitioners nationally.
2. The Information Technology professionals surveyed are currently using or have used the information skills and business intelligence in their functional role.
3. The individuals surveyed can identify their needs in relation to Areas of Study and Competencies in Information Technology.
4. A survey of Information Technology professionals is crucial to the revision and development of higher education programs if such programs are to service the needs of students and working professionals.
5. The academic survey was comprised of graduate and undergraduate male and female students that were enrolled in one or more of the courses of study leading to an Information Technology degree at the graduate and undergraduate level at Robert Morris University.
6. The Doctor of Science program in Computer and Information Technology at Robert Morris University was not included in the study.

3. DEFINITION OF TERMS

For the purpose of this research, the following terms will have the meanings indicated below.

**Information Technology:** A term synonymous with Business Information Systems, Management Information Systems, Computer Science, Computer Information Systems, and Information Sciences.

**Categories or functional areas:** A set of interrelated activities performed by Business Information Technology professionals in attainment of the expectations imposed by job requirements.

**Competencies:** Specific knowledge, skills and abilities needed by Business Information Technology professionals for the effective performance of their respective functional role.

**Fused competencies:** Computer fusion disciplines that do not have a single specific skill associated with mastery of the subject matter (i.e. “Cloud Computing”).

306
4. POPULATION

The total population from which the data was drawn for this study included professionals who are involved with Information Technology in business, industrial, governmental, and service organizations in southwestern Pennsylvania. Due to the prominence of health care organizations in this geographic area, they constituted the largest number of non-profit responders in the survey. This includes over 1600 corporations within the Pittsburgh Technology Council (PTC) and the Association for Information Technology Professionals (AITP). The geographic area of this population included the city of Pittsburgh and Allegheny County as well as surrounding western Pennsylvania counties including Washington, Butler, Beaver, Westmoreland and Armstrong. This population is expected to provide sample statistics that would have some meaningful relevance for IT professionals and organizations in other urban areas in the United States (Mitchell, 2006). The sample of the student portion of the survey, as previously noted, consisted of 461 RMU Computer Information System majors. This is a majority of the population.

5. DATA COLLECTION AND RESEARCH SAMPLE

In order to meet the objectives of this study, it was necessary to collect, analyze, and summarize empirical data. The questionnaire is described in the following tract.

The questionnaire designed in three main parts was utilized to meet the study objectives. Part I consisted of a Personal and Corporate Profile designed to collect data about the background, experience, corporate hierarchical level, IT service, degrees attained and current professional status of the respondents. Part II consisted of a Program Profile and included questions concerning academic curriculum. Part III involved a Competency Profile developed to elicit information concerning the expected growth or decline of competency categories and specific skills associated with Information Technology. The most recent study period was concentrated in 2008, 2009 and 2010. Whenever possible, follow-up calls or on-site visits were made to enhance the validity and response of the instrument. Of the total questionnaires mailed or given on-site, 137 were completed and returned. These data became the basis for the analysis of data and are referred to as the sample for this study. The number of corporations surveyed in this sample was 114. In a few cases, those corporations having large and diverse IT departments with multiple supervisors and managers in various departments or divisions provided more than one response per corporate entity. Each respondent rated the IT categories and competencies as essential areas in a positive growth curve, or in a negative growth curve. A current and short-term horizon view was taken for the growth pattern (Ware, 2002).

Three categories of corporate dimension were employed for the study. Dimension 1 corporations were those with less than 100 employees. Dimension 2 corporations maintained between 100 and 999 employees. They were generally rapidly growing entities that often maintained multiple sites in the local area. Dimension 3 corporations represented those firms that were often multi-national, multi-divisional and multi-sited in nature. They range in employee force from 1,000 to 142,000. This broad range of corporate samples ensured that the data was derived from as many sources as possible.

The broad competency categories that were studied are:

1. Network Administration
2. Windows Development
3. Web Development
4. Database Systems
5. Systems Development
6. Office Software
7. MultiMedia/Graphics
8. Miscellaneous (Fused) Competencies

Within most of the categories, multiple skills were represented. As an example, under the area of study category for Windows Development, many programming languages were listed (such as C++, Java, Visual Basic, and other current software). Each specific skill was rated for all categories except outsourcing, where the respondents preferred to answer in terms of the broad category, rather than each individual skill. By numbers, 31 specific competencies were examined.

A large majority of the eight categories and skills (with a few exceptions) in the areas of study relate directly to courses offered within the curriculum of the Information Technology and Computer Information and Systems department of this university, and many other universities. It is not intended to be all-inclusive.

One particular subject clearly pointed the way toward the newer direction of fused corporate Information Technology endeavors. Business Intelligence, an almost unknown concept in 2005 when the first surveys were conducted, proved to be the
harbinger of the newer fused corporate ideas springing from the business IT world. Previous small-scale surveys conducted by this university indicated that corporate Information Technology managers recognized a potential area of study that would be of major value to their corporations. This category was suggested as an addition to the original list by a majority of the corporate community participants, and thus is included in the survey. It is an elusive skill to categorize, and perhaps not easily meshed into the curricular offerings of the modern higher education system. It is not a single-entity skill, but rather a fusion or combination of assets, insights, capabilities and processes adaptable to the Information Technology discipline. For clarity and standardization purposes, the definition proposed to the Business Information Technology community by this researcher is that “Business/Information Intelligence is the ability to fuse corporate business goals and objectives with relevant and powerful technological processes.” The course is now taught by the university under two separate course titles, but wasn’t in the curriculum at the time of the corporate study. By any measure, it is regarded as a coveted, highly desirable asset for any IT employee to possess (Smith et al., 2001).

6. FINDINGS

<table>
<thead>
<tr>
<th>Competency Category</th>
<th>Competency Skill</th>
<th>Corporate Percent Growth 2005-2010</th>
<th>Essential Skill Ranking 2005-2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Administration</td>
<td>Network Security Planning</td>
<td>78%</td>
<td>76%</td>
</tr>
<tr>
<td>*</td>
<td>Network Infrastructure</td>
<td>61%</td>
<td>46%</td>
</tr>
<tr>
<td>*</td>
<td>Client/Server</td>
<td>32%</td>
<td>48%</td>
</tr>
<tr>
<td>*</td>
<td>Telecommunications</td>
<td>30%</td>
<td>52%</td>
</tr>
<tr>
<td>*</td>
<td>Wireless Technology</td>
<td>38%</td>
<td>22%</td>
</tr>
<tr>
<td>*</td>
<td>Cisco</td>
<td>41%</td>
<td>28%</td>
</tr>
<tr>
<td>Windows Development</td>
<td>Java</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>*</td>
<td>Visual Basic</td>
<td>52%</td>
<td>46%</td>
</tr>
<tr>
<td>*</td>
<td>.NET</td>
<td>38%</td>
<td>53%</td>
</tr>
<tr>
<td>*</td>
<td>C#</td>
<td>35%</td>
<td>38%</td>
</tr>
<tr>
<td>*</td>
<td>C/C++</td>
<td>38%</td>
<td>46%</td>
</tr>
<tr>
<td>Web Development</td>
<td>HTML/XML</td>
<td>46%</td>
<td>52%</td>
</tr>
<tr>
<td>*</td>
<td>Javascript</td>
<td>41%</td>
<td>27%</td>
</tr>
<tr>
<td>*</td>
<td>PERL</td>
<td>14%</td>
<td>5%</td>
</tr>
<tr>
<td>*</td>
<td>ASP</td>
<td>30%</td>
<td>18%</td>
</tr>
<tr>
<td>Systems Development</td>
<td>Systems Analysis</td>
<td>19%</td>
<td>57%</td>
</tr>
<tr>
<td>*</td>
<td>Modeling Tools</td>
<td>11%</td>
<td>29%</td>
</tr>
<tr>
<td>*</td>
<td>Case Tools</td>
<td>11%</td>
<td>29%</td>
</tr>
<tr>
<td>Office Software</td>
<td>Database</td>
<td>49%</td>
<td>89%</td>
</tr>
<tr>
<td>*</td>
<td>Word Processing</td>
<td>48%</td>
<td>89%</td>
</tr>
<tr>
<td>*</td>
<td>Spreadsheet</td>
<td>48%</td>
<td>89%</td>
</tr>
<tr>
<td>MultiMedia/Graphics</td>
<td>Flash</td>
<td>12%</td>
<td>25%</td>
</tr>
<tr>
<td>*</td>
<td>Adobe Photoshop</td>
<td>12%</td>
<td>17%</td>
</tr>
<tr>
<td>Database Systems</td>
<td>SQL</td>
<td>70%</td>
<td>51%</td>
</tr>
<tr>
<td>*</td>
<td>SQL Server</td>
<td>43%</td>
<td>39%</td>
</tr>
<tr>
<td>*</td>
<td>DB2</td>
<td>22%</td>
<td>20%</td>
</tr>
<tr>
<td>*</td>
<td>Oracle</td>
<td>78%</td>
<td>55%</td>
</tr>
<tr>
<td>*</td>
<td>Data Mining</td>
<td>70%</td>
<td>51%</td>
</tr>
<tr>
<td>Software Development</td>
<td>COBOL</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>Unix</td>
<td>Linux</td>
<td>44%</td>
<td>31%</td>
</tr>
<tr>
<td>Project Management</td>
<td>Project Manager</td>
<td>65%</td>
<td>66%</td>
</tr>
<tr>
<td>Object-Oriented Skills</td>
<td>General Programming</td>
<td>47%</td>
<td>27%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Competitive Intelligence</td>
<td>68%</td>
<td>76%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Business Intelligence Analytics</td>
<td>81%</td>
<td>88%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Network IT Security</td>
<td>76%</td>
<td>79%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Secure Programming</td>
<td>44%</td>
<td>49%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Geographic Information Systems</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Technological Ethics and Impact</td>
<td>33%</td>
<td>29%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Sharepoint Analysis Integration</td>
<td>41%</td>
<td>30%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>IT Quality Assurance</td>
<td>61%</td>
<td>70%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Open Source Technologies Development</td>
<td>40%</td>
<td>45%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Cloud Computing Integration</td>
<td>59%</td>
<td>65%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Virtualization</td>
<td>40%</td>
<td>43%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Mobile Application Development</td>
<td>37%</td>
<td>40%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Cognos Application to Intelligent Design</td>
<td>29%</td>
<td>26%</td>
</tr>
<tr>
<td>Integration Fused Technology</td>
<td>Health Care Informatics</td>
<td>44%</td>
<td>55%</td>
</tr>
</tbody>
</table>

Table 1: Skill is Considered Essential When Ranked by More Than 50% of Corporations as Such
### Table 2: Skill is Perceived as Essential When Ranked by More Than 50% of Students as Such

<table>
<thead>
<tr>
<th>Competency Skill</th>
<th>Student Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Security Planning</td>
<td>67%</td>
</tr>
<tr>
<td>Network Infrastructure</td>
<td>40%</td>
</tr>
<tr>
<td>Client Server</td>
<td>57%</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>51%</td>
</tr>
<tr>
<td>Wireless Technology</td>
<td>62%</td>
</tr>
<tr>
<td>Cisco</td>
<td>34%</td>
</tr>
<tr>
<td>Java</td>
<td>37%</td>
</tr>
<tr>
<td>Visual Basic</td>
<td>44%</td>
</tr>
<tr>
<td>.NET</td>
<td>52%</td>
</tr>
<tr>
<td>C#</td>
<td>20%</td>
</tr>
<tr>
<td>C/C++</td>
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<td>Health Care Informatics</td>
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In 13 of 20 skill areas (65%), students correctly perceived the value of the skill in accordance with corporate IT management projections. The positive (+) correlations indicate that the student correctly perceived the value of essential skills as ranked by the corporate IT community. The negative (-) correlations indicate that the student incorrectly perceived the value of a skill. The areas not ranked were those that fell below the 50% threshold in the student and corporate rankings, and thus were not included in the final matrix.

### 7. SUMMARY AND RECOMMENDATIONS

The corporate percent growth/decline column indicates the percentage of companies that evaluated each specific competency as a growth area in terms of allocated resources and personnel acquisition.

Business Information Technology management timed their assessments to current and future short-term needs.

Categories of competencies relate directly to areas of study within the curriculum of most institutions of higher education. There are a few exceptions in the Integration Fused Technologies areas. This is likely due to the multi-disciplinary structure of these exceptions since they may not lend themselves to the standard classroom learning integration environment. On the other hand, most corporation IT managers thought that Business Intelligence might not be adaptable to classroom exposition. Still, the high positive responses elicited from corporate management personnel for this subject persuaded the academic community to find a way to integrate it into the IT curriculum as an advanced graduate offering. As previously noted, it is now in the university curriculum.

It is important to note that the motivation for this study was the often-expressed concern of the student that he/she did not have the necessary skills to commence a career in the Information Technology field or that the acquired skills were not the ones that are of current interest to the corporate world. This is a very common reaction throughout the nation’s academic institutions, and can be verified by many studies (Tucci, 2007).

### 8. REFERENCES


“INVOLVE ME AND I WILL LEARN”

Reza Varjavand
Saint Xavier University, USA

INTRODUCTION

One of the unintended, but beneficial, consequences of recent great recession is the realization of the fact that small companies play a significant role in keeping our economy afloat. Big companies seem no longer interested in American market, the American consumers, and the domestic labor market. Many of them earn the lion share of their revenue from overseas market and have transferred their production plants to other countries. Despite the fact that they have made record breaking profit even in these difficult times, they are not much concerned about sharing the fruit of their prosperity, they pay no, or meager, taxes. American people have finally realized that small businesses pay a closer attention to the community and to the domestic market.

In response to the changing educational environment, and under pressure from corporate world, colleges and universities in the United States are augmenting their instructional resources and demanding their faculty to amend their pedagogical approach to reflect the changing needs of market as well as their students. In particular, they are challenged to move their students beyond the boundary of classroom and into the real world through innovative means including community-based projects. The goal is to provide an opportunity for the students to experiment with the real-life business environment by integrating service-learning into curriculum. I believe the university professors can accomplish this goal without weakening the academic rigor. Training students to become a source of professional advices to small business in their community is the key goal of Small Business Project proposed by this paper.

Small businesses have critical impacts on everyday life of the people especially in developing countries. The risk-taking individuals who struggle to overcome everyday challenges usually manage these business entities, but often inefficiently. A variety of challenges are usually created for them because of economic ups and downs, structural bottlenecks, market segmentation, ailing financial markets, runaway inflation, capricious politicians, and incoherent governments. In addition, many of them may not succeed particularly in less developed countries because of one or more of the following reasons:

- Small business owners tend to think that they can do everything by themselves. They don’t think that they need professional services, even if they do, they may not be able to afford them.
- High opportunity costs. Time is very scarce, hence precious for small business owners. Attending training sessions therefore, entails a high opportunity costs for them. In addition, such services may not be available on structured basis because of lack of supporting network and trained staff especially in local communities.
- Inadequate schooling makes it difficult for the small business owners to find professional services that help them to succeed. Even if the useful information is available to them, they may not be able to make use of it. That is why such services must be provided for them most effectively via personal contacts by external sources. The question of delivery mechanism is also another issue that should be addressed by this proposal.

Despite their significant contribution to the economy, scant attention has been paid to economic needs of these business institutions. Only in a few countries governments have come to appreciate the contribution of small businesses and have paid due attention to their plight (See for example, Daniels, Lisa. and Donald. Mead. “The Contribution of Small Enterprises to Household and National Income in Kenya” in Economic Development and Cultural Change, Vol. 47, 1, 1998, 45-71) Efforts to strengthen this important economic sector can be best undertaken through non-government organizations and particularly the universities. The universities can play a pivotal role by developing programs devoted to building partnership with local businesses and by requiring students, especially those majoring in economics and business, to engage actively in community-based projects. These projects are aimed at micro-firms and can be part of the requirements for completion of the students’ degree, course, and/or certification.

This paper is designed to explore the course of actions deemed necessary for the design and the implementation of such projects. It also examines the alternative teaching approach that revolves around service learning, a teaching method that emphasizes community services as an integral part of lifelong learning.
Lots of instructors in business and economic courses are not trained to teach the students a set of analytical tools and skills that are readily available for utilization despite the fact that today's students are very concerned about the usefulness of what they learn in classroom. They are frankly left in the world of abstract and perplexity. The conceptual tools taught in such courses are, of course, intellectually stimulating and useful in long run when students enter the marketplace and face the challenges of real-life. Although, practice is a necessary component of learning, the difficult question is how is the application of the abstract concepts can be practiced prior to entering the business world? And, how the instructors can help students translate the theoretical knowledge into practical uses. Because most university professors pay little attention to this matter, students will not be given adequate opportunity to practice the concepts that not only allows them to learn more effectively but also to retain what they have learned for a longer time.

Passive teaching is perhaps the key reason why many students think what they learn in classroom is abstract and has no relevance to the real life. Researchers have been working diligently in recent years to find out what the instructors can do to transfer their passive teaching into a lively and interactive endeavor. Reading and memorizing alone do not transfer a student into an active lifelong learner, someone who can make a difference. There are many skills that cannot be acquired from lecturing per se; they are obtained best through active student involvements in extracurricular projects, team work, and by trial and error. Accordingly, students must be provided the opportunities to learn by doing. Anecdotal, as well as, objective evidence suggest that application oriented teaching/learning will stimulate students’ interests in taking further courses in business areas and/or majoring in business. Active learning system creates guideline for initiating and implementing semester-long projects that are focused on local business firms.

I. THE KEY OBJECTIVE

The goal of this proposal is to formulate a step by step process for service-learning method of teaching/learning, engaging students with experimental projects, and to develop schemes to assess the effectiveness of business-oriented projects.

Under the supervision of a faculty advisor, the students will be trained to teach the necessary skills to the local entrepreneurs, skills that help them to succeed in today’s competitive environment. By active participation in such projects, students learn how to apply their knowledge, and the analytical tools, and to how establish a momentous relationship with the business people. Teaching the success tools to managers of local businesses enables students not only enhance their own learning, it also helps to elevate the level of welfare for the business people who may be in dire need of support. In broader perspective, students will help to lift the standard of living and further the public awareness of economic and social issues. Meanwhile, they improve the efficiency of the university’s academic resources by stretching them further and utilizing them in a more productive way. Feeling of affection and satisfaction that they have contributed to the community helps students to feel good about themselves and about their education. By participating in such projects, student will actively move beyond the abstract world of classroom teaching and take advantage of the opportunities that allow them to apply their theoretical knowledge to real-life cases.

A participating faculty member is the key element of this project. He/she plays the role of a liaison between various parties involved with this project. He/she solicits the active support of the school’s administrators and colleagues, makes sure that various phases of the projects are executed on time, and will be ultimately responsible for the successful completion of the SBP. Feedback provided by faculty advisors, students, and the business owners selected for this project provide valuable lessons for the participating students, their benefits will continue even after this project ends.

During the first stage of this project, participating students will learn the analytical tools and concepts such as costs analysis, demand analysis, breakeven analysis, basic financial statements, market niches, pricing strategies, and the characteristic of potential customers for the products of the firm they choose to work with, etc. Then, they try to utilize their knowledge of these concepts to provide free consultation to the managers/owners of the local business firms during the later phases of this project. Unquestionably, small businesses can not succeed in today's complicated markets without deep familiarity with such basic skills and a good understanding of the fundamental economic/business concepts such as; average cost estimation and how it may change if a business expands its output, how the profit maximization can be achieved, and how investment projects can be evaluated correctly, and what factors influence demand for their products, the market structure under which they operate, and the consumers they are dealing with.

The SBP provides students, especially those majoring in business/economics and in senior year, an opportunity to put their analytical skills into practice by helping small businesses particularly those that are in financial stress, or in the process of introducing a new product to the market. Students will be engaged in problem solving activities, cost analysis, financial analysis, and marketing activities. By teaching the entrepreneurs the importance of theses concepts, the students help the
entrepreneur to understand the economic environment within which they operate that is so crucial to their profitable operation. They also contribute to the development of human capital in their community. The key elements of this unique entrepreneurial project are:

- **Training/Learning**, the key concepts and analytical tools by students, phase one
- **Consulting**, providing expert advice to the business owners/managers, phase two
- **Promoting**, demand analysis and preparing a marketing plan for the product(s), phase three
- **Assessing**, the outcome of the project and its impact on the selected firms and the community.

II. THE PROCESS:

They could be various methods that can be utilized to achieve the goal of SBP. However, it is the intention of this paper to emphasize business-focused projects. The entire process will be conducted on hands-on basis with extensive attention to experimental learning. The successful implementation of SBP requires the following suggested steps:

1. **Preparation and training**, SBP is open to all students, particularly senior students majoring in business/economics, management and related disciplines. Students can enroll for one upper-level credit hour under SBP course. SBP can be also a requirement for the successful completion of an upper-level regular course. It is essential for the students to update their knowledge of the key concepts for effective consultation. They should be able to utilize these concepts proficiently to make this project credible and their relationship with the businesses that are participating in SBP worthwhile. For this reason, the first couple of weeks of project will be devoted to brainstorming, training, and reviewing the key economic and business concepts. The college of business will offer training, with the assistance of the faculty advisor assigned to this project. The faculty advisor also plays the role of facilitator, fundraiser, guiding source, and coordinator. If necessary, the SBP students can invite other business instructors, or even outside speakers, to help them with training and preparation. The course requirements and the SBP process will also be explained in detail during this phase. The participating faculty will also lay out the timetable for the completion of the other phases of this project. Students who enroll in SBP are expected to have a good understanding of the basics of management, marketing, economic concepts, and financial statements.

2. **Selection of a project/team leader**, selecting a motivated student with proven leadership ability as the project leader. He/she will be in charge of the SBP and reports the faculty advisor and works with other students who have enrolled in SBP as a team. The project leader contacts the people, schedules meetings, and arranges the transportation to and from the business firm. He/she keeps regular contact with other members to make sure that everything is coordinated in advance. He/she keeps track of those who attend the meetings and the progress made, documents every visit, and presents a summary of project after the completion of the project to faculty advisor. The designated project leader may also arrange the fund raising events to
generate money for the expenses related to the project or seek additional funds from school. He is also in charge of keeping track of the costs and saving the receipts for reimbursement.

3. Selecting a business firm, finding a target business firm in the community with unique product and/or in need of consultation is the goal of this step. The overwhelming presence of such business units is usual even in the United States whose economy is dominated by corporate sector. They are usually owned by an individual or families, undeveloped, rely on local market, and are financed by family funds or occasionally by bank loan. They are the intertwined structure of the economy in less developed countries and are often the only productive units in a small town and the major source of jobs for local workers. Managers/owners of these businesses believed to lack adequate education and/or modern business skills. Students can find such firms by visiting the neighborhood, talking to their employer or to other students, inquiring from their parents and their professors. Sometimes, it may be difficult to locate such enterprises or obtain information about them because they are usually small shops producing indoor, they don't advertise their products, have no established brand name, or they are not located in visible venues. Students should search for eligible local companies early in the program by visiting the neighborhood or by talking to the people who may be able to help. Understandably, such businesses may be skeptical of any offer for free services fearful that students may be the agents of government or the information they disclose may be used for tax purposes. They may also think that such services may not render any benefit to their business any way. It is the task of the students to help the entrepreneurs overcome such fear and skepticism by demonstrating the benefits of this program and convincing them that they have nothing to lose by participating in SBP.

The delivery system for consultation services is important to the success of this program. To minimize the cost to entrepreneur, the students should visit the company on location and collect relevant information that help them to diagnose the existing and potential problems and provide advice on systematic basis. After selection of the target business form, the team leader will send a letter to the owner to initiate the contact and explain the project and the process to the owner of the business as well as his intention to visit the business on site and arrange a brief interview with the owner/manager. [sample of this letter Appendix]

4. Consultation and advising, visiting the firm on a regular basis and developing professional relationship between the entrepreneur and the students are the goal of this step. After the initial interview, students meet to formally discuss and analyze the information they have obtained. They, then, decide what method will be most helpful to the particular business they are dealing with and what type of changes the business needs to make. In this phase of the project, students collect the needed information about the firm's operation and start the teaching and consultation. The exchange of information between the entrepreneur and students should be based on mutually acceptable terms with due concern for confidentiality and protection of the vital financial information provided by the entrepreneur. Exchange of information should enhance the understanding for both students and the entrepreneur. During this phase of SBP student collect data about existing and potential market for the firm's product, the socioeconomic traits of the surrounding community, the characteristics of current and potential customers, and the laws and regulations that can have an effect on the business. Furthermore, students should obtain data on the nature of production function and inputs, costs structure, workable marketing strategies, and other information deemed relevant. The collected data will be analyzed by the students at the end of this stage, tallied, and summarized in a report. The report provides a through explanation of the status of the business, detection of any possible problems, and more importantly, recommendations for improvement.

During second visit, students will discuss with the owner what kind of changes/strategies they think will help the business and what they plan to do to accomplish that. Student may also purchase some of the products produced by the firm, or ask for product donation. They can be sold in campus for fund raising purposes. The plan of action designed and prepared by the students should be tailor-made to suite the specific condition of the selected business firm. The different steps of this project can be rehearsed by the students, using role-playing or other methods before actual implementation of different steps to enhance their effectiveness.

5. Outcome Assessment, The purpose of this phase of SBP is to explore the degree by which the business firm has been impacted by the students' efforts. Whereas there is no single method for assessing the outcome of the SBP, students can rely on creative methods to document the progress and the impact of their efforts whether it is in form of improving business performance and its profitability, or enhancing business education. The assessment report contains information about the impact of the SBP program and how it helped the targeted business, comparison of relevant facts and figures concerning market share and revenues in before-and-after format, improvement in financial ratios of the firm, the number of hours spent on each phase of the project, the quantitative data showing the progress made, etc. The report can be supplemented by auxiliary documents such as a video-taped testimonial statement by the owner of the firm about the impact of SBP on his/her business. Outcome assessment report must also contain a statement about the sustainability of the project and if it continues the next semester or next year.
6. **Documentation and written report**, at final stage, a comprehensive written report is provided and prepared for possible presentation at the school or a class, and regional competitions, if students are required to do so. The report should include the title of the project, a profile of each and every students participated in the process, a through explanation of the project including its purpose and its impact, the method of implementation, the outcome, the sustainability of the project, and, how the project was put into practice by the business firm. Everything must be documented using the latest instructional technology, especially visual aids. The report then will be condensed into a number of Power Point slides for formal presentation at school or at the regional competition.

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<th>Chart 2: The SBP Process</th>
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<td><strong>Preparation &amp; Training</strong></td>
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<td>• Teaching key economic, finance, technical tools to students</td>
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<td>• Scheduling, Meetings, Transportation, Tracking expenses, Preparing reports</td>
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<td><strong>Business Selection</strong></td>
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<td>• Written reports, Pictures, Video clips</td>
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**Additional Notes**

Conceivably, students not only learn more by engaging in service-learning they also retain whatever they have learned in classroom much longer beyond the final exam.

**Possible Benefits of SBP**

- **Retention of theoretical knowledge** by providing opportunities for the students to put their classroom knowledge into action.
- **Networking** with business people and the key figures of the community provide students with employment opportunities later on when the graduate from university
- **Fostering** team work, exchange of ideas, problem solving ability, creative thinking, and other personal skills.
• **Contributing** to the community that creates a positive image for the university for being sensitive to the needs of its surrounding communities

• **Good feeling**, the personal gratification that they have contributed positively and that their work has made a difference in the life of others
ACADEMIC ENGAGEMENT RATINGS AND INSTRUCTIONAL PREFERENCES: COMPARING BEHAVIORAL, COGNITIVE, AND EMOTIONAL ENGAGEMENT AMONG THREE SCHOOL-AGE STUDENT COHORTS

Tonya Conner  
Troy University Dothan Campus, USA

ABSTRACT

The purpose of this study was twofold. The first objective was to determine the nature and extent of any differences that may exist between upper elementary, middle, and high school students among the 3 dimensions of student engagement—behavioral, cognitive, and emotional. The second objective was to gain a deeper understanding of students’ preferences of learning and teaching styles through focus group sessions. The goal was to better support educators in identifying best teaching practices and effective instructional procedures that engage students throughout the students’ educational career, therefore, possibly providing an intervention against the high school dropout rate. The engagement ratings and instructional preferences of 93 students in 3 school levels—upper elementary, middle, and high—were examined in this study. Findings of this study suggest there are statistically significant differences between 2 of the 3 primary dimensions of student engagement: cognitive and emotional. However, results indicate there is no statistical difference in the behavioral dimension among the 3 school levels. In addition, findings of this study revealed a strong emotional theme among all 3 school levels. Each group of participants shared a large percentage of comments about emotional connections between students and teachers. Another popular theme among participants is the preference for kinesthetic activities. Each focus group revealed their preference of learning and teaching styles with top choices involving hands-on activities, games, and project-based learning.

Keywords: Student Engagement, Cognitive Engagement, Behavioral Engagement, Emotional Engagement, Active Learning.

INTRODUCTION

Voelkl (1996) suggests one of the most important issues facing educators today is student engagement. Without engagement, students tend to not only withdraw emotionally and cognitively from the learning process, but also physically take themselves away from the school setting altogether (Voelkl, 1996). The costs for this withdrawal are considerably high for both the student and society in many forms, including the lack of productive citizenship. Even worse, dropouts are at risk of unemployment and incarceration, placing additional burdens upon themselves and society (Voelkl, 1996). However, most solutions to the dropout problem support punishments such as revoking a driving license rather than incentives for students to remain in school (Yazzie-Mintz, 2006). Finn (1989) adds the educational system has focused on many interventions to prevent students from leaving school. Many are well intended, but few are based at the beginning of a student’s educational career as a preventative measure when the process to withdraw from school may have begun as early as elementary school.

Statement of the Problem

According to Yazzie-Mintz (2008), high schools in the United States “could adequately be described as having reached crisis level, in terms of persistence and graduation rates” (p. 1). Barton (2005) suggests the high school dropout rate is a “long term process of disengagement that occurs over time and begins in the earliest grades” (p. 14). Too many students are inattentive or disruptive in the classroom, do not participate in the curriculum, and experience low levels of motivation and interest leading to the “emotional and physical withdrawal of students from school” (Voelkl, 1996, p. 760). Students remaining engaged in the learning process are at less risk of dropping out of school; however, school disengagement continues to be a major factor within the educational setting, which researchers are suggesting is an “engagement gap” among students (Yazzie-Mintz, 2006, p. 8). While previous research reveals numerous studies based on engagement at the college level, additional research is still needed among students of K-12 schools (Skalsky, 2009). Fredricks, Blumenfeld, and Paris (2004) point out the “concept of engagement . . . offers several benefits for research and practice . . . and thus may be a key to diminishing student apathy and enhance learning” (p. 82). If educators have a better understanding of student engagement, and at what point students become disengaged, teachers may be able to implement specific strategies and instructional practices to enhance student engagement. Therefore, by keeping students engaged in the learning process, student achievement may increase while the “engagement gap” closes and may provide a possible intervention against the high school dropout rate (Yazzie-Mintz, 2006, p. 8).
Purpose of the Study

Gordon (2003) suggests it is easier for educators to treat the symptoms of the failing educational system with reform rather than digging to the deep root of learning and teaching. He suggests, "If we want improvement for all students, at scale, we’d better think less about new, different reform approaches and more about investing in the necessary capacity to bring about coherent, sustained instructionally focused strategies" (Gordon, 2003, p. 22). Researchers must supply educators with crucial data to support effective teaching practices within curriculum and instruction. It is critical to study student engagement in the school setting in which there is a high emphasis on the learning process and accountability for student achievement. Furthermore, examining student engagement in a well-known setting “brings student voices into reform efforts and into conversations about the structures and practices of individual schools,” (p. 1) among the few studies on high school engagement, stated Yazzie-Mintz (2006), Project Director for the High School Survey for Student Engagement. The results of this current study may lead to improving the learning experience for all students. Finn and Voelkl (1993) explain that the number of studies that treat engagement as a dependent variable is relatively small and considered a serious oversight. Disengagement is a potential risk to all students, not just those of a minority or low socioeconomic status. To gain a deeper understanding of student engagement, the framework of this study is guided by the following research questions:

1. Do differences exist between upper elementary, middle, and high school students in the three primary dimensions of student engagement—cognitive, behavioral, and emotional?
2. According to students’ perceptions of their learning experiences, what specific instructional strategies improve student engagement?

Literature Review

Student engagement is described from various definitions found within the research. For example, Tomlinson (1999) conceptualized engagement as “a magnet that attracts learner’s meandering attention and holds it . . . It means the learner has ‘wrapped around’ an important idea, has incorporated it accurately into his or her inventory of how things work. The learner owns the idea” (p. 38).

In addition, the term engagement has been used synonymously with words such as active, attentive, interest, motivation, and effort (Marks, 2000). However, Ainley, Frydenberg, and Russell (2005) point out a difference between motivation and engagement. Ainley et al. suggest, “Motivation is about energy and direction, the reasons for behavior, why we do what we do. Engagement describes energy in action; the connection between person and activity” (p. 1).

In the National Survey of Student Engagement (2002), engagement is defined as “the intersection of the time and energy students devote to educationally sound activities” (p. 1). Chapman (2003) describes engagement in behavioral terms of willingness to complete required assignments, attending class, and participation in school activities. Furthermore, a description for engagement is offered by Skinner, Kindermann and Furrer (2008): “At its most general, engagement refers to the quality of a student’s connection or involvement with the endeavor of schooling and hence with the people, activities, goals, values, and place that compose it” (p. 494). In addition, Finn (1989) stresses the connection of engagement with his “participation-identification model” highlighting the importance of students “bonding” with school; “if bonding does not occur, the likelihood of behavior problems, including leaving school before graduation is increased” (p. 118). Furthermore, Finn goes on to explain, “students’ active participation in school and classroom activities and a concomitant feeling of identification with school” are positive engagement indicators (p. 118). Fredricks et al. (2004) justify a growing interest due to the presumption of engagement being considered “malleable” (p. 61). Likewise, Skalsky (2009) adds that unlike socioeconomic status and IQ, educators can provide a positive influence toward increasing student engagement.

Dimensions of Engagement

The inventory of definitions for the term engagement are plentiful and found throughout the literature; however, for the purpose of this research project, the comprehensive definition offered by Fredricks et al. (2004) provides an explanation incorporating the three dimensions of engagement: behavioral, cognitive, and emotional:

Behavioral engagement draws on the idea of participation; it includes involvement in academic and social or extracurricular activities and is considered crucial for achieving positive academic outcomes and preventing dropping out. Emotional engagement encompasses positive and negative reactions to teachers, classmates, academics, and school and is presumed to create ties to an institution and influence willingness to do the work. Finally, cognitive engagement draws on the idea of investment: it incorporates thoughtfulness and willingness to exert the effort necessary to comprehend complex ideas and master difficult skills. (p. 60)
Even though the definition clearly divides the dimensions of engagement, Fredricks et al. explain there is no implication to suggest a definitive separation and continue to clarify, “These factors are dynamically interrelated . . . they are not isolated processes” (p. 60). Ainley et al. (2005) agree even though each dimension of engagement has its own specific definition; they are interdependent and cannot be entirely separate. For instance, when students are excited about learning they are considered emotionally engaged, and they are more likely to implement effective learning strategies, thus becoming cognitively engaged. Each dimension shares overlapping concepts. Fredricks et al. agree engagement is a multidimensional concept that can be separated, but also remains intersected in a profound way.

**Behavioral Engagement**

Fredricks et al. (2004) explain behavioral engagement is defined as a complex construct divided into three categories of school participation: (a) positive conduct, (b) involvement in learning and academic tasks, and (c) participation in school-related activities. For example, positive conduct includes obeying school rules, attending class regularly, adhering to norms and avoiding disruptive behaviors (Ainley et al., 2005; Chapman, 2003; Finn, 1993; Finn & Rock, 1997; Fredricks et al., 2004). Furthermore, involvement in learning and academic tasks includes effort, persistence, attention, class participation, asking questions, and conversing with the teacher and other students (Ainley et al., 2005; Chapman, 2003; Finn, 1993, Finn & Rock, 1997; Fredricks et al., 2004; Skinner & Belmont, 1993). In addition, participation in school-related or extracurricular activities may include clubs, sports, or school governance (Ainley et al., 2005; Chapman, 2003; Finn, 1993; Finn & Rock, 1997; Fredricks et al., 2004).

According to Yazzie-Mintz (2006), behavioral engagement captures the ways in which students interact within the school setting through academic and nonacademic activities. He goes on to clarify, “This dimension can be thought of as engagement in the life of the school” (p. 8). Chapman (2003) adds that students actively responding to learning tasks by asking relevant questions, working to solve task-related problems, and participating in relevant discussions with peers and teachers are prime examples of students behaviorally engaged. As stated by Sinclair, Christenson, Evelo, and Hurley (1998), student attendance rates at school are a key factor in behavioral engagement and “highly predictive of nonschool completion” (p. 8). Finn (1989) suggests students must identify with school and take a personal interest in learning. Students who are behaviorally engaged identify themselves with school, will attend school regularly, and arrive to school on time (Finn & Rock, 1997; Voelkl, 1997).

Shernoff, Csikszentmihalyi, Schneider, and Shernoff (2003) used data from a longitudinal sample of 526 high school students across the United States and examined how these students spent their time in high school and the various conditions in which students described being engaged. Shernoff et al. share, “Participants experienced increased engagement when the perceived challenge of the task and their own skills were high and in balance, the instruction was relevant, and the learning environment was under their control” (p. 158). However, the results also indicated students spent one-third of their class time in an inactive state of learning such as listening to a lecture or watching a video and half of class time was spent on somewhat challenging independent work; furthermore, only 14% of class time was spent in class discussions and group activities (Shernoff et al., 2003). Marks (2000) suggests that high behavioral engagement is based on the quality of classroom experiences. Students reported whole group instruction “as relatively teacher-controlled, whereas small group and individual instruction are perceived as relatively student-controlled” (Marks, 2000, p. 160). According to Amburgh, Devlin, Kirwin, and Qualters (2007), active learning encourages critical thinking, self-directed learning, and provide students multiple opportunities to self-assess and revise their own thinking processes to better problem solve.

Kidwell (2010) suggests that active learning techniques encourage engagement by holding students accountable for involvement through specific question and response techniques, cooperative learning groups, and partner discussion, which empowers students to move from passive learning into active learning. Daley, Menke, Kirkpatrick, and Sheets (2008) propose cooperative learning groups provide a more comfortable atmosphere for student discussion and allow students an opportunity to ask questions in a more controlled setting, empowering students to remain engaged within the learning process. Kidwell further explains student engagement necessitates active learning. If students are not engaged in the learning process, every minute spent on instruction, data collection and analysis, and professional development will not motivate students to learn. Dewey (1933/1998) promoted the value of personal experience in learning and proposed a reciprocal relationship between thinking and doing. Dewey’s work laid the foundation for future researchers. For example, Jonassen and Rohrer-Murphy (1999) add that students partake in conscious learning based on the activity theory. The foundation of the activity theory is defined by “the phenomenon that unifies attention, intention, memory, reasoning, and speech” (Jonassen & Rohrer-Murphy, 1999, p. 65). In other words, “Activity theory focuses on the purposeful actions that are realized through conscious intentions. So, [the] activity theory claims that learning and doing are inseparable and that they are initiated by intention” (Jonassen & Rohrer-Murphy, 1999, p. 65).
Furthermore, Skinner and Belmont (1993) share that the correlation results of teacher behavior and student engagement from a study conducted to investigate the reciprocal relationship between student and teacher. The measures include teacher involvement, structure, and autonomy support. Skinner and Belmont go on to explain, “These relations were positive, indicating that children who were more behaviorally engaged subsequently received more contextual support . . . [and] strong empirical support was found for a reciprocal relationship between teachers’ behavior and student’s engagement in the classroom” (p. 577).

**Emotional Engagement**

Additionally, Skinner and Belmont (1993) elucidate that the reciprocal relationship encourages emotional engagement through the student’s perceptions of teachers’ behavior and is directly supported through teachers’ actual behavior among students. Furthermore, Skinner and Belmont write, “When children experience teachers as warm and affectionate [and] providing clear expectations, children feel happier and more enthusiastic in class” (p. 578) leading to building an emotional rapport between students and teachers. Emotions are a key component of student engagement and refer to students’ affective reactions in the classroom such as happiness, interest, boredom, anxiety, frustration, and sadness (Ainley et al., 2005; Fredricks et al., 2004). Students exhibit emotional engagement when they employ positive or negative emotional responses to learning activities (Skinner & Belmont, 1993). According to McCann and Turner (2004), teachers prefer students “to experience positive and pleasant emotions with the hope that these emotions will foster motivation, engagement, and learning” (p. 1697). Jenson (2005) shares, “teachers know that engaged students are usually happier than disconnected ones who have isolated tasks to do, and research confirms that engagement activates more of the pleasure structures in the brain than do tasks of simple memorization” (p. 35).

In addition to emotional responses, some conceptualize emotional engagement as a feeling of investment and identification (Finn, 1989; Voelkl, 1997). Finn (1989) goes on to explain identification as a sense of belonging, feeling an important part of the school body, and finding value in the school experience. Voelkl (1997) adds, “According to this perspective, the person comes to identify with a place or activity structure that may represent certain expectations, values, beliefs, and practices (p. 295). However, Fredricks et al. (2004) argue identification is usually “general and not differentiated by domain or activity. For instance, it may not be clear whether students’ positive emotions are directed toward academic content, their friends, or the teacher” (p. 63). Identification is likely to occur over time when students are active participants during classroom and school-wide activities and when students receive praise, rewards, and acknowledgement. Finn and Voelkl (1993) share, “An internalized sense of identification can, in turn, serve to perpetuate the student’s active participation in class and school” (p. 250). Teachers can influence emotional engagement by appreciating the strengths, culture, and life experiences of their students. Yazzie-Mintz (2006) goes on to say,

> Emotional engagement emphasizes students’ feelings of connection or disconnection of their school—how students feel about school, the ways and workings of the school, and the people within their school . . . this dimension can be described as engagement of the heart. (p. 8)

This idea is reflected when a researcher observed a group of students taking an indirect route back to class to pass by a particular teacher standing at the doorway greeting students. According to Yazzie-Mintz (2008), the students took a longer route just for the purpose of receiving a moment of personal attention. Students look for a connection with an adult or peer, express a desire for engagement through relationship, and want to be acknowledged as an important part of their school community. (p. 1) Shernoff et al. (2003) report emotional engagement can fluctuate based on the flow theory. He explains the flow experience occurs when challenges are balanced, neither too difficult nor too easy. According to Fredricks et al. (2004), “Flow is a subjective state of complete involvement, whereby individuals are so involved in an activity that they lose awareness of time and space. The definition of flow provides a conceptualization that represents high emotional involvement or investment” (p. 63). Sylwester (2006) contributes, “Emotion and attention, the gateway to cognition” (p. 35).

**Cognitive Engagement**

Cognitive engagement is a primary factor in how students go about completing instructional related activities (Yazzie-Mintz, 2006). Tomlinson (1999) states, “Lessons that are not engaging let students’ minds wander. They fail to make the case for relevance because they don’t connect them to what is important in their lives” (p. 38). Based on cognitive and constructivist ideas, making learning relevant and scaffolding learners to a higher intensity of thinking, students are more likely to adapt their learning to predictable and unpredictable situations keeping students consciously thinking and engaged throughout the learning experience (Jones & Weigel, 2009). Using strategies based on the theories of Piaget (1952) and Vygotsky (1978), students who are held to a higher accountability of rigorous learning require support through engagement activities. Chapman (2003)
explains, it is important to identify the levels of interest and attitudes described as affective criteria. As cognitive growth occurs, students are capable of engagement for longer periods. Cognitive engagement can range from simple memorization to the use of self-regulating or strategic learning strategies that promote deep understanding and expertise (Fredricks et al., 2004). Cognitive engagement can be described as “engagement of the mind” (Yazzie-Mintz, 2006, p. 7). According to Koedlin, Ody, and Kouneiher (2003), “Cognitive control, the ability to coordinate thoughts and actions in relations with internal goals, is often required in our everyday life and sub serves higher processes such as planning and reasoning” (p. 1181). In addition, Chapman explains how engagement includes cognitive criteria “to which students are attending to and expending mental effort.” Cleeremans and Jimenez (2001) define learning as “a set of phylogenetically advanced adaptation processes that critically depend on an evolved sensitivity to subjective experience so as to enable agents to afford flexible control over their actions in complex, unpredictable environments” (p. 3). Shanks and St. John (as cited in Cleeremans & Jimenez, 2001) stated, “Human learning is almost invariably accompanied by conscious awareness” (p. 15). Cleeremans and Jimenez add, “We concluded that a significant difference between adaptation and learning is whether or not consciousness is involved” (p. 12).

METHODOLOGY

This research project took place within one city school district consisting of 11 elementary schools, 4 middle schools, and 2 high schools. At the beginning of the 2010-2011 school year, the total student enrollment within the district was 9,296 students. The research participants were obtained through schools with similar demographics of low socioeconomics within the city school district. Students are not linked to any particular school within the district. However, the participants’ school level—upper elementary, middle, or high—is considered a targeted characteristic for this study. Each school level varies among enrollment since this district contains 11 elementary schools, 4 middle schools, and 2 high schools. Enrollment is considerably lower at individual elementary schools since there are so many more elementary schools than middle and high schools located within the district. A total of 585 consent forms were sent home to parents and guardians inviting and requesting student participation. A total of 181 consent forms, approximately 31%, were returned. Of that 31%, 42 parents or guardians of the upper elementary students refused participation of their child. All of the 109 students who were granted parental permission were provided assent forms. After the assent forms were explained to the students, 11 students declined to participate and 5 were absent on the date of the survey. A total of 93 respondents or approximately 16% of the 585 students invited participated in this research study—31 students in each school level.

Quantitative Instrumentation

The National Survey for School Engagement was developed by the National Center for School Engagement (2006) to gain a better understanding of how students relate to school experiences, their attitude toward school, and how to keep students interested in school and the learning process. The survey contains 15 items related to the three dimensions of engagement: cognitive, behavioral, and emotional. This design is cross-sectional allowing for quantitative data collection at one point in time for the comparison of students’ engagement levels and was administered only once. Permission to use the survey for this study was granted. All items were measured on a 1 to 5 Likert-type scale using two separate scales. The first scale was ranked (1) Strongly Agree; (2) Agree; (3) Neutral; (4) Disagree; and (5) Strongly Disagree. The second scale was ranked (1) Never/Almost Never; (2) Rarely; (3) Sometimes; (4) Often; and (5) Always/Almost Always. A behavioral example from this survey is “I come to class prepared.” A cognitive example from this survey is “I am interested in the work I get to do in my classes.” An emotional example from this survey is “I enjoy the work I do in class.” Cronbach’s alpha reliability tests were run on behavioral, cognitive, and emotional engagement. All showed a relatively high level of reliability based on the Cronbach’s alpha test with an exception of the behavioral engagement at .617. However, Nunnally (1967) explains that while Cronbach’s alpha reliability is preferred to be over .7, the range of .6 is acceptable. The reliability for the overall survey was .856, .759 for cognitive engagement, and the Cronbach’s reliability for emotional engagement was .793.

Qualitative Instrumentation

In addition to the National Survey for School Engagement for quantitative data collection, a qualitative approach was used. Skalsky (2009) suggests an interview approach would enhance a student engagement research project providing a broader range of data collection. According to Daley et al. (2008), assessing levels of student engagement may be difficult to measure in quantitative terms; however, one may choose observations, conferences, journaling, and surveys as qualitative options. Therefore, interviews took place through focus group sessions to support student confidentiality. In addition, Kvale and Brinkman (2009) suggest the use of focus groups to support an atmosphere for a “lively collective interaction [that] may bring forth more spontaneous expressive and emotional views than in individual, often more cognitive, interviews” (p. 150). One focus group was established for each school level. The number of participants was 8 in the middle and high school focus
groups and 5 students participated in the upper elementary focus group. These questions were asked to each focus group from upper elementary, middle, and high school. No additional explanations or clarifications were needed.

- How would you describe a good teacher?
- How would you describe a bad teacher?
- What does your teacher do to get your attention and keep you interested in learning while in class?

RESEARCH RESULTS

Quantitative Results

The survey data were compiled and analyzed using SPSS (Version 18) statistical data analysis software. The National Survey for School Engagement consists of five parts. Section 1 asked for students to identify their gender and ethnicity. Section 2 asked for students to list their primary language and secondary language. Sections 3, 4, and 5 included questions about behavioral, cognitive, and emotional engagement. A descriptive analysis included evaluation of examining the descriptive statistics associated with each variable in the study. A total of 93 students responded, 31 students from each of the selected school levels—elementary, middle, and high.

The means for the variables are on a scale from 1 to 25 as there are five questions that address each of the three types of engagement with each question being 1 to 5 points. The means of behavioral, cognitive, and emotional were all relatively high since they ranged from 16.49-20.86 on a 25-point scale. Individual questions from 1-15 were on a 1-5 point scale and ranged from a low of 2.86 on question 6 to a high of 4.49 on question 4.

The first question of this study was to determine if differences exist between upper elementary, middle, and high school students in the three primary dimensions of student engagement—behavioral, cognitive, and emotional. A one-way ANOVA was used to analyze students’ scores among the three dimensions of engagement. The cohorts differed significantly among cognitive engagement, \( F(2, 90) = 2.521, p = .002 \) and emotional engagement, \( F(2, 90) = 6.346, p = .003 \). However, there was no significant difference in behavioral engagement, \( F(2, 90) = 2.576, p = .082 \).

To determine how the means differ, a Tukey honestly significant difference (HSD) post-hoc test was run for evaluation of significant differences (Tables 5, 6, and 7). Tukey HSD post-hoc comparisons of the three levels among emotional engagement group indicated a significant difference between the high school level (\( M = 14.94, [13.51, 16.36], p = .717 \) and the elementary level (\( M = 18.74, [17.24, 20.24] \), \( p = .003 \). In addition, the middle school level (\( M = 15.81, [13.92, 17.69], p = .027 \) indicated a significant difference between the elementary level (\( M = 18.74, [17.24, 20.24] \), \( p = .003 \). The Tukey HSD post-hoc comparisons among the cognitive engagement group indicated a significant difference between the high school level (\( M = 14.68, [13.30, 16.05], p = .052 \) and the elementary level (\( M = 18.00, [16.67, 19.33], p = .002 \).

Mean significant differences exist between upper elementary, middle, and high school students among two of the three primary dimensions of student engagement—cognitive and emotional. The high school participants and middle school participants rated emotional engagement significantly lower than elementary participants. There was no significant difference between the ratings of high school students and middle school students in the emotional engagement group. However, only high school participants rated cognitive engagement significantly lower than elementary participants. Furthermore, there was no significant difference between the ratings of high school participants and middle school participants and no significant difference between middle school participants and elementary participants within the cognitive category.

Qualitative Results

The participants for the focus groups were chosen through a process of self-selection. Because of a lack of participation among respondents from each school level, after students completed the survey, they were asked to return to class if they did not want to participate in the focus group session. A total of 26 participants chose to leave the area and return to class leaving 5 students to participate at the elementary school level. The same procedure was used for the high school and middle school levels. A total of 23 participants chose to decline at the high school level leaving a total of 8 focus group participants. The middle school participants had a total of 10 students willing to participate, but two students chose not to answer any of the questions and remained silent. The second question of this study was to determine, according to students’ perceptions of their learning experiences, what specific instructional strategies improve student engagement? This question was answered based on the perceptions of the participants. The responses represent the preferences of the students. The students’ responses have been categorized according to students’ perceptions on describing a good teacher. Comments were categorized using terminology from the National Center for School Engagement survey based on key words within each of the behavioral,
cognitive, and emotional priori categories. Most comments described behavioral actions based on the students’ expectations of a good teacher, such as “A good teacher helps her students” and “actually does her job and teaches.” Comments based on an emotional relationship between student and teacher was also a major theme according to the respondents. Students made many remarks about the importance of how the teacher shows her feelings toward students. For example, some comments include “loves her students,” “someone you can trust,” and “A good teacher cares.” Only three comments given regard cognitive expectations. Middle school students described a good teacher with more emotional responses. A total of 18 responses were based on an emotional relationship compared to only 6 responses in the behavioral category and 5 responses in the cognitive category. One student stated, “To me a good teacher would be one that comes with a great attitude.” Elementary school students also preferred the emotional category to best describe their preference of a “good” teacher followed by only 2 cognitive responses and only 1 behavioral response. Students shared the comments, “She is nice to me,” and “She listens to me when I have something to say.” The emotional category is the predominant area of focus among all three school levels. Building rapport between teachers and students is a priority among the respondents.

The next topic of discussion was based on the participants’ comments on describing a bad teacher. Again, most remarks fell into the emotional category. One high school student said, “A bad teacher doesn’t care. I had one teacher tell me that if she got fired from her job all she had to do was go somewhere else and get another one.” Another popular theme was teachers that had “favorites.” Some comments shared include “People they like and people they don’t, have different rules.” In addition, “Bad teachers have their favorites.” Furthermore, the same emotional theme ran through middle school and elementary school. These students used these words to describe a bad teacher: rude, mean, unhelpful, and not fun. One student expressed a particular emotional response no other student mentioned: the feeling of safety. This student verbalized, “I want to be in a classroom on the inside. I be [sic] thinking someone could just come in and rob us and I don’t feel safe.”

**Explanation of Findings**

Suhyun and Suh (2007) suggest one of the top six reasons students drop out of school is not getting along with their teachers. This disconnect may be the result of negative emotional engagement or a lack of positive emotional engagement. The results of this study reveal high school participants and middle school participants rated their own emotional engagement within school significantly lower than the elementary participants. Yazzie-Mintz (2006) explains emotional engagement is about the relationships students develop within a school community such as teachers, other adults within the educational setting, and with peers. The degree of emotional engagement depends on the quality, affiliation, and depth of the relationships. Respondents in the upper elementary school level \((M = 18.74)\) rated their emotional engagement significantly higher than middle school participants \((M = 15.81)\) and high school \((M = 14.91)\) participants. This difference may be due to a positive personal connection the upper level elementary students have developed with their teachers over a longer period of time. The upper elementary participants are in a self-contained classroom. This class arrangement means the students keep the same teacher for all core subjects. The students have other teachers for physical education, computer lab, and library classes, but the majority of each school day is spent with the same teacher and peers, allowing for more time to build personal and emotional relationships between students and the classroom teacher. However, the middle school and high school participants change classes and have multiple teachers for core subjects. Less time is spent with each teacher on a daily basis, therefore, limiting the opportunity to build the emotional relationships. Based on the participants’ responses, students at each of the three school levels may desire a positive emotional bond with their teachers. They shared many comments about how bad teachers do not care about their students, treat students unequally by having favorites, and hold grudges against others. Comer (1984) explains, “it is the attachment and identification with a meaningful adult that motivates or reinforces a child’s desire to learn” (p. 327). Cotton (1999) asserts that in many cases teachers’ behaviors may hinder the emotional relationship between the student and teacher without the teachers’ awareness or intention. The subject of behavior was also addressed during the focus group sessions. As participants were asked to describe a good and bad teacher, many remarks fell into the behavioral priori category. However, these remarks were based on students’ perceptions of teachers’ behavioral patterns, not behavioral patterns of the students themselves. High school students had the most statements of all three school levels. Most comments described teachers in behavioral terms. Students referred to good teachers as those that do not yell or scream and will take time to help students. Respondents described a bad teacher’s behavior as one who “yells all the time” and “pays attention to only the good students and doesn’t help the rest.” In addition, middle school respondents state a bad teacher “yells all the time for no particular reason,” “doesn’t obey school teacher rules,” “texts all the time,” and “never listens.” On the other hand, upper elementary students only gave one comment describing a bad teacher as “someone who is unorganized.” These comments may reiterate how upper elementary students relate their emotional relationship with their teachers based on teacher behavior.

When participants completed the National Center for Student Engagement survey, the results indicated no statistical difference in the behavioral dimension of engagement between the three school levels. In other words, participants from all three school levels rated themselves high on the Likert-type scale in the behavioral engagement category. The reason may be based on the
students’ self-reporting of their own behavioral actions. Participants from each school level may have rated themselves higher on the behavioral survey questions since these questions asked about the students’ behavioral actions, not the teachers’ behaviors. For example, the highest Likert rating ($M = 4.49$ out of $5.00$) was section three, number four, “I treat my teachers with respect.” “I come to class prepared” and “I follow school rules” tied as the second highest rating ($M = 4.24$). Each of these statements was rated by how much the participants agreed based on their own personal behaviors.

Skinner and Belmont (1993) bring to mind the intersection of behavioral and emotional components within student engagement. High behavioral engagement is based on the quality of classroom experiences. Engaged students maintain behavioral involvement within the school setting supplemented by a positive emotional climate. Based on the survey results, high school participants rated cognitive engagement significantly lower than elementary participants and the study revealed no significant differences between middle school participants and elementary participants within the cognitive category. Very few remarks were given during the focus group sessions based on cognitive engagement, the area of least discussion. Most comments made were similar to “She knows her students’ strengths and weaknesses,” “She answers all my questions,” and “Good teachers need to understand how each student learns the best and try teaching different ways.” These remarks segue into the final question during the focus group sessions, “What does your teacher do to get your attention and keep you interested while learning in class?” A total of eight priori categories were established based on the comments given by the respondents. Comments were then grouped accordingly from each of the three school levels. The priori categories consisted of visual learning, aural learning, kinesthetic learning, rigor, relevance, collaboration, technology, and other. The most common theme between all three school levels was kinesthetic learning. The participants chose “hands-on” activities as the most popular choice to remain interested in learning. The high school participants’ remarks fell into all categories with the exception of aural learning which may be considered a more passive type of learning style. Collaboration, visual learning, rigor, relevance, and technology all had approximately the same amount of choices ranging from three to five comments. The middle school participants chose kinesthetic learning with the most comments. The collaboration category received two choice comments; visual learning received one choice, while aural learning, rigor, relevance, and technology received no choices at all. The upper elementary respondents had the least to say with all comments given to kinesthetic learning, while no other priori category received any comments.

Increasing Student Engagement

Student engagement can be increased in several ways. Brewster and Bowen (2004) explain positive teacher support fosters emotional engagement when teachers listen to, encourage, and respect their students. As levels of teacher support increases, students’ perceived school meaningfulness increases fostering student engagement (Brewster & Bowen, 2004). In addition, Skinner and Belmont (1993) add that students who believe they receive low levels of teacher support also report lower levels of engagement. Another way to promote student engagement is to encourage extracurricular activities and leadership roles within the school setting. Building positive relationships with teachers and peers increases motivation, helps to develop positive behavior choices, and improves academic performance (Jones, 2008). The National Center for School Engagement (2006) suggests the 3As as a necessary framework for promoting school engagement: (a) attendance—reducing absences; (b) attachment—establishing positive connections throughout the school and communities; and (c) achievement—ensuring students have the tools and strategies needed to complete coursework. To promote student engagement teachers can make instant changes in some areas, while other areas may take more time for both teacher and student to develop new habits and skills. As mentioned before, students will not do their best if they feel teachers do not have their best interest in mind. Building a positive school and classroom environment and taking an interest in students as individuals will lead to improved student engagement. Once teachers begin to learn more about their students, teachers are then able to provide more personalized teaching for students with various learning styles. This change may lead to differentiated instruction based on learning style, background knowledge, and cultural differences. In addition, providing material designed with rigor and relevance in mind keeps students challenged and gives them an opportunity for a more personal investment when students are interested and connected to a topic they may have experience with (Jones, 2008). Kinesthetic learning strategies are based on movement. Jenson (2003) suggests “Your brain gets a thrill when your body’s not still” (p. 55). He goes on to explain that movement actually engages the cerebellar learning system within the brain. In addition, kinesthetic activities include learning by doing or active learning. Many students refer to this as hands-on activities. Allowing students the freedom of creativity through music, arts and crafts, games, projects, lab time, and role play keep the body and mind engaged. Kidwell (2010) explains that higher level thinking skills, writing skills, presentation skills and creative problem solving are all conduits for students “to move from passive learning to active learning” (p. 29).

Fleming (2001) explains that auditory or aural learning is based on the premise of learning by hearing. Aural learners prefer to listen, such as in lectures, but also prefer class discussions, debates, and speaking or reading aloud. Visual learners prefer to have pictures, concept maps, graphic organizers, videos, posters, charts, diagrams, graphs, symbols, underlining, and different
color highlighters while learning. While none of the respondents in this study chose aural learning specifically, and very few chose visual learning, all learning styles overlap and auditory and visual learning is found within other learning style preferences. Technology was also mentioned as a preferred learning strategy. However, technology is not considered a specific learning style; it can provide a culmination of many learning styles through auditory, kinesthetic, and visual opportunities. Cooperative learning strategies and collaborative learning strategies are also popular student choices for learning preferences. Prince (2004) defines cooperative learning as working or participating with others toward a common goal versus competing against others toward a common goal and collaborative learning as working with others compared to working independently. These strategies are also a part of active learning when designed around specific learning outcomes and encourages active thinking to engage students in the learning process through discussions and problem solving. Some examples may include think-pair-share, teach-a-partner, read around, jig-saw, and turn-to. All of these strategies allow for interaction among peers (Jenson, 2005).

While students may have a strong preference for a particular learning style, many are multimodal, meaning students possess multiple learning styles and multiple intelligences (Silver et al., 2009). Guiding students with various strategies and differentiated instruction will capture students’ attention and ignite a curiosity to learn (Tomlinson, 1999). Results of the study reveal the importance of teacher and student relationships and educators attending to student differences by providing various strategies and instructional practices keeping the mind engaged throughout the learning process.

Study Limitations

The limitations of this study address the restrictions that may have improved this study in some way. If a similar study is investigated, it may be beneficial to include some of the following submissions:

- The survey instrument, National Center for School Engagement survey, was administered in the early spring of the 2010-2011 school year. Therefore, it would have been interesting to have administered the survey in the fall at the beginning of the school term to see if differences exist during the school year.
- It would have been more interesting to survey the teachers of each of the participating students to compare ratings and provide another level of control in the study.
- Survey and focus group interviews were used to gain insight from students in their behavioral, cognitive, and emotional engagement levels. Additional methods such as researcher observations would have given more comprehensive results and provided another means to evaluate self-reports on both the assessment and focus group responses.
- The survey instrument asked students to rate their engagement, but did not address why they are, or are not, behaviorally, cognitively, and emotionally engaged in their learning environment. The “why” or “why not” would have been helpful in addressing engagement concerns.
- It may have been helpful to have expanded the study to include early childhood students to gain insight on the perceptions of the youngest school age students.
- It may have been helpful to have included participants from other school districts found in and out of the state to increase reliability.

Recommendations for Future Research

For many reasons, scholars may continue to explore their own topic of relevance or at least connect research ideas to other areas of interest. In addition, other researchers may choose to investigate the topic from a different point of focus. The researcher of this study chose to share a few suggestions for future research.

- It would be interesting to see if teachers report the same engagement levels on their students as the students report on themselves.
- There is a need for participant observations that focus on student engagement in each school level.
- There is a need for a longitudinal study that focuses on student engagement in each school level.
- It would be helpful to include private schools in future research on student engagement.
- There is a need to study the amount of time students can remain engaged in activities and how many tasks they are capable of accomplishing in a given time period based on brain research.

REFERENCES


WORKING WITH MINORITY PARENTS AND THEIR CHILDREN WITH DISABILITIES: ARE PARENTS SATISFIED?

Lawrence K. Ametepee¹, Beatrice Adera², Susan Abu³ and Garcia Farquharson¹

¹Southern Illinois University, USA, ²West Chester University, USA, ³Texas Woman’s University, USA

ABSTRACT

According to the United States Census Bureau (2010), the nation’s population of children is expected to be 62% minority by 2050. In 2005, about 40% of youth who received services under the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) were students from culturally and linguistically diverse backgrounds (U.S. Department of Education, 2005). As the number of students from culturally and linguistically diverse backgrounds increases, the need increases for educational practitioners to meet the diverse needs of students and their families by learning culture-specific information about families from other cultures. This information can be used by the practitioners to work effectively with their students and the families of the students (Lynch & Hanson, 2004). This review analyzes the extent to which minority parents are satisfied with the services they and their children receive from educational professionals in terms of demonstrated cultural sensitivity in planning and service provision. It also extends the growing literature on major strategies for promoting effective cross-cultural collaboration. Implications for practice, policy, and research are also discussed.

Keywords: Minority Parents, Students With Disabilities, Satisfied, School Partnerships, Collaboration, Strategies

OVERVIEW

Multicultural diversity is one of the definitive features of today’s United States population and public education system (Lee, Turnbull, & Zan, 2009). As of August, 2008 minorities (i.e., Black, Hispanic, Asian, Native American, and people with multiracial background) make up one third of the population. Minorities are expected to be the majority by 2042. Also, the nation's population of children is expected to be 62% minority by 2050 (United States Census Bureau, 2010).

In 2005, about 40% of approximately 6.6 million youth who received services under the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) were students from culturally and linguistically diverse backgrounds. These groups included American Indian/Alaska Native (2%), Asian/Pacific Islander (2%), African American (20%), and Hispanic (16%) (U.S. Department of Education, 2005). As the number of students from culturally and linguistically diverse backgrounds increases, the need increases for educational practitioners to meet the diverse needs of students and their families by learning culture-specific information about families from other cultures. Educational practitioners can use this information to work effectively with their students and the families of the students (Lynch & Hanson, 2004). Currently, research has indicated that African American and American Indians are overrepresented in special education programs due to the incompatibility of their culture orientation to that of the white majority (Zhang & Katsiyannis, 2002). This situation is worsened by the fact that only about seven percent of the members of the American Speech-Language-Hearing Association (ASHA) are from a racial or ethnic minority, and less than six percent are multilingual (ASHA, 2004), for example. ASHA is an association that cares about the plight of minorities in the country. It has established knowledge and skills needed for culturally competent service delivery by speech-language pathologists (Bellon-Harn, & Garrett, 2008).

It has been documented that minority families view their cultural beliefs as the foundation for raising their children (Machamer & Gruber, 1998), adjusting to having a child with a disability (Waldman, Perlman, & Swerdloff, 2008), and receiving or accepting community support (Kane & Houston-Vega, 2004). With these in mind, general and special educators must recognize that there are many obstacles when fostering relationships with minority families who have a child with a disability (Pewewardy, 2002a) and teaching minority students with disabilities (Mihesuah, 2003). Thus, educators need to work with minority families who have children with disabilities to ensure that their cultural backgrounds are respected and supported (Peterson & Montfort, 2004).

Parent-Professional Partnerships in Special Education

Federal law mandates that parents should be involved in special education. Further, recent reauthorizations of federal special education law re-emphasize it. The amendments to the Individuals with Disabilities Education Act (IDEA) of 1997 specifically state the role of parents in designing and implementing special education services. Without a doubt, the federal laws aim at ensuring full satisfaction for parents. Parent satisfaction with the special education system has been studied to facilitate...
development of practices that promotes the support and participation of parents and families (e.g., Filer & Mahoney, 1996; Freeman, Alkin, & Kasari, 1999; Plunge & Krotchwill, 1995; Rynack, Downing, Morrison, & Williams, 1996). The results of the studies can also be used to inform educational policy and to shape how services are designed and provided. In the past, research emphasized recruiting parent participants based on the disability of the child receiving special education services (i.e., parents of children who have learning disabilities). Currently, this has to change, however. Future studies of parent satisfaction with the special education system should be designed to examine combinations of specific factors within the range of services, needs, and local implementation issues that exist across the nation (Zionts, L., Zionts, P., Harrison, & Bellinger, 2003). It is also evident that most existing studies of parent satisfaction have not reported the ethnic composition of their samples. Those that have reported this information have been conducted with mainly Caucasian participants (Zionts et al., 2003).

The purpose of this study was to analyze the extent to which minority parents are satisfied with the services they and their children receive from educational professionals in terms of demonstrated cultural sensitivity in planning and service provision. Currently, research (including reviews) in this regard are limited. Also, this study intended to analyze some major strategies for promoting effective cross-cultural collaboration. Research has indicated that high-quality, diverse collaborative teams enrich both the service delivery process and the potential effect of programming.

METHOD

Articles selected for this review met several inclusion criteria. First, they had to have been published in a peer-reviewed journal. Second, the study had to be on educational professionals working with minority parents and their children with disabilities. The keywords used in the database searches (and their combinations) are as follows: professionals, minority parents, satisfied; minority parents, students with disabilities, strategies; culturally diverse families, school partnerships, satisfied; students with disabilities, diverse families, satisfied; cross-cultural collaboration, students with disabilities. Articles used in this study are accessed from the EBSCOhost search engine and the ArticleFirst (First Search), Academic Search Premier, and ERIC databases. Articles on educational professionals working with minority parents and their children with disabilities from 2003 to 2010 were included.

MINORITY PARENT-PROFESSIONAL PARTNERSHIPS IN SPECIAL EDUCATION

Recent studies have documented minority parents’ satisfaction/dissatisfaction with services they and their children with disabilities received from educational professionals (e.g., DeCastro-Ambrosetti & Cho, 2005; Duncan, 2003; Norwich, Griffiths, & Burden, 2005; Zionts et al., 2003). First, DeCastro-Ambrosetti and Cho (2005) conducted a study which involved 160 secondary education preservice and inservice teachers enrolled in education classes. Because the study focused on issues relating to family involvement and cultural diversity, the authors chose to survey five education courses. Two of the courses were multicultural education courses and three were courses that had family involvement strategies, as well as diversity components embedded within the curricula. The ethnic distribution of the respondents was 59% majority and 41% minority ethnic groups. The participants completed an anonymous attitudinal survey. The findings showed that the majority of participants indicated that their attitudes toward working with diverse student populations were positively influenced by taking the courses. Many of the participants stated that they experienced an increased awareness, understanding, and appreciation of other cultures. I agree with the authors' perception that these results could translate into better services for minority students with disabilities and subsequently, their parents' satisfaction.

Second, Duncan (2003) reported on a small-scale qualitative exploration of the experiences of families who had undergone recent conflict with special educational needs (SEN) professionals in the English Midlands. The participants of the study were two Local Education Authorities (LEAs) and ten parents. Two of the parents were black and the other eight were white. They all spoke English as a first language. The research aimed to examine the dissatisfaction between parent and education professionals. The study was concerned with the parents' points of view regarding their pursuit of desired outcomes for their children and the factors that helped or hindered their endeavors. The study found that the parents' negotiation of the SEN system was held by them to be exceptionally difficult and stressful compared to other troubling issues in their lives. My viewpoint agrees with the authors' conclusion that, for parents (including minority parents) to be satisfied with services, LEAs need not only to raise professionals' expertise in SEN, they must also work to align them with the aspirations and values of the parents of children with special needs, which are frequently incompatible with the prevailing ideology of market competition.

Third, Norwich et al. (2005) conducted an action research project involving seven families in five local areas in the south-west of England which aimed to support parents of children with dyslexic difficulties. The families were experiencing problems in obtaining appropriate provision in mainstream schools. The study was on the importance of effective parental partnership and quality inclusive practice for children having dyslexic difficulties. This research is theorized in terms of current ideas about
parent-partnership and theories about parent–teacher relations in terms of the diversity of parents. As part of the study, a development officer worked over two years in the five participating LEAs that were selected to represent a range of professional practices with a mix of urban and rural populations. Results indicated that parents requested for support because (a) they wanted to seek information, (b) they wanted advice about resolving disagreement with professionals, and (c) they were concerned and disappointed about services they received. Clearly, the above points to the fact that the parents were not satisfied with the services provided them and their children.

Last, Zions et al. (2003) did a study which involved the families of 24 African American children. The children were having severe emotional or cognitive disabilities and were receiving special educational services in urban communities. The families were interviewed (using qualitative method of inquiry) about their perceptions of cultural sensitivity shown by the school district. Semi-structured interviews were conducted and analyzed for common themes across families. The six themes that emerged were as follows: (a) respect for parents and children by school personnel, (b) perceived negativity toward child and/or parents by school, (c) need for information and assistance using community support services, (d) desire for greater cultural understanding and demonstrated acceptance of differences by school personnel, (e) issues of quality and training among teachers and other school personnel, and (f) improved teacher–parent and parent–parent partnerships. In addition, for nearly all of the respondents, the level of parental satisfaction was closely related to the feeling that they were respected by the school personnel. I am of the impression that many minority parents and their children are not satisfied with the services they receive due partly to the fact that school personnel do not respect them and their culture.

Recent school projects also reported minority parents’ satisfaction/dissatisfaction with services they and their children with/without disabilities received from educational professionals (e.g., Colombo, 2006; Hosley, Gensheimer, & Yang, 2003). First, Colombo (2006) reported on a project funded by a federal grant by a district in Massachusetts. The district implemented the Parent Partnership for Achieving Literacy (PAL) program. To bridge the gap between parents and teachers, PAL employed a dual approach to increase the overlap of school, home, and community influences by building bridges between mainstream teachers and culturally and linguistically diverse families. The program aimed at enhancing teachers’ cultural awareness and improving the teachers’ knowledge of the strengths and needs of the children and families. On the other hand, PAL workshops, meetings, and informational mailings helped culturally and linguistically diverse families understand the expectations of mainstream teachers and schools. In addition, guest speakers who represented such district programs as English as a Second Language (ESL), Title I, gifted and talented education, and special education were invited. Results showed that the culturally and linguistically diverse parents wanted to be involved in their children’s education. Surveys of teachers have demonstrated an increase in their cultural awareness as measured by the Cultural Diversity Awareness Inventory. Additionally, English and mathematics scores of the district’s culturally and linguistically diverse students have increased slightly. I believe it will be overstatement to say that every minority parent of students with disabilities is willing to participate in their children’s education. However, if some are willing to be involved in their children’s education, educators should willingly and readily give them all the encouragement and cooperation they need to ensure their satisfaction.

Also, Hosley et al. (2003) reported on Amherst H. Wilder Foundation's Social Adjustment Program for Southeast Asians. The program provides a range of mental health services to individuals and families in Saint Paul, Minnesota. The agency implemented two programs funded by the Substance Abuse and Mental Health Services Administration (SAMHSA). The programs were designed to collaboratively select and implement best-practice models. For each project, the program assembled a diverse group of stakeholders to guide the selection and implementation of these models. These stakeholders included individuals from different cultural backgrounds, representatives from different human service agencies and schools, and also parents and youth. Members of both teams consistently rated their satisfaction with the collaborative very highly. Among the identified strengths of the groups were a mutual respect of members and an agreement that all members bring important knowledge to the process.

Based on the lessons learned from these projects, Hosley et al. (2003) made several recommendations related to strategies for promoting effective cross-cultural collaborations. To a great extent, I agree with the authors that the following strategies can promote effective collaboration between minority parents and their children on one side and educational professionals on the other. The following are some of the recommendations:

- The success of a multicultural collaboration is directly related to trust and relationship building, which is grounded in mutual respect for differences in cultural styles.
- These different cultural styles and approaches should be incorporated into all aspects of the collaboration, including the structure of meetings, decision-making, and communication patterns.
Working with Minority Parents and Their Children with Disabilities: Are Parents Satisfied?

- Multicultural collaborations should provide for the full access and participation of all partners and may include conducting meetings and events bilingually.
- Bilingual and bicultural staffs serve as important bridges across communities.
- Active involvement of parents and youth is essential to successful collaborations, as it brings parents' and youths' voices to the table. (p.167)

The authors also emphasized that although building strong cross-cultural partnerships provides challenges, high-quality diverse collaborative teams enrich both the service delivery process and the potential effect of programming. From my point of view, very few people will disagree with the authors that building working relationships among groups or individuals who have not previously worked together is often difficult. Another important challenge mentioned by the authors is in regard to program sustainability and funding. Considering the current global and national economic realities, the issues of sustainability and funding should be given the necessary attention.

In addition, Lee et al. (2009) explored different cultural perspectives using a cultural prism approach, which focused mostly on the Korean and Chinese cultures. The authors, who are from Korea, China and the United States, met and used as the focus of conversation the textbook - *Families, Professionals, and Exceptionality: Positive Outcomes Through Partnership and Trust* (Turnbull et al., 2006). Ideas were synthesized in relation to similarities and differences among cultures, with particular emphasis on the implications for educators in the United States seeking to form partnerships with Chinese and Korean families. The authors found that a cultural prism orientation can contribute to positive interaction built on trust with families from other cultural backgrounds. It can also help to build partnerships that emphasize respecting the cultural differences between and within countries. They found that, the format of the cultural prism could be applied to other cultures aside from Asian. Like Hosley et al. (2003), Lee and colleagues emphasized the importance of trust and respect in minority parents and professional relationships. My believe is that building trust with minority families and respecting the cultural differences between and within countries are key to minority parent satisfaction and their children's better outcomes.

**RESEARCH AND POLICY IMPLICATIONS**

The study offers two implications for research and one for policy in regard to the implementing of effective strategies by educational professionals that can translate into better behavioral and academic outcomes for minority students with disabilities and subsequent satisfaction for their parents. First, more research, especially school-wide research, is needed in the area of strategies by educational professionals that can translate into better behavioral and academic outcomes for minority students with disabilities. A research in these areas will help to inform educational professionals about effective strategies to use with minority students with disabilities and their parents. Second, research should focus on appropriate staff development of school personnel in implementing the strategies with minority students and their parents. This will result in adequate implementation to students and their parents, and better behavioral and academic outcomes for minority students with disabilities.

With regards to policy implication, educators should encourage the implementation of high-quality diverse collaborative teams that enrich both the service delivery process and the potential effect of programming. Utilizing effective strategies by educational professionals can translate into better behavioral and academic outcomes for minority students with disabilities. If there are better outcomes for students, their parents will be satisfied.

**SUMMARY AND CONCLUSIONS**

The purpose of this study was to extend the growing literature on the extent to which minority parents are satisfied with the services they and their children with disabilities receive from educational professionals in terms of demonstrated cultural sensitivity in planning and service provision. For some time now, the few studies available have demonstrated that majority of minority parents of students with disabilities are not satisfied with the services they and their children receive from educators. Research has indicated that high-quality, diverse collaborative teams enrich both the service delivery process and the potential effect of programming.

This review analyzes the extent to which minority parents are satisfied with the services they and their children receive from educational professionals in terms of demonstrated cultural sensitivity in planning and service provision. To a large extent, the information provided by this review is up-to-date. This review also extends the growing literature on major strategies for promoting effective cross-cultural collaboration. To some extent, the analysis has demonstrated that most minority parents of students with disabilities are not satisfied with the services they and their children receive. The analysis also demonstrated that the success of a multicultural collaboration is directly related to trust and relationship building, which is grounded in mutual respect for differences in cultural styles, among others. The information provided by this review will tremendously benefit
students if policymakers utilize it effectively to make policies to develop staff, and improve the implementation of strategies for promoting effective cross-cultural collaboration.

REFERENCES


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THE GLOBAL IMPERATIVE: PREPARING THIS GENERATION FOR AN INTERCONNECTED WORLD

Rodney Davis
Troy University Dothan Campus, USA

ABSTRACT
The graduates of this first decade of the 21st century are entering the workforce facing unique challenges and interesting opportunities. At no time has the world’s economies been so interdependent. Students are not only competing for employment with the kid in the next desk, this year’s graduates, are competing with students from abroad. The tight job market is demanding that students not only consider relocating from rural areas to the major metropoles across the nation but students are looking at jobs in other countries. The idea of graduating from high school and landing a job in the community where one grew up is becoming outdated or at least not very realistic. In addition the types of jobs that are available for this year’s graduates are changing. For many students that lack the skills to take advantage of the different employment market will find it much more difficult to find suitable employment. Entry-level jobs are either being outsourced to other companies that can do the work more efficiently or they are being off-shored to third-world nations where there is an abundant workforce willing to work for half the pay of American employees. Although in no way a guarantee; a college degree is becoming more and more necessary to locate a job that is insulated from the turbulence of these volatile economic times.

Educators are beginning to realize that the “prime directive,” of sorts, under which they have been operating must change. The students with which we work are not like previous generations of students and the conditions under which we work require of us a different strategy. These students have been born into an interconnected world that requires of them a different skill set from previous generations. We are the people who have been charged by society to prepare the next generation with the traditions of the past and the knowledge of the future. It is incumbent upon us that we do our work well as no less than our existence and future depend upon it. The question that must be addressed is what kind of curriculum; what kind of learning environment; what kind of teacher will it take to produce students who can thrive in this global community? We must fundamentally reconsider what it means to teach and lead schools in the 21st century. This paper is directed to those who not only teach in elementary and secondary education but those professors who are teaching in the nation’s colleges and universities. Every educator is responsible for preparing the next generation of workers and doing so in a manner that is consistent with the demands of the world in which they will live. The purpose of this paper is to focus on what it means to prepare students who are globally competent and what it will require of teachers, and the institutions that prepare them.

Keywords: Globalization, Internalization, Inter-Connectedness, Global Competence, Intercultural Connections.

INTRODUCTION
The graduates of this first decade of the 21st century are entering the workforce facing unique challenges and interesting opportunities. At no time has the world’s economies been so interdependent—where a financial crisis in one country or a natural disaster in another country had such an impact on so many other nations. With the world recovering from an economic recession the competition for jobs has been keen. Students are not only competing for employment with the kid in the next desk, this year’s graduates, are competing with students from abroad. The tight job market is demanding that students not only consider relocating from rural areas to the major metropoles across the nation but students are looking at jobs in other countries. The idea of graduating from high school and landing a job in the community where one grew up is becoming outdated or at least not very realistic. In addition the types of jobs that are available for this year’s graduates are changing. For many students that lack the skills to take advantage of the different employment market will find it much more difficult to find suitable employment. The days of getting a decent job with a high school diploma are rapidly disappearing like a dew drop under the summer sun. Entry-level jobs are either being outsourced to other companies that can do the work more efficiently or at a cheaper price or they are being off-shored to third-world nations where there is an abundant workforce willing to work for half the pay of American employees. Although in no way a guarantee; a college degree is becoming more and more necessary to locate a job that is insulated from the turbulence of these volatile economic times.

Educators are beginning to realize that the “prime directive,” of sorts, under which they have been operating must change. The students with which we work are not like previous generations of students and the conditions under which we work require of us a different strategy. These students have been born into an interconnected world that requires of them a different skill set from previous generations. We are the people who have been charged by society to prepare the next generation with the
tradi"ons of the past and the knowledge of the future. It is incumbent upon us that we do our work well as no less than our existence and future depend upon it. The question that must be addressed is what kind of curriculum; what kind of learning environment; what kind of teacher will it take to produce students who can thrive in this global community?

We can no longer deceive ourselves thinking that if we do nothing it will work out on its own; and repeating what we’ve done before will work under these new circumstances. We must fundamentally reconsider what it means to teach and lead schools in the 21st century. This paper is directed to those who not only teach in elementary and secondary education but those professors who are teaching in the nation’s colleges and universities. Every educator is responsible for preparing the next generation of workers and doing so in a manner that is consistent with the demands of the world in which they will live. The purpose of this paper is to focus on what it means to prepare students who are globally competent and what it will require of teachers, and the institutions that prepare them.

GLOBAL VILLAGE

New demands are being placed upon students and therefore these demands are also being placed on teachers and school leaders. It will be up to the educators and the policy makers to reform education so that it will be able to prepare students who can be successful in this new world. John Donne prophetically stated in 1623, “No man is an island unto himself,” and while he could not foresee the lengths to which our countries have become interconnected it underscores the reality that Americans live in a global culture. Globalization is a realization that there are challenges and opportunities that surpass national boundaries. Terrorism, economic recessions, and pandemics, are problems not restricted to one nation, or one part of the world. Everyone is impacted by them and we must all work together to resolve them. Globalization is awareness that human beings share more things in common than can be defined by national boundaries. We cannot live in isolation believing that our actions have no impact on anyone else. Zhao (2009) explains the interconnectedness of globalization by saying, “the welfare of all human beings has become so interconnected and interdependent that no individual, organization, or nation can continue to live prosperously forever while their fellow villagers live in misery.” (p. 167)

Interconnectedness should not be a new concept for anyone. In light of Donne’s statement who among is really self-sufficient? My last meal, for example, was the result of the work of many unknown people. From the people who grew the vegetables and raised the chickens to the people who canned the vegetables and processed the chicken, there were many hands involved to get the various parts of the meal to my dinner table. This does not include the people who loaded the trucks, drove them, and then delivered them to the store. Hundreds of people touched that 99 cent can of green beans and made a living off of it. More than interconnected then, we are interdependent. Interconnected suggests that we can be connected and disconnected without suffering irreparable damage to ourselves or to others. Interdependence on the other hand suggests that we need others and they need us to be successful. Going back to my dinner illustration, any one of the hundred or so people where involved in getting the green beans to my dinner table could have decided to disconnect and that action would have impacted the rest. The entire system would not come to a screeching halt but every other part of the supply chain would have to work a little bit harder or longer to get that can of green beans to my dinner table. Globalization is not really that radical of a concept. It is an admission that I need another person and another person needs me.

Thomas L. Friedman, author of The World Is Flat, explains in his brief history of the 21st century that there are 10 forces that are “flattening the world” and making the interdependence of globalization more obvious. I am not going recite his entire list but instead I am going to present just 3, technology, uploading, out-sourcing. These driving forces are having the most impact on shaping how we connect to other countries and mandate that our schools must change how they are equipping students to thrive in a globalized world.

Technology has immensely changed since the introduction of the first IBM micro computer. It could hardly be called a micro computer when one looks at the tablets and net books of today. But it was a huge leap forward in worker productivity. My first desktop computer was an IBM clone with an 8088 processor. I bought it when I joined the faculty of a private K-12th grade school in Memphis, Tennessee. It came with one 5.25 inch floppy drive and a 10 megabyte hard drive. It was awesome! At the time, I wished that I had one during my college years. It would have really helped with those long term papers. Even though there was no Internet or World Wide Web and my work was completed not connected to a network of other computers it changed how I worked and how I saw my work. Today we no longer work in isolation. Because of fiber optic cables and broadband access we now can collaborate and communicate with people around the world as well as the person across town. The growth and innovation of technology has fundamentally changed how we interact both for work and for pleasure. Prior to the Internet and email, only a few people would have had the resources to communicate with someone from Asia. Now it is something that anyone with a computer and Internet access can do on a daily basis. Technology has removed major barriers for collaboration and created the conditions where people can connect in unique ways.
The software code that makes it possible to upload a document to the Web or attach it to an email message is truly revolutionary. It has made it easier to share documents with colleagues. Now everyone has the capability to be a publisher of their ideas has changed how we are creative. The ordinary computer user became a producer instead of consumers only. (Friedman, 2005) I not only interact with my students in face to face situations, I also upload documents to my course website so instead of copying documents, I can make them available whenever the student wants to access them.

To illustrate Friedman’s 3^rd force driving globalization, the author referred to India becoming the place where American companies outsource their backroom tasks because they can be performed cheaper than doing so in the US. He cited one example, where American airlines were outsourcing their lost luggage customer service to call centers in India. When you call customer service the person on the other end of the phone locates your luggage. As far as you know they are in some office building in the US. The truth is they are thousands of miles away. On a recent trip from Phoenix to Orlando I arrived and my luggage was nowhere to be found. I called the airlines lost luggage hotline. Since the hub for the airline was in Atlanta I mistakenly assumed that their call center was there as well. I decided to ask the person where they were located and in a very pleasant Midwestern accent I was told that they were in Bangalore India! I know that I did not dial an international number, just a regular toll free call. But that simple call was switched to the airlines international call center in India. I was in Florida, my bags it turned out were in Georgia, and the customer service representative was in India. Why use an Indian call center to track passenger luggage? Is it because they are better at locating misdirected bags? Not, at all, it makes good business sense. Backroom activities (such as customer service hotlines) do not produce or generate revenue but they have to be done. Lost luggage locators do not directly produce income for an airline but they are needed and ultimately if the passenger is reunited with their belongings and the process of doing so was not too painful they will more than likely fly with that particular carrier in spite of their inconvenience. Since backroom work is necessary to the company’s bottom line it is wise to find ways to keep the costs of operating backrooms to a minimum. India has a huge labor force just looking for work. They can provide foreign companies with a competent workforce who speak English, often times, better than many native speakers and most importantly they do it for a lot less then if they hired local talent or operated their own backroom. Technology has made this outsourcing possible.

These forces have not created globalization just made it easier to take place. While it may not be a radical concept, it does require a different thought process in order to thrive. We must prepare our graduates with the attitudes that will enable them to take advantage of this new way of engaging people from different cultures. In order for young people to be successful in what Friedman called the new flat world they must understand the issues, challenges and the opportunities that govern the new inter-relationships. They need to be able to sift through much of the misinformation or overly simplified analysis of changing economic conditions that routinely blames the US decline on the growing economies of China and India. To begin to thrive requires everyone to reduce their mistrust and fear of those who do not look, speak, and think like them. “Graduates who prosper in this new environment will be those who leave school with an appreciation of global issues and cultures and an introduction to the new ways of the world.” (Commission on the Abraham Lincoln Study Abroad Fellowship, 2005, p. 6) The Lincoln Commission report set forth a plan for sending 1 million students to study abroad by the year 2010. This purpose has not yet been realized but the message of the report remains true. Those graduates who will experience prosperity to which the report refers will be the ones who understand those universal issues and are able to use the driving forces that created the flat world. For those who are ill-prepared or are unwilling to take advantage of the new ways then the outlook is somewhat less positive. Levine (Progressive Policy Institute, 2005) echoes this prediction by asserting that those students who understand the implications of global economies and international realities will have a leg-up on acquiring jobs. He adds that without this knowledge, “the United States is in danger of putting itself at a competitive disadvantage.” (p. 1) I am not suggesting that we are behind and that it is time to push the panic button. Friedman and others are warning the American public that the conditions are becoming critical and that from a societal perspective we must take steps that will enable our graduates to be competitive in the world market. There are financial implications within the world market but also we must adapt if we are to remain competitive in the marketplace of ideas.

THE GLOBAL IMPERATIVE

“The truth is, we’re in a crisis now, but it is a crisis that is unfolding very quietly. We’re a bit like a person who is sleeping on an air mattress, and the air is slowly coming out—so slowly you barely feel it, until your head hits the cement.” (Friedman, 2005, p. 326) The crisis of which Thomas Friedman refers is the lack of understanding by Americans about the globalization of the world. For more than 300 years we have occupied this land and relished in the knowledge that we were separated from the rest of the world by two large oceans. In the last 20 years the world has built a bridge to us. Not one of steel and concrete but one of fiber optic cable. This technological bridge certainly gives us access to markets around the world and access to our markets from the four corners of the planet but it has done something even more profound. Friedman discusses it in his book; The World is flat, that the playing field has been leveled. Countries, India for example, have been traditionally on the sidelines of
international competition. They don’t possess a great deal of natural resources with the exception of one—a huge and growing workforce—eager to work. They are now challenging America for global knowledge work. What has made this possible is the increased broadband access around the world. Friedman believes that being challenged is not a bad thing for the US. His rationale is that we [the United States] do amazing things when we are challenged. When President John F. Kennedy challenged the nation to put a man safely on the moon and return him home again the nation responded to the challenge and met it in less than 10 years.

But are we entering the challenge having fallen asleep on a leaky air mattress as Friedman suggests? Do we really know what we need to know in order to be a contender in the global arena of the 21st century? According to the Lincoln Commission (2005) “on the international stage, what nations don’t know can hurt them. Whether the region is Europe, Asia, Africa, Latin America, Eastern Europe and the former Soviet Union or the Middle East, whether the issue involves diplomacy, foreign affairs, national security, or commerce and finance—what nations do not know exacts a heavy toll.” (p. v) As sobering as it may seem this recent class of graduates may be unaware of the importance of what they don’t know.

WHAT WE DON’T KNOW

The most recent (2006) Geographic Literacy Study conducted by the GFK Roper Public Affairs and national Geographic Education Foundation showed that Americans have great deficits in their knowledge of geography. The purpose of this poll was to assess geographic knowledge of young adults between the ages of 18-24. In addition to asking the 510 participants (all Americans by the way) what they thought they know about geography they were also asked about current events related to geography and their views on the importance of geographic, technological and cultural knowledge.

The results showed that the participants had limited knowledge of the world beyond their own national borders and place little importance on basic geographical skills. They answered a little more than half (54%) of the questions correctly. Only 40% of the young people surveyed could locate the country of Iraq on a map of the Middle East. This, in spite of the fact, that there was more or less non-stop coverage of the country on nightly news programs at the time. Some might point out that Iraq is far removed from their daily life and so locating it on a map is of no great consequence. A little closer to home, half of the participants could not find New York or Ohio on a map of the United States. Still others (about one-third) had difficulty locating Mississippi and Louisiana on a map even though both states were heavily damaged from hurricane Katrina in 2005 and this too was a regular item on local and national news channels.

So geography is not the forte of this particular group of 20-somethings. When they were asked which language is the most commonly spoken language, 74% responded English rather than Mandarin Chinese. Almost two-thirds knew that the United States is the world’s largest consumer of oil. Nearly the same amount (71%) did not know that the US is the world’s largest exporter of goods. Half of the participants believe that it is China that exports more goods than any other country. Specifically, half of those surveyed stated that they believe it is important but not absolutely necessary either to know where countries are located or to speak a foreign language. What is interesting is that according to the 2007 Phi Delta Kappa/Gallop Poll, 85% of adults stated that it was “very or somewhat important for students to learn a second language, and 70% said that this education should begin in elementary school.” (in Longview Foundation, 2008, p. 4) Therefore what these young people believe is important is in direct opposition to what their parents believe to be important. Levine states, “the stakes for our kids and our nation could not be higher: in the 21st century, like it or not knowledge of the world is no longer a luxury it is a necessity.” (Progressive Policy Institute, 2005, p. 6)

From the survey results we can see that this group is not very well-traveled. Only 30% of the participants had traveled abroad in the previous three years. Less than a quarter of them (22%) possessed a valid passport. Yet when this group as asked about their use of technology the results are really telling. Over two-thirds (80%) say they’ve been on the Internet in the last month. Sixty-percent stated that computer skills are absolutely necessary in today’s world; with 56% saying that Internet skills are absolutely necessary.

I am not surprised by these results. The results should not be a rallying call for those who think more geography needs to be taught in public schools. What this survey should do is to motivate us to become more aware of the world in which we are going to interact. Will their lives be diminished in some way because they cannot locate New York State on a map, only if they do not possess the knowledge of how to find out where it is located with the tools that they do have. These findings are more indicative of the way that this generation of “digital immigrants” uses knowledge. In the days before i-Pads®, smart phones, net books, GPS devices and a host of other computer gadgets, people had to memorize information and count on their brain for data retrieval. Today anyone with the technology can get the information whenever they want and wherever they may be. It is becoming more true that it is not so much what you know as it is knowing where to find the information you need at the right
moment. For earlier generations, being able to recall factoid types of information at a moment’s notice was the mark of a well educated person. Today the hallmark of a technologically educated individual is to know how to “Google” the information you need. Doc Searls, senior editor of Linux Journal said “In the flat new world educational opportunities are limitless, even without help from school, government, churches, or business. Much of what you need to know about; pretty much everything is out there on the Web somewhere.” (as cited in Friedman, 2005, p. 303)

ACHIEVING NECESSARY SKILLS

In 1990 the Secretary of Labor empanelled a committee of business leaders, educators, union leaders, and parents to study and make recommendations regarding the skills that would be necessary for young people to obtain high paying employment. The committee’s work was released in a report entitled the Secretaries Commission on Achieving Necessary Skills (SCANS) just two years later. The report identified 3 types of skills; Basic-reading, oral & written communication, and mathematical; Thinking-thinking creatively, making decisions, and solving problems; Personal-individual responsibility, integrity, and self-esteem. In addition to these skills, the report recommended that the workers of the 21st century would need to be able to work well with people from diverse cultures. (Secretaries Commission on Achieving Necessary Skills, 1992) These identified skills are as relevant today, nearly 20 years after the report was released, as they were then. These skills may be more relevant in the internationally connected world in which we live. This is due to the reality that not having these skills is akin to traveling in a foreign country and not having to local currency.

A New Emphasis on Skills: These skills listed above are not really new. We’ve taught students to be problem-solvers and critical thinkers before. What is different now is that having these skills really can determine the degree to which an individual experiences success. (Rotherham & Willingham, 2009) Having them can greatly expand the opportunities a person might have. The less marketable skills a person possesses, diminishes the opportunities he or she can pursue. Networking and communication are vital skills because many companies are splitting projects between multiple parties. In some cases you might be working with a person who is not in the same building with you but may be in a foreign country.

An Awareness of New Opportunities: This generation of students is so accustomed to using technology in every aspect of their life that they are far out-pacing their teachers. At the same time they are expecting that school will be available to them just like their social networking site and their bank and so on. The idea of instant access and 24 hour learning are not just something on the horizon they are here now. The students are asking; why must I come to a particular place at a specific time to meet with a professor to learn? Some universities are experimenting with open enrollments. This involves the student creating their own program of learning from all of the offerings of the university. Instead of taking a static set of courses that eventually leads to a degree, these students are being allowed to take courses across disciplines and combine them into a personal learning journey that results in a degree. Open enrollment stems from the belief that students should control their own learning and that they should study only those things that will help them achieve their learning goals. This curricular diversity allows the student to have a broader educational background which will allow them to be better prepared to handle the uncertainty of intercultural contact.

Access to New Technology: There is an abundance of new technology available and on the horizon that when harnessed that will revolutionize teaching and learning. Some technology, like the document camera, allows the teacher to display 3 dimensional objects so that the entire class can see. Web cameras are beginning to change how we teach. Instead of having students come to class, they can sit in front of their computer and watch and be seen by their instructor. It may not be the the best way to teach or be a better way to learn from the standpoint of a digital immigrant but it makes sense to the natives. It is becoming more apparent that this technology is beginning to change the conversation about how learning occurs. Those that are not comfortable with this kind of learning environment can resist the movement reshaping the classroom of today but to borrow a phrase from the Borg, “resistance is futile.”

“Helping students develop global competence is vital, so they can, invent a future that appropriately addresses the global challenges. Whether these are the challenges of collectively improve the living conditions of the global poor, of achieving sustainable forms of human environmental interaction, of addressing health epidemics, or of creating the conditions for lasting peace and security, few schools [K-12 or Higher Education] around the world today are equipping students with the skills and habits of mind necessary to collaborate with other across national boundaries.” (Reimers, 2009) True enough schools have not placed a high enough priority on internationalizing the curriculum or in identifying the skill sets that today’s students need to compete. This may be due to a lack of understanding of the importance of this particular knowledge. Educators reflect the will of society and it appears that society has not perceived the importance even though according to the Gallop poll addressed earlier they feel that international exposure is important to their students. The parents certainly have not demanded that money
be spent to upgrade the curriculum in this area. It may also be an issue of a lack of consensus on what skills are needed to be
globally competent. Reimer offers the following list as examples of what a globally competent student would look like.

1. Intellectually resilient
2. Cross-culturally and scientifically literate
3. Technologically adept
4. Ethnically anchored
5. Fully prepared for a future of continuous and cross-disciplinary learning

Trooboff (2007) identified 12 characteristics that employers considered important when they were hiring future employees.

1. Honesty & Integrity
2. Demonstrates a Strong Work Ethic
3. Self-Motivated
4. Listens and Observes Well
5. Flexible and Adapts Well
6. Rational and Logical
7. Innovative
8. Enthusiastic
9. Curious
10. Non-judgmental toward other world views
11. Willing to take risks
12. Recognizes our worldview is not universal

While these skills have value for students who are going to pursue a career with international connections these skills also
have value for any one working here in the US. From Trooboff’s research only characteristics #4; #5; #9; #10; #11; and #12
were impacted by study abroad experiences. Interestingly none of these characteristics can be strictly developed in a school
situation. The proper learning environment, with the help of a motivated teacher, can encourage their growth, though. These
characteristics all culturally transmitted values and are developed through life experiences.

I can already hear the sighs of K-12 teachers saying that these are wonderful goals but they would be happy if they could get
their kids to school consistently, pay attention in school, learn to read, and most importantly make adequate yearly progress.
These skills and commensurate characteristics are great but since they are not measured by standardized tests and it is those
tests that measure the effectiveness of the teachers and schools, there is no or precious little motivation to focus on them.
While I understand this attitude I cannot accept it. Too much is at stake just to give in and surrender to teaching only those
concepts that are measured by a state mandated test. The calling of a teacher no matter at what level (from elementary school
to higher education) is to open the mind of the next generation to the infinite possibilities that lay before them.

Schweisfurth (2006) conducted a study to determine how individual teachers in Canada were able to make global citizenship a
priority in the context of other curricular demands. In her study she found that teachers who believed that it was important were
also the ones that were able to find ways to include it; even in highly standardized curricula such as that of Canada. It came
down to if the teacher perceived that it was important and did not feel as though it was just another task on top of an already
heavy teaching load, then they were able to find creative ways to bring the global content into the curriculum without sacrificing
something else. We can accomplish those tasks that we determine to complete.

“To succeed and prosper in a global economy and interconnected world, US students need international knowledge,
international communication skills, and global perspectives.” (Institute for International Education Study Abroad, 2007, p.5) The
question arises how are the students to acquire these skills when many of their teachers do not have them. Levine
(Progressive Policy Institute, 2005) supports this statement in that only a few teachers have a course relating to international
education and even fewer have studied abroad. Most programs preparing pre-service teachers have a course that addresses
diverse populations and cultures and the focus of these courses is on the diversity within the United States. But few have
developed courses that relate to the world beyond the borders. It is almost as if they do not believe that the world outside of the
border is going to have any impact on them or on their students. How short sighted that is!

WHAT TEACHERS NEED TO KNOW

We are preparing students who may work within the land of their birth but many more will travel to the far flung places of the
world to find employment. The Department of Labor reports that 1 in 5 jobs have an international component today. The degree
The Global Imperative: Preparing this Generation for an Interconnected World

to which we prepare them with an education that has global value will determine their success. Ultimately we must ask ourselves the question, how will our decisions impact the students in classrooms around the country? How will new policies increase access to learning for children growing up in poverty? Secondly, our work is about building capacity within the people of the United States. We will not be able to continue exercising leadership around the world if we continue to focus our efforts inwardly. The education that our children receive must not only provide them with the skills and ability to work at the company down the street from where they live but also must enable them to work successfully with the company on the far side of the world.

In order for this kind of education to become a reality it will require a teaching force that has been prepared to incorporate an international dimension into their instruction and into the assignments that the students complete. Unfortunately too many educators have not had much coursework related to international education or global studies. The pre-service teachers at the university where I teach take two courses-Cultural Diversity and Working with Diverse Populations. The focus of these courses is on the diversity of the students within the United States from an ethnic perspective as well as an academic perspective. This is valuable information for the teacher but it does not prepare them with teaching strategies for including an international perspective in their teaching. This has been a challenge within the US. Multi-cultural education and Intercultural education are often used interchangeably. Yet they address cultural diversity from different vantage points. Multi-cultural education examines issues of diversity from within the country, i.e. the United States, and intercultural education examines diversity issues from the viewpoint of outside of the nation or between nations. Teachers must become globally competent in addition to being effective in the classroom. Omorogie, (n.d.) suggests that there are 5 characteristics of the globally competent teachers and they are:

1. **Professional Preparation:** This preparation included attending a college or university where each program contains an international focus. Teachers will replicate in their own classes what they’ve been taught in their undergraduate and graduate programs. If they have exposure and practice working with teaching strategies that support global education they are more likely to continue that in their own classrooms when they graduate.

2. **Pedagogical Knowledge:** Each teacher must be well acquainted with the various methods used to teach a subject. These strategies must be wielded by someone who knows how to use them in order for them to achieve the desired result. A hammer and a wrench are both tools and can be used to pound a nail into a board. The difference is that the skilled laborer knows when to use the hammer and when to use the wrench. This illustration applies to classroom teachers. They too have knowledge of a variety of tools. Some methodologies work effectively under certain conditions; and less effectively in others. The key for the teacher is to know when they need a “hammer” and when they need a “wrench.”

3. **Subject Knowledge:** No matter how many different instructional strategies a teacher has mastered they will not serve the teacher if the teacher does not know the content. Some teachers are consummate instructors. They know the ins and outs of instruction. Where they fail is that have not mastered the content. Of course if you have not mastered the content, what is the point of teaching? You have nothing of importance to say.

4. **Verbal Ability:** This point is similar to the last one. If one has mastered the strategy and the content but is unable to or poorly communicates the information learning will be limited. I remember during my 8th grade year, just before beginning secondary schooling, I had a math teacher who obviously knew the content but had difficulty making it understandable. I struggled the entire year.

5. **Technologically Competent:** This final characteristic implies that the teacher has the knowledge and ability to incorporate appropriate technology into their instruction as well as the assessment of student learning. Conventional wisdom underscores the value that technology brings to the classroom and it addresses the reality that effective instruction must include it.

What steps can teachers take to pursue global competence? There is no substitute for first-hand experience. Foreign travel (including study abroad, volunteer service, or personal vacation) is an excellent way to learn about another culture. Seeing the culture up close and with one’s own eyes can help the traveler to begin to understand and to appreciate the distinctiveness of the culture. My third-grade teacher was an avid traveler. Every summer she and her family would travel to a foreign country. While traveling she would gather things from the places that she visited to share with her classes. The summer before I had her class, she went to Ireland and so when in social studies we discussed Ireland, she had plenty of things for us to see and touch. At the end of the unit we had a tea party with authentic Irish Tea and cookies and fine lace table cloths. Our exposure these artifacts was not a substitute for actually traveling to Ireland but it helped each student to connect to a country where some of our ancestors were born and to make it seem more real-even if it was for only an afternoon 40 years ago.

If actual travel is beyond the realm of possibility teachers can take virtual trips by exploring a country via the Internet. Although it should not do so, it still amazes me what you can learn by surfing the net. Viewing pictures and reading about other countries
can help to increase one’s awareness of the issues and challenges faced by other people around the world. Using some of the social media sites can help teachers to connect to people from other countries.

Another way that teachers can connect with people from other countries is to meet people who live in their local communities that were born in another country. Those of us who live in small rural communities may not have a Chinatown or Little Italy but there are people from other countries living around us. Sometimes these people are the parents or grandparents of our students or they may be just members of our communities. You can learn a lot by interacting with people from different backgrounds.

Whichever method or methods that are used, and these are only a few of many, becoming globally competent is possible by looking at the resources located within one’s own community.

WHAT SCHOOLS NEED TO DO TO PREPARE STUDENTS FOR THE FLAT WORLD

In order to successfully develop a globally competent student body it is going to require the concerted efforts of school and governmental leaders re-shape the expectations of the current educational experience. If we do not expect students to become globally aware and no provision has been made to bring this expectation into the classroom then nothing will change in this regard.

Next it will take classroom teachers to reshape the learning environment within their own classroom. They are going to need to teach in different ways. It means that topics and issues of international concern are going to have to be infused into the existing curriculum. Assignments will need to be added or revised to include international dimensions. It may require district or state level mandates to make the necessary curricular changes. With the new flexibility in No Child Left Behind promised by President Obama this may be possible in the near future. Professional development may have to be offered so veteran teachers can upgrade existing skills or acquire new ones.

In the final analysis I think that what it will take to prepare the kind of teacher that will help students succeed in the 21st century can be summarized into 4 areas—funding, visionary leadership, redesigned teacher preparation programs and professional development for faculty.

**Funding:** Higher education must allocate more financial resources to helping students study abroad. This one experience has been shown by the body of research to have a significant impact on future employment decisions as well as ability to work with diverse populations. One quantitative research study looking at more 6000 participants and the impact that study abroad experiences had on their employment decisions found that 83% of participant reported that studying abroad had the strongest impact on their decisions of all of their college experiences. (Paige, Fry, Stallman, Josie’ and Jon, 2009) The challenge is that many students and faculty, for that matter, cannot participate in these experiences because funding is limited. With the tight economic times students and faculty are unwilling and/or unable to accept additional debt to study or volunteer abroad.

**Visionary Leadership:** is going to be necessary if the needed changes are to be realized. The heart of the school is its leader. Nothing will change until the leader changes himself or herself. To be visionary one must see the school as it ought to be and then work to conform the way it is to the way that it ought to be. Leadership of this nature sets ambitious goals and then brings together all of the resources necessary to achieve them. Troy university is among many universities that have challenged their faculty and administration to develop an international component for every program which includes increased participation in study abroad experiences. The Troy University Strategic Plan 2010-2015 (Fulfilling the Promise) outlines the goal of increasing the number of study abroad trips for students from 5 per year to 10 per year per college. This is an aggressive goal and one that is achievable but it will take leadership from the faculty, who most often lead overseas trips, and the administration in allowing flexibility in teaching loads to accommodate faculty travel and the additional workload necessary to develop study abroad trips.

**Refine Preparation Programs:** As I have already stated previously most new teachers graduate programs that do not have any international study requirements. This is not the fault of the university but more a result of the fact that state certification standards and accreditation requirements do not require such experiences. Until there are changes in the state code regarding international components colleges and universities will not be obliged to change program requirements. Only in recent years has it become possible for pre-service teacher interns to complete part or all of their internship experience overseas. This change is helping to increase the teachers’ global competence. More states need to adopt this component as part of their certification standards.
Professional Development: Providing training that will help K-12 teachers in service to infuse global issues into their teaching is going to be absolutely necessary. Providing it at the Post-Secondary level is just as important. One of the barriers to infusing technology into instruction in higher education has been due to a lack of technological training. (Davis, 2011) It is the same with infusing global issues into coursework in higher education. There are obvious programs where these connections can be easily made (International Relations, Public Administration, Cultural and Ethnic Diversity to name a few.) In other programs, Instructional Leadership, where courses are tied directly to state standards it becomes more difficult and requires some creativity on the part of the faculty. Professional development might create the opportunities where faculty can collaborate to redefine course content to include additional content and assignments that will result in students leaving programs with an international foundation

It is becoming more and more critical for our young people to be prepared for global competition. We must make the changes in the learning environments, the curriculum, and the faculty who provide the instruction. We are going to have to redefine our own educational system to prepare the kind of teacher who can help our kids to be successful in this century. Yes we are going to have to find ways to increase funding if we are going to make the necessary changes to our schools. Ultimately we must realize that no one is going to do it for us. If we wait for it to happen we will be waiting for a long time. Albert Einstein said that the definition of insanity was doing things the same way as you have always done them but expecting different results.

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THE FUTURE OF DOCTORAL EDUCATION FOR EDUCATIONAL ADMINISTRATORS IN LEADERSHIP AND CRITICAL THINKING

Darrell Norman Burrell¹,²,³, Emad Rahim⁴, Khuram Hussain⁵, Maurice Dawson, Jr.⁶ and Aikyna Finch⁷

¹Virginia International University, USA, ²George Mason University, USA, ³A.T. Still University, USA, ⁴Walden University, USA, ⁵Hobart and William Smith Colleges, USA, ⁶Alabama A&M University, USA and ⁷Strayer University, USA

ABSTRACT

Learning to be an effective educational leader is a complex undertaking. Cognitive theories would outline that learning is a process of relating new information to previously learned information (Ormrod, 1999). Think of the leadership challenges facing the President of Virginia Tech University in the aftermath of the campus shootings. Consider the challenges that faced the principal at Columbine High School in Colorado during the shootings. Often the degree of choice to develop educational administrators is usually the Doctor of Education in Educational Leadership or Higher Education Administration and the Doctor of Philosophy in Educational Administration.

Often traditional master’s level and doctoral leadership programs teach students to use a form of thinking that involves “conventional wisdom.” The problem with that kind of thinking is that scenarios can change which can make leadership decision making reactionary instead of forward thinking or creative. The way the educational leaders are developed is a worldwide issue.

In contrast to the traditional Ph.D. and Ed.D., which is geared toward the engagement of operations theory and research, the advanced leadership knowledge involved in the Doctor of Management (DM) encompasses advanced leadership training that is practical and focused on leadership’s complex impact on improving organizational culture and decision making.

Keywords: Educational Leadership, Administrator Leadership Development

INTRODUCTION

Learning to be an effective educational leader is a complex undertaking. Cognitive theories, such as “cognitivism” outlines that learning is a process of relating new information to previously learned information (Ormrod, 1999). Think of the leadership challenges that faced the President of Virginia Tech University after the campus shootings occurred. Consider the management perplexities of being a university president with campus safety issues like the ones created in New Orleans by hurricane Katrina. Consider the challenges that faced the school administrators at Columbine High School in Colorado during the shootings. These highly visible educational administration jobs require the development of advanced cognitive leadership skills in critical thinking and a doctorate to be successful. Often the degrees of choice are usually a Doctor of Education in Educational Leadership or Higher Education Administration and a Doctor of Philosophy in Educational Administration. The way that educational leaders are developed is a worldwide issue. The problem is that many of programs that are supposed to develop leaders do not have courses that focus on the development of critical skills that are required to make strategic decisions, develop teams, manage a crisis management, develop organizational strategy, and improve organizational culture.

LEADERSHIP DEVELOPMENT CHALLENGES

In 1987, the University Council for Educational Administrators (UCEA) and the National Commission on Excellence in Educational Administration conducted a study on the training of education of leaders. The findings of this study indicated a lack of a clear definition of educational leadership, inadequate preparation programs, including irrelevant curricula, mediocre course sequence, poor content and clinical experience lack of systematic professional development, and an absence of a national sense of cooperation in preparing school leaders (Wamba, 2006, Introduction section, ¶3).

It is important to examine the current curriculum and courses that are used to develop leaders in the kindergarten – twelfth grade, private education, international educational, and university education. Changing market forces, evolving economic forces, and increased global diversity have combined to produce unprecedented organizational change and volatility. These forces have put a spotlight on the leadership crisis with decision making in this country as it relates to leaders in education, politics, and private industry. This is due in part to some poor leadership decision making related to ethical leadership lapses,
religious and ethnic discrimination lawsuits, failing performance indicators, and the purposeful reporting of inaccurate financial accounting results.

The problem is that leadership decision making can be based on the reality that most leaders review the past or look backward to anticipate the future. They tend to use an elementary way of analyzing problems and making decisions. When assumptions are made that assume an instant or pre-selected solution, leaders do not consider other variables, other options or that the variables might change before the solution can be implemented (Sanders, 2002).

Leaders often engage on a linear way of thinking. This thinking follows a certain level of going from A to B to look at issues in the way someone would think and respond if someone asked them to say the alphabet. With linear thinking, leaders tend to work on coming up on one solution based on the consideration of a scenario (Gordon, 2001). Problem solving is viewed like looking at pieces of a puzzle. Once a familiar or logical pattern is discovered, leaders work on putting the pieces together based on the one pattern that is easily established and understood. Often leadership decision making never anticipates that factors or variables that exist today, could change tomorrow.

Many traditional master’s level and doctoral leadership programs in Educational Administration teach doctoral students to use a form of thinking that involves “conventional wisdom” (Hickman, 2006). The flaw with thinking that way is that scenarios can change which can make leadership decision making reactionary instead of forward thinking or creative. Once an administrator finds a solution they think is the best, they tend to stop challenging assumptions and stop considering the “what ifs.” Engaging in this behavior makes management decisions vulnerable to changing variables and a changing environment. To solve problems and critically think, members in management must engage in a cognitive learning self-reflective analysis. This process includes the mental events of their solution building in a manner that questions assumptions in the way that an engineer would engage in prototype testing over the mental events and over adding a variety of variables with each test.

University schools of education are facing intense criticism that their traditional M.Ed. (Master of Education), Ed.D. (Doctor of Education) programs in Educational Leadership or Higher Education Administration, and traditional (Doctor of Philosophy) Ph.D. programs fail to teach a curriculum in the development of strategic leaders, organizational development, leadership ethics, managerial communication, and critical thinking (Hale & Moorman, 2003). These skills are extremely important to navigate challenges in the areas of change management, educational policy, crisis management, emergency response, strategic planning, managing diversity, and developing high performance teams. Due to increased technology, enlarged expectations, amplified accountability, and growing workforce diversity, today’s leadership decisions are more complex than they were five years ago.

According to (Jacobson, 2005), graduate university programs that train people for leadership positions in education have some deficiencies in the ways that they develop leaders. There should be a creation of new degrees that focus on management, team building, and decision making (Jacobson, 2005). The need for today’s education administrators to have more advanced leadership education beyond the master’s degree has become critical, but the traditional Ph.D. and Ed.D. doctoral programs have challenges with providing the best academic training in the critical skill areas needed to lead subordinates in organizations in times of crisis and times of change.

Past premise has been that the typical (M.Ed.) master’s of Education in administration provides a baseline foundation for administrators and managers. However, over time and periods of career advancement, these individuals must renew their knowledge, perhaps in a more formal educational experience than week long executive development courses or leadership institutes offered by universities and international management associations. The logical progression is usually to pursue a traditional Ed.D. or Ph.D. doctoral program in Educational Leadership or Higher Education Administration.

Organizations and professionals have been so fixated on the value of administration and educational leadership degrees and not the applicability of the courses. The result of this phenomenon is a plethora of managers who cannot manage and make decisions effectively (Archer, 2005; Azzam, 2005). Graduate education in leadership and administration should be built around the development of effective thinking and cognitive analysis skills that develop four valuable mind sets in leaders:

1. Reflective mind set - This focuses on the nature of managerial work, the ability to learn from experience, and the historical development of management thought and application.
2. The analytical mind set - This focuses on organizational culture, structure, and strategy, the role of analysis and critical thinking in the manager’s work.
3. The worldly mind set - This focuses on understanding the influence of social and economic forces in the organizations external environment.
4. The collaborative mind set - This involves the skills of influencing and managing people through the effective activities of communicating, motivating, partnering, empowering, challenging, directing, and developing employees.

5. The catalytic mind set - This focuses on the leader’s ability to manage change through positive action and effective decision making. All the mind sets begin with reflection and end with inspiring actions that deliver results (Mintzberg, 1997).

International practitioners, who lead organizations have called for reforms in the ways that traditional universities prepare students to solve complex leadership problems in the real world (Daggett, 2005). Organizations no longer want graduates that just know how to explain textbook management theories, they want managers and administrators that can apply book knowledge, critically analyze problems, and come up with “outside of the box” solutions, especially in times of crisis. Because of the complexity of international educational problems, higher education administrators and public education leaders can not afford to learn from individuals who have only been researchers and can only teach book knowledge. A critical need to provide an educational experience that blends both theory and practice exists, because after the degree is completed, the hiring organization has the expectation that an applicant, with a doctorate degree, can be an effective leader and decision maker.

The development of critical thinking skills in organizational problem solving refers to attempting to improve the cognitive aspects of the decision making process by overcoming how the effective engagement in the process can be hampered by false paradigms, preconceived notions, biases, and wrong assumptions (Bazerman, 2006).

**THE DOCTOR OF MANAGEMENT**

In contrast to the traditional Ph.D. and Ed.D., which are geared toward the engagement of operations theory and research, the advanced leadership knowledge the Doctor of Management (DM) encompasses advanced cognitive leadership training that is practical and focused on leadership’s complex impact on improving organizational culture and decision making in a “practitioner scholar” theory to practice academic approach. The degree was first developed in the United States at Case Western Reserve in Ohio in 1995. Since the degree’s creation, its presence as valued terminal degree has grown tremendously. Several other universities have developed their own programs.

In Missouri, Webster University’s Doctor of Management degree is designed to stimulate innovative thinking that leads to breakthrough accomplishments. The curriculum focuses on leadership, organizational change, and other strategic areas of management in a distinctive integrated approach that blends theory and practice.

In Newburg Oregon, George Fox University’s limited residency Doctor of Management offers a dual-track program includes an executive management track for organizational leaders in corporations, government, and education and a management education track, for those interested in teaching, coaching, training, and consulting. The program even offers a weeklong international residency in leadership.

The University of Phoenix and Colorado Technical University in Colorado Springs also offer a limited residency on-line Doctor of Management Programs with applied dissertation options for degree completion.

Traditional graduate programs that are intended to develop leaders in education, administration, and policy have classes in specific topic areas like school finance, school law, school budgeting, operations strategy, school supervision, community relations, and quantitative research. Most traditional doctoral programs have a less than 50% completion rate and average seven year completion times (Smallwood, 2001).

The Doctor of Management challenges many traditional assumptions in the way that academics provide doctoral education that is intended to develop leaders. The Doctor of Management (DM) takes a progressive academic approach with a curriculum focus on the importance of developing cognitive thinking skills, motivating staff, developing teams, and developing organizational culture with a curriculum that is focused on the development of critical thinking skills.

The DM’s focus is on improving the effectiveness of management from an advanced cognitive critical thinking decision making platform that is focused on improving collaborations with staff and the maximization of organizational knowledge as is relates to problem solving. The DM considers the fact that a leader can have a vast array of technical operations knowledge and can devise the greatest strategy in the world, but without the ability to develop staff and engage in critical thinking skills, long-term organizational success will be limited.
The Doctor of Management is a major departure of traditional doctoral study by enabling administrators to use a combination of pure leadership theory and applied research methods to define, implement, and better evaluate the decision making strategies necessary for organizational growth and organizational survival. This program can be completed in 3-4 years without the students having to leave their full time jobs. These programs are offered in distance learning and non-traditional formats that allow participants from students from all over the world, which creates a rich and diverse learning experience for students. When considering the pending leadership shortages with enormous ongoing retirements of “baby boomers” a need to develop a growing pipeline of new effective leaders in all organizations is necessary.

College presidents, university deans, and other public school administrators, through their collective influences, have a fundamental impact on organizational strategy. Therefore, their education and re-education must be part of any ongoing effort to develop organization longevity through leadership development by improving the way the decisions are made and the way that problems are critically analyzed.

The Doctor of Management offers a curriculum that has the right blend of theory and practice that is facilitated by instructors who have extensive real world management experience. The advantage of completing courses in critical thinking is that students are exposed to new processes that allow them to engage in the practice in their organizations (University of Phoenix, 2006). The best analogy to explain this premise is to consider the aspects of learning to play the piano. Would a person like to learn how to play the piano by just hearing lectures and reading books about how to play, or would they rather learn the theory and sit with a real piano and practice? The use of case studies as practice in a critical thinking course allows the manager or administrator to practice solving real life problems in a controlled environment where they can grow while learning from the instructor and each other. Unfortunately, this kind of classroom instruction not usually offered in traditional doctoral programs in educational leadership and administration.

Traditional programs often only provide leadership training that exposes students to the aspects of problem solving that is linear. In these traditional programs, students are taught approaches to problem solving which typically begin and end with learning about text book theories based more on research then on practice. Problem solving is taught from a perspective that often ignores the learning that can be gained through exercises that allow students to learn from each other’s collective knowledge and professional experiences (Harrison, 1999).

Often assignments focused on leadership decision making are individual and not collaborative, creating solutions that tend to narrowly define and limit the number of possible alternatives for addressing the problem in a traditional and abstract research or textbook driven approach. Critical thinking courses help administrators find more creative cognitive based solutions to problems by developing a decision making process that attempts to question assumptions, reduce the impact of biases, and overcome tendencies toward locking in on courses of action before thorough analysis and planning can take place. The critical thinking and leadership development courses offered in the DM programs attempt to build or improve the decision making structure of students and the organization in a whole.

THE VALUE OF CRITICAL THINKING SKILLS

Peter Vaill's book entitled, Learning as a Way of Being: Strategies for Survival in a World of Permanent White Water, presents a view that the traditional study of management and leadership is linear and too narrow. He presents a perspective that the study of management and leadership should be more interdisciplinary and blended with the integration of cognitive learning experiences from a variety of environments. He presents the commentary that university programs should teach managers and leaders how to incorporate the aspects of learning and development in a variety of aspects in their lives and in their organizations (Vaill, 1996).

In order for any leader to be successful, they need to develop an advanced cognitive understanding of the differences between healthy, unhealthy organizations, and the processes that are vital in changing organizational culture. Managers charged with changing and leading organizations need to develop an understanding of the processes and steps needed in decision making and implementing organizational change. (Beitler, 2006)

In the book, The Fifth Discipline, Senge explains that the only sustainable competitive advantage is a company or organization’s ability to evolve, develop, and learn faster than the competition. This includes developing leaders and employees who engage in critical thinking in the way the problems are solved, strategy is development, and leadership decisions are made (Senge, 1999)
WHAT MAKES THE DM DEGREE UNIQUE

Historically there have not been a variety of options for doctoral study that was driven in theory application, cognitive leadership development, managerial reflection, and critical thinking. As mentioned earlier, Doctor of Management programs that offer courses in these areas in an online and weekend formats are now being offered by Webster University in Missouri, The University of Phoenix in Arizona, The University of Maryland University College, Case Western Reserve University in Ohio, George Fox University in Oregon, Colorado Tech University in Colorado Springs. These programs represent the development of applied doctoral programs for working executives and upwardly mobile administrators. These programs provide a rigorous academic experience that builds bridges between the development of high level intellectual thinking skills and the kind of and complex leadership problem solving skills that are vital to managing today’s world, which is greatly influenced by technology and cultural diversity.

These executive doctorate programs were developed to accommodate managers or educational administrators, who are not interested in quitting their full time job to complete a doctorate, as most traditional doctoral programs in Administration that have an average time of completion of seven years. The admissions committees of these executive programs value students who are employed full time. They attempt to use the coursework to create a synergy between knowledge that is gained in the classroom and skills that are developed at work. In these doctoral programs, cognitive learning, workplace learning, and peer learning build on each other.

While the Ph.D. is considered a degree that prepares the graduate to do research, the development of an applied or an executive doctorate like the Doctor of Management (DM) has been the result of academic evolution. The applied or executive doctorate was developed from the understanding of the distinct differences between research and reality when it comes to managing, making leadership decisions, and developing the strategy for complex organizations. The academic approaches used are built on the adult learning theory that focuses more on the academic development needs of the student. These programs place high value on the work experiences and previous knowledge that students bring to the classroom. Traditional doctoral programs focus on the prescribed pedagogical model that assumes that the learner has little value to add to the learning experience and it is, the teacher, the textbook, and the classroom lecture that provide the value to the learning experience (Knowles, 1984).

The Pew Charitable Trust sponsored a survey, which conveyed that the training that Ph.D. students receive is not what many of them want and did not do a good job of preparing them for the jobs that they would eventually take. What is significant about these survey results is that most doctoral programs are preparing students to be researchers but most doctoral graduates end up in the practical work world (Smallwood, 2001).

As leading today’s organizations becomes more global, diverse and complex, there continues to be discussion in the literature of the importance of developing more advanced cognitive leadership skills and critical thinking skills in all administrators. Unfortunately, the work and family demands placed on today’s administrators leave little time for traditional advanced education in the traditional fashion on the doctoral level. For many professionals, leadership knowledge enhancement is pursued through weekly professional development courses and through reading professional periodicals. These educational exercises, though very valuable, are fragmented segments, and are often not re-enforced through application and applied research.

According to a recent report by the Association of American Universities, when designing graduate programs and advising graduate students, university administrators and faculty members must hold the interests and development needs of students’ paramount (Leatherman, 2001).

These Doctor of Management programs are set up to not just recruit students, but to also make those students become graduates with sound cognitive leadership decision making abilities. The critical thinking courses offered in these programs provides students with the tools that vital in cognitive problem solving. These courses attempt to improve decision making by teaching the value of experience, by showing how to minimize the influence of bias, by teaching to question assumptions, by showing the value of gaining the perspective of others, and by overcoming the agendas of others.

The DM program offers managers a unique opportunity to enter into the realm of practitioner scholarship. Where formerly the two divergent worlds, or cultures, of the academic scholar and hands-on practitioner rarely dialogued or collaborated, a new genre of both worlds is a key aspect of these programs. In course of executive study, experienced administrators and trained in theoretical concepts through accomplished academicians and challenged to produce rigorous, high quality applied research that is both functional and useable by the scholarly world as well as a living and functioning organization. Consequently through
a carefully designed curriculum administrators are given academic preparation to navigate the worlds of practice and academic scholarship successfully.

The Doctor of Management is a result of collaboration between the real world and academia in the development of a program with relevant curriculum in leadership decision making for practitioners. The university administrators and faculty members that are offering the DM did not arbitrarily decide on what type of doctoral program was needed, but these institutions went to actual organizational leaders to get input. The universities that developed these programs did something in their development that many universities rarely do. They went to the consumer and the marketplace and asked what kind of courses were needed and created a degree program with needed curriculums in cognitive critical thinking skill development with case study driven teaching approaches. As the challenges of leadership in this global society become more complex it will be critical for leaders in all levels of management to upgrade their cognitive knowledge toolkit and these programs will play a vital role in that process.

The Doctor of Management programs’ curriculum asks, if the definition of management is getting work done through sound cognitive decision making that effectively influences people, then why are traditional doctoral programs in Educational Administration are often absent of courses that focus on the development of cognitive critical thinking skills and organizational development?

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REDUCING JUVENILE DELINQUENCY

Sloan T. Letman III, Alison Duggins, Janell Bryant, Shirley Chuo and Jack Aschkenazi
American Intercontinental University, USA

ABSTRACT
In this paper, the writer will address the topic of reducing juvenile delinquency while discussing some of its contributing factors. The paper will attempt to persuade the reader from the writer’s perspective with scholarly evidence and statistics. While there is widespread conformity that reducing juvenile delinquency should receive more local, state, and national attention, there are no straightforward solutions; nor is there a consensus on what methods should be embraced. The areas for consideration are: the home environment (abuse vs. discipline), education (teachers and truancy), external pressures (alcohol/drug abuse), and the rehabilitation process (juvenile/adult prison). The author includes arguments, but acknowledges a counter argument with supporting data. Undeniably, there are formidable challenges that lie ahead; and establishing solid programs and stricter disciplinary measures early can aid in reducing juvenile delinquency.

OVERVIEW
Do you want to see your child behind bars? How would you feel if your child had to spend time in juvenile detention? Many experts, law enforcement officials, parents, psychologists, and scholars agree juvenile delinquency is still a foremost concern. There has yet to be a consensus as to a solution and studies continue, as well as the problem. There are elements that all have pointed to key areas of concern: internal influences, education crisis, external influences, all of which will be covered graphically in the following paragraphs. Stricter discipline occurring during the formative years, would aid in reducing juvenile delinquency. The home environment is where some form of discipline is administered. There is complete disagreement as to what constitutes effective discipline. There are proponents and opponents that cite various studies on both sides of the issue. One of the key concerns in regards to the home environment is abuse versus discipline. There are different forms of abuse, i.e., emotional, physical, and psychological. Many experts purport that neglect should be considered abusive conduct and it does not receive the attention it should as in normal cases of abuse, like spanking or corporal punishment. An example of such neglect would be in March 2007, “a Maryland mother left her five young sons unattended in a squalid basement apartment in Prince George’s County” (Dubowitz, 2007, para 2). More and more, single parents and even married mothers, are working while their children are latch-key kids, coming home to empty homes, is this abuse? That is where the debate lies; and according to the above scenario, many say a resounding yes. Dubowitz (2007, para 3) contends, “Children of neglect suffer more mental and physical health concerns like depression, heart disease in their adult years and the emotional and physical toll has both short and long term effects.” On the other hand, older generations, i.e., parents and grandparents acknowledge that spanking was the preferred and commonplace form of discipline during their formative years. Not today, parents are being arrested because laws have been enacted stating this is abusive behavior in all areas; emotional, physical, and psychological and is detrimental to a child’s self-esteem and long term emotional development. This topic evokes strong emotions on both sides; however, as long as it is administered in the proper manner, spanking is not abusive nor is it corporal punishment. The controversy resides in what constitutes the proper manner. Nevertheless, as the debate continues,

Corporal punishment in families has been a long disputed practice in the United States and worldwide. Advocates for the use of physical punishment propose that it is a necessary aspect of disciplining practices that produces well-behaved children, while opponents claim that spanking or physical discipline harms children psychologically and interferes with their development. (Hicks-Pass, 2009, para 4)

Many parents and grandparents would love to see this form of discipline returned to the home environment. Furthermore, despite its opposition, Hicks-Pass (2009, para 6) states, “Even as practitioners, researchers, and educators alike have come out in protest against corporal punishment of children both in school and at home, it is reported that 94 percent of parents with toddlers continue to spank.” This will forever be a hotbed of controversy, with no immediate agreement or resolution in sight. Both sides maintain staunch beliefs on the subject, therefore, will not concede their position.

In the educational arena, instead of reducing juvenile delinquency, in some areas it has contributed to the problem. An interesting fact is that educators are under extreme pressure in regards to testing and raising the level of student scores. Children with disciplinary issues are being expelled from classes for mundane infractions. But are teachers really to blame?
Yes, everyone wants to see students succeed; but is subjecting teachers to such strict regulations and state mandates the answer? Not only are educators feeling the heat, so are schools in general. Fuentes (2003, para 9) also says another problem hurting schools is the "No Child Left Behind concept with its state and local mandates for annual testing of students in reading and math, will dismiss them from class just to keep test scores high and remaining employed all at the same because it imposes sanctions on schools failing to increase achievement." This impedes reducing juvenile delinquency because teachers will not tolerate minor disciplinary problems from students and time.

One of the most significant areas of concern has been the elimination of after school programs. Of all areas in the educational community, truancy and after school programs have been the most measurable; statistics bear this out.

**In America today, millions of young people are alone and unsupervised in the hours after school, before parents return home from work. This situation places children and teens at grave risk for juvenile crime, substance abuse, teen pregnancy, and other problems. The program obtained statistics from the U.S. Census Bureau which found that fifteen million kids have nothing to do once they are released from school.** (Afterschoolallstars, n.d., para 6)

Although, there are programs like the YMCA, they can be expensive and inconvenient for working parents, leaving kids alone with so much free time is asking for trouble. Yes, there are still after school sports, but those programs are predominantly in the high school level. District budgets are being slashed so much so that only the more popular sports are available, i.e., baseball, basketball, football, etc., and participation is costly; all music and library programs are activities of the past. On a positive note, when after school programs are available, "kids who participate earn higher grades, have improved attendance, behave better in school, and are more apt to graduate" (Afterschoolallstars, n.d., para 9).

The final area in the educational environmental is peer pressure; youths and adolescent teens are more susceptible to the influence from peer pressure than their own parents. Parental authority used to be the single most influential presence in children’s lives; it has been replaced with their peers; this is not always indicative of a negative atmosphere. After school programs can offer intangibles that help teens interact with their peers in a more positive setting.

**Links have been found consistently between teen’s well-being and environments that are emotionally positive and warm providing support for developing adolescent autonomy while research suggests positive experiences within the family and among peers may lessen the effect of negative experiences.** (Afterschoolallstars, n.d., para 10)

**MIDDLE CLASS FAMILY:** In the last twenty years, there has been an increasing rise in dual income families. There is an increasing necessity for parents to work long hours just to maintain a middle class lifestyle, particularly in urban communities where housing prices and cost of living expenses have skyrocketed. Parents are not home as much due to longer work hours and longer commutes because of freeway congestion and urban sprawl. Consequently, the mother’s role has changed from nurturing care giver to secondary breadwinner who spends most of her time out of the house. This forces children at a very young age to be in daycare/childcare for long hours during the day that are inappropriate to a child’s psychological well being. There is an increase risk of children to have feelings of loneliness, isolation among children at an early age and can lead to low self esteem and a lack of security amongst middle class families. Another issue is that parents then feel guilty that they are not able to spend the appropriate amount of family time during the week which is necessary for the engagement and development of the family unit. Parent’s who work tend to discipline their children less, simply because they are too tired from working and don’t have the energy to maintain a firm and rigid structure of rules and regulations within the household. Parents of dual income families would rather be considered a “friend” to their children and “spoil” them on the weekends to make up for the lost time during the week rather. This is a much easier parenting approach rather than maintaining a consistent balance of discipline and structure that provides healthy benefits to a child’s sense of worth as an individual. This often causes the teenager to feel that they can “get away” with anything. Teenagers feel that they can manipulate their parents during the week because of the guilt feelings that parents have from working so much and get in trouble after school.

Additionally, there is also an increasing lack of spiritual development in these middle class communities. Children grow up with many materialistic items as a substitute of spending quality time with parents but do not have a sense of ethics or values. Attendance at church on Sunday’s has diminished over the decades. This leads to children and eventually teenagers that do not have appropriate boundaries or a sense of knowing what is right or wrong.
Additionally, there is an increasing need for middle class parents to keep up with all their adult friends. There is also pressure in those venues to keep up with all the latest material things that other parents are buying children. There is large amount of peer pressure in these middle class communities to keep up with the activities, items and personification of a decent middle class lifestyle. This statement is undoubtedly indicative of peer pressure that exhibits a positive influence.

We have lost the tight knit networks of intergenerational families raising children within the same communities or even under one household. Parents of middle class families only have causal comparisons at school or childcare facilities and only wife and husband are responsible solely for their children. It is common for grandparents, aunts and uncles to be spread out across the United States and have little influence on the values and ethics of their children. It becomes hard to juggle responsibilities of work, paying bills, raising children, and running a household. Therefore teenagers of these families are not raised with a clear sense of guidance. It becomes important of these teenagers to fit in and form tight social networks. With the plethora of video games and lack of social interaction, teenagers can be highly susceptible of getting in trouble due to a lack of purpose in life. During these formative years, teenagers would like to fit in. Being popular or doing the “cool” things are of outmost important to a teenager. If they see images of juvenile behavior on the internet or TV, this can be considered very attractive to a middle class teenager who is bored. Teenagers are extremely impressionable. They ego’s are extremely fragile and they want to receive appropriate validation and attention from their peers. If they get positive enforced from their peers by doing juvenile behaviors than this makes the teenager feel good about themselves. Thus this would contribute to more reinforcement of the same behaviors. Their perception of the world is extremely limited, therefore they need adults to guide them through these turbulent years. With the lack of after school programs and cuts in music programs, these teenagers have less and less activities to become involved with. If there is a lack of parental guidance, the perpetuation of delinquent behaviors will persist.

Another contributing factor is societal influences (external environments). Two areas with cause for concern are alcohol/drug abuse and the power of negative media. First, alcohol and drug use is on the rise among juveniles. There is a critical period in the hours immediately following school dismissal where teens are more susceptible to engage in criminal activity.

Afterschoolallstars (n.d., para 12), found a bi-partisan organization program entitled Fight Crime: Invest in Kids consisting of various law enforcement agencies, prosecutors, and victims of violent crime has found through a series of studies that violent juvenile crime most likely occurs between 3 pm and 6 pm, where youth are more likely to engage in risky behaviors - experimentation with drugs, alcohol, cigarettes and sex during these hours.

Having programs that offer direction, instruction, and supervision is a strong deterrent to abhorrent behavior. Second, the environment of negative media is flooding the minds of America’s juveniles. The violence in all forms of entertainment is poisoning the minds of impressionable adolescents; there has been a surge in bullying, gang-related activity, peer violence, school shootings, etc. Violence is portrayed in every genre of media; movies, magazines, television, and video games, and the unfortunate feature of this are it is being passed along as entertainment. And it is engaging, just the wrong type. “There are no limitations in the world of entertainment; the focus is on cases of juvenile delinquency in response to violent images, which suggests this is symptomatic of a whole generation of children” (Laughley, 2007, para 4). Eventually, the media will be forced to face the role it has played in the accentuation of violence it allows to permeate in the minds of society; primarily juveniles.

Lastly, more and more, juvenile delinquents are participating in illegal activities that are sending them to prison, adult prison. The adult penal institutions are no place for the youthful minds of America's juveniles. There are countless cases in the criminal justice system that have, and are sentencing youth to the hard core prison system with interminable sentences. They are exposed to more criminal behavior inside the walls of confinement than in society; this is truly a sad state of affairs. IN PRISON THEY ARE EVEN MORE INFLUENCED

Studies have shown that confining delinquent youth in correctional facilities stigmatizes and alienates them…and many released from these facilities will return to the same adverse environments. Many become repeat offenders and if their crimes are serious enough, they may be waived to the adult correctional system…several studies found that juveniles waived to adult correctional facilities recidivate more and sooner (66%) than juveniles who committed similar offenses. (Schetky, 2009, para 5)

As one can clearly see, the rehabilitation process as it now stands for juveniles is ineffective and offers little to no hope of any sort to youthful offenders. The system is more retribution in nature than rehabilitative; thus, diminishing the chances of adolescents returning to society as productive members. The author, who is also a physician and psychologist, has witnessed the struggles of these individuals in both the juvenile and adult correctional facilities. The focus should be centered on establishing area programs offering assistance to juveniles interested in a restorative justice reintegrating them back into their natural environment. By no means is anyone advocating that should programs like these be instituted, they are not a cure-all to
reducing juvenile delinquency or criminal youth offenders, but it is certainly a start. And many would agree it is past time to start somewhere.

CONCLUSION
Every facet of society must share in the responsibility of nurturing children. As children mature emotionally and physically, adult supervision in some form is essential. It is evident throughout society that leaving children unattended to survive on their own has disturbing repercussions for everyone. Many studies have been conducted surrounding juvenile delinquency. It is not adequate to just study the problem; processes must be implemented to resolve the problem. There is a consensus that abusive behavior towards children in any form is absolutely intolerable. Many will agree administering positive and stricter discipline during the formative years will aid in reducing juvenile delinquency.

REFERENCES
CO RELATIONSHIP BETWEEN COMMERCIAL BAIL BOND INDUSTRY AND TENNESSEE JAIL POPULATIONS

Chinyere Ogbonna McGruder, Eric Martin, and John A. Taylor II
Austin Peay State University, USA

ABSTRACT

One of the crucibles of any organized society is the idea that there should be a rule of law, and subsequent consequences for breaking such rule of law. Inherent in the establishment of such laws is the idea that if such laws are not adhered to, there would be punitive consequences for such non adherence. Such consequences can range from punitive fines to incarceration. As such, there has been the development of units or prisons to house individuals that have been convicted of breaking laws of a specific society. Within USA, individuals have to be charged and convicted in a court of law of violation of criminal laws or statues before they can be sentenced to prison. Jails are usually the units where such individuals are detained while awaiting trials. This research examines the jail house processes of misdemeanants detained in TN jails for misdemeanor offences. As such data pertaining to incarceration and release rates are analyzed, as well as the means or process by which they are released from jail prior to going through a formal trial of the charges against them

Keywords: Misdemeanants, Non Violent Crimes, Violent Crimes, Criminal Law, Minor Offences, Jails, Prisons, Trials, Bondsman

INTRODUCTION AND LITERATURE REVIEW

One of the crucibles of any organized society is the idea that there should be a rule of law, and subsequent consequences for breaking such rule of law. History has shown that earliest civilizations had processes and means of ensuring that the laws of a particular society were being followed by the citizens. Inherent in the delineation of laws is the idea, that there are consequences for breaking the law. Such consequences can run the gamut from assessment of fines to incarceration or in extreme cases even death. That has led to the development of units or prisons to house individuals accused and convicted of breaking specific laws of a society. Within the United States, individuals have to be convicted in a court of law, of violating criminal laws before they can be sentenced to prison.

United States has one of the most strident stances on the use of incarceration as a policy too. As the American political climate leans towards “Get Tough” policies on drugs and crime, there has been an attendant increase in the number of individuals charged, convicted and subsequently incarcerated for minor criminal offences. As such, United States has one of the highest documented incarceration rates of the developed world. The rate of incarceration within the United States has seen a significant increase from prior decades, and this is despite the fact that the violent crime rate is on the decline. According to the US department of Justice, the overall percentage of violent federal offenders decreased from 17% to 10% for the period spanning 1990 through 2000, but on the other hand, as an offence category, drug offenders accounted for the largest percentage of inmate increase (59%) followed by public order offender ( 32%) (Ogbonna, 2010, Harrison Paie et al 2002). Likewise, the U.S. incarceration rate on June 30, 2009 was 748 inmates per 100,000 U.S. residents, or 0.75%. According to the U.S. Bureau of Justice Statistics (BJS) 7,225,800 people at year end 2009 were on probation, in jail or prison, or on parole. That is about 3.1% of adults in the U.S. resident population, or 1 in every 32 adults (Walmsley. 2008). This fact ensures that the United States has the dubious honor of having the highest total of documented prison and jail populations in the world (Nellis. 2005).
American prisons and jails held 2,297,400 inmates in 2009 (West. 2009). Approximately one in every 18 men in the United States is behind bars or being monitored whether it is via electronic tracking or through supervised probation. Although lower, a still alarmingly high number, approximately one in every 32 members of the American population, are in some form of correctional control such as incarceration, parole, probation or in a pretrial release program. This is despite the fact that crime rates have declined by about 25 percent from 1988-2008 (Warren. 2008).

Nearly one million of those serving time in state and federal prisons, as well as those serving time in local jails, are serving time for committing nonviolent crimes (Irwin, Schiraldi, Ziedenberg. 1999). Violent crime rates have been relatively constant or declining since 1983 (USBJS. 2009). The influx of tougher policy changes have primarily contributed to increased prison population. These tougher policy changes enable the imposition of an increased number of prison sentences as well as increase in the length of time served. For instance mandatory minimum sentencing (utilized usually for drug crimes, whereby the convicted is imposed a specific prison sentence based on crime committed), "three strikes" (whereby the convicted would possibly be imprisoned for life for the commission and conviction of a third felony if they had been convicted for two prior felonies) laws, and reductions in the availability of parole or early release, has exponentially increased the number of people behind bars. These policies evolved under the guise of protecting the citizenry from serious and violent offenders, but instead yielded high rates of confinement for nonviolent offenders according to BJS. Nearly three quarters of new admissions to state prison were convicted of nonviolent crimes. Only 49 percent of sentenced state inmates were held for violent offenses according to US Bureau of Justice statistics.

In 2006 alone, $68,747,203,000 was spent on corrections. According to the U.S. Bureau of Justice Statistics, the average annual operating cost per state inmate in 2006 was $22,650, or $62.05 per day, while average annual operating cost per federal inmate under the Federal Bureau of Prisons, was $22,632 per inmate, or $62.01 per day. The cost of incarceration in the United States has increased by 660% between 1982 and 2006 (USBJS. 2009). At the state level, an estimated 7% of annual state budgets are spent on corrections (Liptak. 2008). In 1987, states spent 10.6 Billion dollars of taxpayer money for corrections costs. Over the ensuing, 20 year period, the number increased to 44 billion in 2007 according to the National Association of State Budgeting Officers.
It costs about $9 billion a year to house the approximately 500,000 people who are in jail awaiting trial because they cannot afford bail costs (Sullivan. 2010). Most are defendants' who have been found guilty of nonviolent misdemeanor offenses. Misdemeanor offenses such as shoplifting, driving on a suspended license or public intoxication generally carry a maximum incarceration period of 11 months and 29 days. Such offenders do not generate high levels of concern within the minds of the public. Many of these individuals have been granted bail, but most cannot afford it so they remain behind bars until their trial date (Sullivan. 2010). The cost of incarcerating these prisoners, in most cases, exceeds the fines associated with the crimes for which they have been charged.

For example, in Montgomery County, the fines and costs associated with a first offense domestic assault conviction are only $349.00. The per diem to stay in the Montgomery County Jail is $72 per day. So, after spending five days in jail due to the inability to make bond, a prisoner owes the system for jailhouse fees, a sum that is more than the total cost of his or her conviction fees. It costs the county approximately double that per diem to incarcerate each individual per day when salaries for jailhouse workers are added to the operational costs of housing the inmates. Thus, a five day stay would cost the county $720 to house a misdemeanant, which is nearly double what would have been recovered in fines and costs.

The exploding incarcerated population is further burdened by pretrial incarceration of nonviolent offenders. Cities like Baltimore, Philadelphia and Nashville historically exceed their maximum population capacities on average (Sullivan. 2010). This means, that on average, there are more prisoners within the jails than there is room to safely house them. The average daily population of jails rose by 26.5% nationally between 2006 and 2008 (Clark. 2010). To ease overpopulation, states around the country are now spending more to build prisons and jails rather than spending such funds on education and educationally backed social programs. This, despite the fact that recidivism studies show it is more beneficial to spend money on education than incarceration (Warren. 2008). For example the average cost to house a person in prison is $22,000 per year, whereas the cost of a residential treatment program costs an average of $15,000 a year; day treatment programs average $5,000 per year; and outpatient treatment program costs $3,500 per year. Even intensive probation (electronic monitoring) costs on average $6,500 per year (Chambliss. 2001). The dollar amounts along with the rehabilitative benefits, reduced prison populations, and the need to construct, staff and maintain fewer prisons makes the cost reduction worthwhile.

<table>
<thead>
<tr>
<th>County</th>
<th>Average Daily Jail Population</th>
<th>Percent Of Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York City</td>
<td>13,849</td>
<td>71</td>
</tr>
<tr>
<td>Orleans Parish, La.</td>
<td>2,613</td>
<td>90</td>
</tr>
<tr>
<td>Shelby County, Tenn.</td>
<td>5,765</td>
<td>89</td>
</tr>
<tr>
<td>Baltimore City</td>
<td>4,010</td>
<td>116</td>
</tr>
<tr>
<td>Philadelphia City</td>
<td>8,811</td>
<td>102</td>
</tr>
<tr>
<td>Davidson County, Tenn.</td>
<td>3,528</td>
<td>107</td>
</tr>
</tbody>
</table>

The process of setting bail allows those with money to get out. This in and of itself could be interpreted as a violation of the 8th Amendment of the U.S. Constitution adopted as part of the Bill of Rights, which exists to protect all citizens, especially those with limited financial means, from the arbitrary use of government power. Specifically the 8th Amendment states that a person taken into custody should not be held for excessive bail. In the case of an indigent person virtually any cash amount could be considered excessive. Those with money or means are able to secure release and return to their jobs and their families. They are thus better able to prepare a defense for their case. Those who cannot afford bail stay in jail, and are left to accept whatever plea bargain offer, that prosecutors feel like proffering them. Research data indicates that incarcerated defendants are far more likely to plead guilty than those who are released pretrial, and they are also more likely to receive and accept harsher punishments (James. 2004).

States have recognized the need for significant change in the way corrections systems operate. Ballooning costs and jail populations have caused a dire need for sweeping changes to reverse the current trends. Most of the legislation of the past year, however, has been focused on better managing inmates serving post conviction sentences. Research data suggest that there are other demographics that help ensure increased jail population. From 1990 through 1996, jail populations were evenly divided between sentenced offenders and pretrial detainees. For that period, there were about as many post trial incarcerated prisoners as pre trial detainees. But from, 1998, the number of pretrial detainees increased much more significantly than those
incarcerated after a conviction. The convicted and sentenced population grew from 200,000 to 300,000 in 2008; whereas the number of pretrial detainees jumped 150% from 200,000 to 500,000 (Minton, Sabol. 2009).

Jails are now invariably becoming facilities whose primary role is to hold persons while they await trial, while sentenced offenders in prisons, now comprise a decreasing portion of the inmate population. When a person is arrested, there are generally three methods of obtaining pretrial release. The first is the utilization of a commercial bail bondsman where the prisoner traditionally pays 10% of the bond assigned to them along with various fees ranging from $25 to $100 dollars. The second method of pretrial release is by paying a cash bond directly to the Clerk of Court which is held as collateral until the criminal matter is settled. The third method commonly is referred to as OR which means released On Recognizance. This method has many avenues including signature bonds, judicial release or official pretrial release programs.

Pretrial release programs have been introduced around the country to help alleviate the alarming statistics of jail crowding. According to the American Bar Association (ABA) and the National Association of Pretrial Service Agencies, the purpose of pretrial services is to “perform functions that are crucial to the effective operation of local criminal justice systems by assisting the court in making prompt, fair and effective release decisions” (Kauffman. 2009). Research indicates that these programs cost a fraction of the amount required to keep a defendant incarcerated and the released prisoners have routinely shown up for their court date. But, these programs meet resistance from the bail bonding industry. Using nearly unlimited resources, this industry goes to great lengths to insure its continued financial prosperity. The result is that jail populations continue to be burdened with pretrial misdemeanants who cannot afford to pay their bail.

The bail bonding industry operates in forty-six of the fifty states. In most cases, the bail bondsman provides a guarantee to the court that a defendant will show up for their trial and in return, the detainee pays a non-refundable fee to the bail bondsman. If the defendant does not show up for the trial, the bondsman is held liable for the full bail costs, but most states’ laws allow the bondsman six months to one year to return the prisoner to custody before payment is expected. If the bondsman fails to satisfy their financial obligations, in most cases the only penalty assessed is the suspension of their license to conduct business in the county where the money is owed.

In specific instances, the full force of the influence of the bail bond industry has directly impacted the ability of pretrial release programs to aid non-violent offenders in obtaining pretrial release. For instance, Broward County, Florida responded to its jail overcrowding by expanding their pretrial release program. Within a year of the expansion of the programs, the jail population was reduced significantly enough for the Sheriff to be able to close an entire wing of the jail- saving the taxpayers $20 million a
year (Sullivan. 2010.). It is interesting to note that two years after voting to double the program’s funding, the same commissioners voted to downsize it. The requirements for participation in the programs were adjusted to decrease eligibility for non-violent offenders and funding for the program was decreased significantly. The commissioners stated that the reason for the review and reduction of the program was that it was more expensive in Broward County than similar programs in other counties. An investigation by National Public Radio revealed that the 135 bail bondsmen in the county hired a lobbyist, and at his direction, paid out over $23,000 in campaign contributions to the members of the council in the year prior to the vote to reduce the program. The lobbyist hired by the bail bondsmen was also the hired lobbyist of the County Commissioners, which allowed him to have unfettered access to the commissioner.

In Lubbock, Texas, bail bondsmen have been documented reversing the pretrial release process for inmates that they have a previous relationship with. Bail bondsmen react more quickly than pretrial officers are able to, and often begin the process of bonding out defendants before any contact is made between a prisoner and the pretrial release office. Once the bondsmen find out that a pretrial release is being arranged through the local program in Lubbock, they strong-arm the judge, applying pressure through what amounts to little more than legal intimidation to exclude the prisoner from the program so that they may continue their business transactions. This intimidation comes in forms of not-so-subtle references to campaign contributions and the withholding thereof. Judges are elected officials and need campaign donations to get re-elected. Bail bondsmen in Lubbock brag about the influence they have and are quick to point out that “they make frequent donations to elected officials. Indigent jail inmates do not” (Sullivan. 2010.).

In four states, bondsmen have lobbied to enact legislation limiting pretrial resources. They have successfully lobbied Congress so they won’t have to pay the bond if a defendant commits a new crime while out on bond. In California and Texas, they have lobbied to cut funding from local pretrial programs. Thus the bail bonding industry can conclusively be considered a power player within corrections policy creation and enforcement. Organizations such as the American Legislative Exchange Council and The Bail Coalition exist to work politically to eliminate publicly funded pretrial release programs not because they want to prevent people from getting out of jail, but because they want people to have to pay their members, the bail bondsmen, to do so.

RESEARCH METHODS AND APPROACH

In order to adequately determine the influence of the bail bonding industry, on pretrial release, secondary data pertaining to jail pretrial detentions and process of release were collected from four different counties of Tennessee. These data were analyzed, to determine the percentage of all pretrial release that was bail bonds men related. It was determined that because of the variations in population density, there needed to be representative data from a county with a large population, a county with a medium sized population and a county with a small population. Population density was used as a baseline because jailhouse processes are different in each county; however, there seems to be some similarities in pretrial release programs. For instance, Shelby, Davidson and Knox Counties all use electronic booking procedures when processing new inmates. Smaller counties such as Montgomery and Houston use handwritten documentation methods. Staffing levels in larger population counties are higher and as such, one prisoner booking may be done by a number of different employees. In smaller counties, one individual may serve as the booking officer, guard, and transport officer, thus altering the booking process.

Counties were asked to provide, or allow researchers to access data on the number of persons arrested during the 2009 and 2010 period on misdemeanor charges. The data provided information pertaining to monthly arrests and pretrial releases. The Arrest records were group into four. The first group represents those defendants who obtained a pretrial release by utilizing the services of a commercial bail bondsman. The second would be those who had secured their pretrial release by paying a cash bond. The third group represented pretrial misdemeanants who were released On Recognizance (OR) and the final group was those prisoners who did not obtain a pretrial release and remained in jail.

Data from Six counties based on population size, were initially going to be analyze. The research team was going to select convenience counties based on size. Thus there would have been three large counties, two medium sized counties and one small county. The counties originally approached were Shelby, Davidson, Knox, Hamilton, Montgomery and Stewart Counties. Only four of the counties agreed to work with the research team and provide aggregate data. It is interesting to note that the counties that were on electronic booking procedures were reluctant to participate because they stated they did not have the means to pull the requested data from their files. As such, the research was revised to include three counties ranging in size from large, medium to small, plus Knox County was included because its jailhouse processes were unique.

Knox County was originally going to provide the model for counties with large populations, but Knox County was exceptionally adept at providing an effective pretrial release program. Thus the defendants in Knox County who posted cash bonds were
significantly low and that may likewise affect the number of persons utilizing the services of a commercial bail bondsman, within the county. The development of this effective pretrial program is a possible area for future research. Because Knox County was unique in that regards, data from the county was included within the research, in addition to data from another large TN county, namely Shelby County. As such, there is pretrial release data present from two counties with large populations, as well as from a medium sized county and a small county.

DATA PROFILE AND ANALYSIS

Each of the four respondent counties represent differing populations with varying economic conditions, educational opportunities, job possibilities and a myriad of determinants that can affect crime rates, and thus arrest rates. As such, each county is profiled prior to discussing aggregate arrest and release data as well as inmate interviews and analysis.

TENNESSEE STATE DATA

In 2006, there were 25,745 people incarcerated in Tennessee, and that number increased to 26,838 in 2008. That is a 4.2% increase. In 2008, the state spent $619 million or 5.6% of the state budget on corrections spending. One comparison that brings these numbers into stark reality is that for every dollar of the state’s budget spent on higher education, it spent forty-one cents on corrections. 8.8% of the state’s employees were in the corrections workforce (Warren. 2008).

Tennessee Department of Corrections state prisoner population has increased by 61.1% from 12,546 in 1994 to 20,213 in 2010.

The mid year-2009 statistics indicate that Tennessee has the 22nd highest incarceration rate in the country. The incarceration rate in Tennessee increased from 430 persons per 100,000 in June 2007 to 434 per 100,000 in June 2009. That means that for every 100,000 people in Tennessee, 434 of them are incarcerated. The state’s inmate population occupied 98.6% of the prisons operating capacity.

The Local Jail Census for 2009-2010 indicates that 13.3% of the inmate populations were pretrial misdemeanants. Of the total inmate population, 40.3% of those incarcerated were convicted in the states five most populous counties: Shelby, Davidson, Knox, Hamilton and Montgomery (Karpos, 2010).

STEWART COUNTY

Stewart County is ranked 80th out of 95 counties in Tennessee in population. The 2010 Census indicated that the population of Stewart County was 13,324 persons. This number is up 7.7% from the 12,370 that were counted in 2000. This rural county sits in the northern portion of western Tennessee. The population is comprised of 94.6% Caucasians, 1.4% African Americans and 1.9% Hispanics.

According to data collected by the U.S Census Bureau, only 79.2% of residents in Stewart County aged 25 and older have a high school degree. Of that number, only 16.7% have a Bachelor's Degree or higher educational level. The per capita income in Stewart County is $19,067 which places the county significantly lower than the state average of $23,557. Approximately 17.9% of Stewart County residents live below the poverty level.

Stewart County suffers from a high unemployment rate. The county unemployment rate is 12.5% while the state unemployment rate is lower at 9.5%. It is important to distinguish that these numbers appear high in part due to the small number of people in the county. When there are fewer persons involved in the unemployment equation, the percentages reported will be higher. In actuality, only 2,396 people filed for unemployment benefits in Stewart County in 2010.

Stewart County does not have any major industrial operations within its borders. The majority of residents of Stewart County travel to other counties to work. This fact is demonstrated in data presented by Citydata.com which shows that residents have an average of 31.5 minutes recorded for their commute to work. The main sources of employment within Stewart County are as follows; construction which accounts for 17.9% of the jobs, Transportation and Movement of Materials which accounts for 7% and Agriculture and Fishing which accounts for 5% of total jobs held by Stewart County residents.

The crime rate in Stewart County is going down in many areas according to data collected by the Tennessee Bureau of Investigation (TBI). Comparison data shows that the number of persons arrested for assault in 2009 was 98 and that same number for 2010 was 80. Burglary arrests dropped from 97 in 2009 to 92 in 2010. Vandalism arrests fell from 125 in 2009 to 93
in 2010. The only category of criminal activity that saw a significant increase in the two years studied was theft of property related crimes. This number increased from 118 arrests in 2009 to 130 arrests in 2010.

According to Homefacts.com, a website established by a collaboration of realtors to inform homebuyers about neighborhoods where a buyer’s potential new house may be, Dover has an overall crime index of 65.82, placing it well below the national average of 100. This number is based on the instances of crimes being committed per 100,000 people. In the categories of assault, property crimes and burglary, Stewart County was considerable below the national average in instances per 100,000 people.

There are two law enforcement agencies in Stewart County. The Stewart County Sheriff’s Department which operates with 18 sworn officers and the Dover Police Department which has six full-time officers. The jail is operated by an administrator who has been in her position for 16 years and has a staff of 10 people.

Aggregate arrest data was compiled at the Stewart County jail. The information was provided by the jail administrator and records are stored electronically. The Stewart County jail serves as the processing center for all persons arrested in Stewart County, although due to size restrictions, many inmates are housed in neighboring Henry County.

In 2009, there were 799 arrests in Stewart County for misdemeanor offenses. Of that number, 363 or 45.4% of the persons arrested secured the services of a commercial bail bondsman to obtain their pretrial release. Only 75 persons or 9.3% of those arrested paid a cash bond to obtain their pretrial release. Of the 75, 41 persons were released by providing a property bond. This is achieved when two persons who own property in Stewart County turn over the title to that property as a guarantee that the prisoner will show up for their court date. A total of 110 persons, or 13.7% of arrested misdemeanants were released OR. Included in this number are 55 persons who were arrested on a criminal summons. This occurs when a citizen takes makes a charge against another citizen. That citizen then has ten days to turn themselves into the jail. In these cases, no bond is required and once the person is processed, they are released OR.

The numbers of persons arrested in Stewart County for misdemeanors in 2010 rose slightly to 805. Of that number, approximately 51.6% (or 416) persons secured their pretrial release by using the services of a commercial bail bondsman. A total of 66 of those arrested left jail after posting a cash bond. This category declined from the previous year’s total. OR releases increased to 129 persons in 2010, accounting for 16% of those arrested for misdemeanors. Figure 2 shows the percentages for the various types of pretrial release in 2010.

![Figure 4](source Stewart County Sheriff's Department)

Stewart County faces significant space issues which have, at times, been considerations for providing misdemeanants with the ability to obtain pretrial release. At current, the county actually has approximately 50 inmates (the number changes daily), however with a jail capacity of only 18. Therefore, the county must pay neighboring Henry County to house all of its female and juvenile inmates as well as any overflow prisoners. At a cost of $30 per day per inmate, this cost is severely inhibiting the county’s ability to construct a new jail which could better house the inmates.

A detailed study of the intake reports from the Stewart County Jail reveals that the bulk of misdemeanor arrests are for non-violent reasons. The county has a significant number of arrests for violation of check laws and driving offenses such as Driving on revoked licenses and DUI related arrests. In most instances studied, these prisoners are released via OR, or released by a commercial bail bonding company. It is important to note, however, that approximately 3 to 7 percent of those arrested are detained in the jail until their trial date. This may contribute to the logistical and budgetary problems of the Stewart County Jail.
The population of Clarksville-Montgomery County in July of 2009 was listed at 124,565, up 20.4% from the 2000 census, which listed the population at 103,455. Of its current population, 65% are white, 23% are African American and 7% are Hispanic. Clarksville is listed as the second fastest growing city in Tennessee.

The median income in Clarksville is $45,679, which places it slightly higher than that of Tennessee, which is $41,725. The current median income is an increase from $37,548, which was the median income in 2000. Clarksville, has 85.3 % of adults with a high school diploma education level, however only 19.8% posses a bachelor’s degree or higher.

Clarksville is home to Fort Campbell and Austin Peay State University. Fort Campbell is an Army base, which has approximately 25,000 soldiers. The number of soldiers, combined with spouses and dependents contribute significantly to the population and economy of Clarksville. Austin Peay is a public university with just over 10,000 students. Most students live locally in off campus housing, however approximately 14% of students live on campus. This fact is relevant because it causes a population increase during the fall and spring semesters while school is in session. As such, between the soldiers, military dependents and the students, Clarksville has a very transient population.

Clarksville currently has an unemployment rate of 9.8%. This number is slightly higher than the 9.5% unemployment rate of the state. The most common jobs in Clarksville are managerial, professional, & related careers at 28%, sales and office occupations at 23%, and service occupations at 16%. Roughly 66 percent of workers in Clarksville work for companies while 21 percent work for the government and 7 percent are self-employed. Clarksville boasts a thriving industrial sector located in its industrial park which is immediately adjacent to Interstate 24. But the Clarksville flood of 2010 had a negative impact on the Clarksville job sector. The flood caused Convergys a customer service center to lay off over 95% of its staff.

Two main incidents have negatively impacted the job market in Clarksville. In May of 2010, Clarksville was flooded after heavy rains and one of the businesses flooded was Convergys. Convergys operates customer service centers and employed over 500 persons prior to the flood. After the flood, 95% of that workforce was laid off and only recently has the company resumed operations in Clarksville, with only half of the workforce that it had prior to the flood. Secondly, Quebecor, a printing company based out of Montreal, Canada, closed a facility in Clarksville with almost no notice. Within a week of notifying the 700 employees, the plant was shut down and the jobs were shipped to Mexico. The impact of losing these jobs was more significant that those at Convergys because most of the employees at Quebecor were long term and were making wages that placed them well above the median income levels for Clarksville. With the loss of these two major job providers, the unemployment rate rose significantly and statistical data shows that there is a direct correlation between unemployment and criminal activity (Irwin, et.al., 1999.)

The violent crime rate in Clarksville is 785 incidents per 100,000 people. While this number places Clarksville below the state average in Tennessee (1027 incidents per 100,000 people), it places the city well above the national average of 676 incidents per 100,000 people. One particularly disturbing category is aggravated assault. While the national average is 315 incidents per 100,000 people, Clarksville’s average is 559 incidents per 100,000. Clarksville also has a higher crime rate than the national average in three other categories; forcible rape, aggravated assault, and burglary.

A detailed analysis of the past two-year’s arrest data in Clarksville reveals that the presence of the military in town has an impact on crime rates. In 2010, most soldiers stationed at Fort Campbell were deployed for a one-year tour of duty in Afghanistan. As the following data shows, arrest rates were slightly higher in 2009 than in 2010.

In 2010, there were 13,887 arrests made in Clarksville Montgomery County. The bulk of the arrests were made for crimes against property. 1441 individuals were charged with burglary, 1,306 were charged with destruction of property/vandalism, 1,036 were charged with theft from building and 709 were made for general theft/larceny. There were 1,016 arrests made for drugs/narcotics violations, 2,744 arrests for simple assault and 699 arrests made for aggravated assault (assault with a weapon).

A total of 15,571 people were arrested in 2009 in Clarksville-Montgomery County. There were 2850 people arrested for simple assault and 755 for aggravated assault. 1853 people were arrested for burglary and 1755 for destruction of property/vandalism.
984 were arrested for theft from building and 773 for general theft/larceny. Drugs/Narcotics violations accounted for 913 arrests.

Clarksville has two main law enforcement agencies operating within its borders. The Clarksville Police Department has 252 members and is responsible for all areas designated within the borders of the City of Clarksville, while the Montgomery County Sheriff’s Department has 395 officers and is tasked with patrolling the entirety of Montgomery County, including the land within the boundaries of Clarksville. In 2009, the Clarksville Police Department carried out 13,051 arrests while the Sheriff’s department carried out 2,322. In 2010, the Clarksville Police Department logged 11,692 arrests and the Sheriff’s department logged 2,070 arrests. All persons arrested in Montgomery County are taken to the Montgomery County Jail for processing and detention. The Sheriff’s Department operates the jail.

The high unemployment and low education rate in Clarksville-Montgomery County possibly has an impact on the crime rate. Research shows that high employment coupled with lack of education has a direct correlation to crime rate according to the USBJS. Localities which have high unemployment rates experience higher arrest rates for crimes against property and crimes against persons. It is important to note that preliminary data for 2011 suggests that the crime rate may be declining again for a second year in a row. This preliminary data is based on arrest rates through the month of August.

Collection of data was conducted at the Montgomery County Jail which serves as the detention center for all persons arrested within the county. The records are kept on daily log sheets which are filled out by jail personnel whenever a defendant is processed into the jail. Records are stored on paper and not electronically.

In 2010, a total of 7,306 persons were arrested in Montgomery County on misdemeanor charges. Of that number, 4,253, of 58.2%, were released prior to trial utilizing the services of a commercial bail bondsman. 670 persons, comprising 9.1% of the total obtained their pretrial release by paying a cash bond. 10.4% of the total arrested persons, or 759 individuals were released OR. Figure 3 above details the comparison of the pretrial release methods used in Montgomery County during 2010.
The 2009 data, as reflected in Figure 4, reflects slightly lower percentages than those recorded in 2010. 7,726 persons were arrested in Montgomery County for misdemeanor offenses in 2009. 4,437 people or 57.4% were released using the services of a bail bondsman. A total of 668 people, comprising 8.6% of the misdemeanor population were released after posting cash bonds and 589 (7.6%) individuals were released OR.

While more people were arrested in 2009 than 2010, the percentage of inmates who utilized a commercial bail bondsman increased by 0.8% in 2010 vs. 2009. Cash bond postings rose 05% in 2010 vs. 2009 and this fact may be attributed to the placement of debit card readers in the jail which allow inmates to post a cash bond using credit cards.

The greatest variance in data between the two years exists within recognizance releases. The number rose by an astonishing 2.8% between 2009 and 2010. This dramatic increase may be attributed to one significant factor when looking at the month by month breakdown of release data. Judges in Montgomery County were up for election in 2010. An empirical look at the number of recognizance releases in 2010 shows a steady increase in numbers starting in June and running through the month of elections, November. Figure 4 below details the month by month increases leading up to the November 3rd elections. An analysis of the same data from the previous year shows no build up nor does it reflect the same high numbers in the months of July Through October.

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**Figure 7: Recognizance Releases for Montgomery County**

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**KNOX COUNTY**

Knox County is home to the city of Knoxville, Tennessee’s third largest city. The population of Knox County in 2010 was reported as 432,226 which is a 13.1% change from the 2000 census which listed the population as 382,033. The racial percentages are 85.6% white, 8.8% black, 1.9% Asian. Hispanics are listed as being of any race by the Census Bureau and are included in applicable race categories and 51.5% of the population is female.

The median household income for 2009 was $45,380 which is slightly higher than the state average of $41,725. Only 14.7% of the population lives below the poverty level, which is 2.5% lower than the state average of 17.2%.

The University of Tennessee which is the major campus for the University of Tennessee system is located in Knoxville and has a current enrollment of over 27,000 students with over 9,450 faculty and staff. Over 87.7% of the population of Knox County is high-school graduates compared to the state average of 81.8%. Of the population aged 25 and above, 33% possessed a bachelor’s degree or higher level of education which is well above the state average of 22.4%.

Knox County boasts one of the lowest unemployment rates in the state. At 7.0%, it is significantly less than the 9.5% unemployment rate statewide in Tennessee. While the University of Tennessee employs nearly 10% of the working population in Knoxville, the city also serves as a thriving business and financial center as well as being the home to several research facilities associated with the University of Tennessee.

In addition, two key employers in Knoxville provide employment in the aviation industry. McGee Tyson Regional Airport (MKAA) and the Downtown Island Airport (DKK) employ over 2,800 people and are the home base for four Squadrons of the Tennessee Air National Guard. McGee Tyson Airport provides two parallel 9,000 foot runways and can accommodate any size aircraft in service today. There are over 120 nonstop flights daily with seating capacity for 4,000 passengers. 7 major airlines operate out of McGee Tyson. The Downtown Airport provides general aviation support and is located adjacent to the University of Tennessee and Downtown Knoxville. There are over 150 aircraft based there and handles over 3,000 air operations per year. The TAC Air fixed base operator provides services and fuel to commercial carriers and accommodates the general aviation industry, corporate aviation, charter flights, flight school, and flying hobbyists. Major cargo movers such as Fed Ex,
Ups, and Airborne Express also operate facilities at McGee Tyson Airport. The presence of the higher paying jobs provided by these two employers could possibly provide inhibition for inclination or necessity to commit crimes that is often experienced in the absence of good jobs.

Knoxville which is centered in Knox County, Tennessee also serves as the county seat and is home to several major law enforcement agencies. Those agencies are The Tennessee Bureau of Investigations (TBI) (East Division; established in 2008); the Tennessee Highway Patrol (District 1); the Knoxville Police Department (KCPD); the University of Tennessee Police Department (UTPD); and the Knox County Sheriff's Office (KCSO). Each of the five major agencies along with many minor agencies such as Knoxville Airport Police, Tennessee Wildlife Resource, and others are responsible for law enforcement and public safety in their respective areas however the KCSO has the responsibility for housing offenders in addition to policing the county.

Since being established in 1792, the Knox County Sheriff's Office (KCSO) has grown to be the largest law enforcement agency in East Tennessee, with over 1,000 employees, 475 whom are sworn officers. These officers are presently led by Sheriff Jimmy J.J. Jones. The KCSO operates three detention facilities: The Knox County Sheriff's Detention in East Knox County, the Knox County Jail located in downtown Knoxville, and the Work Release Center. The Detention Facility houses the Intake Center which is where all inmates are processed, fingerprinted, classified, and then assigned to one of the three facilities.

Despite low unemployment and high education rates, Knox County has seen an increase in both violent crime and property crime every year for the past 11 years. The city violent crime rate was higher than the national average by 146% in 2009 and the local property crime rate was 110% higher than the national average. The crime rates in Knoxville exceeded the state average in both categories as well. Violent crime rates were 58% higher and property crime rates were 70% higher than the average state levels.

A close analysis of the crime data indicates that the crimes dealing with larceny and theft far exceed any other category of crimes committed in Knox County. Law enforcement officials attribute this high larceny rate to Knoxville's geographic location in proximity to Atlanta. Atlanta is considered a hub for narcotics trade in the southeastern part of the country and Knoxville sits at the juncture of Interstate 75 which runs to Atlanta and Interstate 40 which runs east and west virtually the entire length of the country. This juxtaposition of interstates makes Knoxville vital to the logistical transportation of drugs from Atlanta to destination points around the eastern part of the country.

To establish baseline data for misdemeanor arrest and pretrial release rates, aggregate data was collected through the Information Technology Department of the Knox County Sheriff's Department. The data reflected interesting alternatives to other cities in regards to pretrial release methods most utilized.

In 2009, 33,077 people were arrested in Knox County on misdemeanor charges. Of that number, 9,352 persons used the services of a commercial bail bondsman to secure their pretrial release. Only 41 persons were released after posting a cash bond and a total of 4,824 were released on Recognizance. Figure 5 below details the comparison between arrests and the three discussed method of pretrial release.

![Figure 8: Aggregate Arrest Data for Knox County TN for 2009](image-url)
Upon initial inspection of the data, the fact that stands out in stark contrast is the extremely low percentage of persons paying a cash bond to obtain their pretrial release. The number is only one half of one percent of the total number arrested for a misdemeanor. That is because Knox County operates an effective pretrial release program. The effectiveness of the program is evidenced by the fact that nearly 15% of those arrested are released on some form of recognizance. This number is considerably higher in Knox County than in any of the other counties researched for this project.

Knoxville’s data for 2010 shows a slight decrease in the number of misdemeanor arrests. 30,671 persons were arrested and charged with non-felony offenses, of which, 8459 obtained their pretrial release utilizing the services of a commercial bail bondsman. This equates to approximately 27.6% of those arrested. By comparison, 58 persons paid a cash bond and 4,450 were released on recognizance. As in 2009, the total percentage of persons paying a cash bond was less than 1% of the total number arrested. The percentage of persons released on recognizance slightly to 14.5% of those arrested. Figure 6 below compares the rates of release in Knox County in 2010.

Shelby County is home to Memphis, Tennessee’s largest city. According to data collected by the U.S. Census Bureau, the population of Shelby County in 2010 was 927,644. This number rose 3.4% from the 2000 number of 897,472. The county is Tennessee’s only minority majority county. This is reflected by the fact that Shelby County’s population is made up of 52.1% African Americans, 40.6% Caucasians, 5.6% Hispanics and 2.3% Asians.

Shelby County is in the extreme south west corner of the state, and is bordered by the Mississippi River. The city is famous for being the home of Elvis Presley and also for hosting many arts and musical festivals associated with the city’s Jazz and Blues musical heritage.

The population of Shelby County is more educated than the statewide average. The U.S. Census Bureau reported in 2010 that 84.7% of the residents aged 25 or over had a high school diploma or higher education level. This is 2.9% higher than Tennessee’s state average which is 81.8%. Of the survey respondents, 27.5% reported having a Bachelor’s Degree or higher level of education. This number is 5.1% higher than the state average of 22.4%.

Shelby County has an unemployment rate of 10.9%. This number is 1.4% higher than the state average of 9.5%, and 20.9% of Shelby County residents live below the poverty line. This is a startling fact considering Shelby County residents have a per capita income of $25,050 which is higher than the states average of $23,557.

Shelby County has the highest crime rate in the state of Tennessee. Figure 8, shown below, chronicles the last ten years of crime rates in the categories of robbery, assault, burglaries and thefts.
To put these numbers into perspective, the Figure 9 compares thefts in Memphis to the average number in of thefts in similar sized cities in the United States. As the figure demonstrates, Memphis almost doubles, on average, the number of thefts per year as other cities of the same size in the United States.

![Figure 8: Source CitiData.com](image)

The top occupations in Memphis are low paying jobs which may contribute to the low level of per capita income, and in turn, the high rate of theft related crimes. The two highest percentages of workers are classified as laborers and material handlers at 6% and maintenance workers and grounds keepers at 6%.

The two major law enforcement agencies in Shelby County are the Memphis Police Department and the Shelby County Sheriff’s Department. Other law enforcement agencies in the county include the University of Memphis Police Department and the Tennessee State Troopers western headquarters.

The Memphis Police Department operates out of nine precincts and has 2536 commissioned personnel. In addition, the department employs 441 civilian personnel. The Memphis Police Department operates on a budget of over 231 million dollars. In 2010, the Memphis Police Department received 956,467 calls, resulting in 50,335 misdemeanor arrests.

The Shelby County Sheriff’s Department operates out of Germantown which is a suburb of Memphis. The Sheriff’s Department runs the county jail. There are two locations, one for men and one for women. The average daily census for the jails is around 3,000 persons. The Sheriff’s Department employs 1785 commissioned officers and 256 civilians. Aggregate arrest data for Shelby County was obtained through the Sheriff’s the Information Technology Department.

In 2009, a total of 33,564 persons were arrested in Shelby County on misdemeanor charges. Of that number, 7,825 were released using the services of a commercial bail bondsman. This number constitutes 23.3% of the total number of persons arrested. A total of 2,274 persons paid a cash bond to obtain their pretrial release accounting for 6.7% of those arrested and 1,533 persons were released OR making those persons represent 4.6% of the total arrested. Figure 10 below shows the variance between those who obtained a pretrial release and those who did not.
In 2010, a total of 35,418 persons were arrested on misdemeanor charges. That number was up 9.4% from 2009. The percentage of people using the services of a commercial bail bondsman dropped to 22.5%, accounting for 7,977 persons. Categorically, the use of Cash Bonds and releases on OR both dropped. Cash Bonds were only posted for 5.7% of those arrested for misdemeanors and OR releases fell to only 4.5% of the total arrested. The result of all of these decreases, is an attendant increase in the jailhouse populations. Figure 11 breaks down the misdemeanant population for 2010 and details what pretrial release methods were used.

AN ANALYSIS BETWEEN COUNTIES

As the figure below shows, there is almost no order to the patterns of pretrial release for misdemeanants. For cross-county comparison, percentages must be used to accommodate for the differences in the total number of persons arrested. By using this method of comparison research, several things become apparent.
First, the aggregate data suggests that in 2009, Montgomery County was the most effective at moving pretrial misdemeanants out of the jails. A total of 73.6% of the total number of arrested misdemeanants were released via one method of pretrial release or another. Montgomery County was also the most profitable county for bail bondsman to operate in, having done business with 57.4% of the misdemeanants.

The effectiveness of Knox County’s pretrial release program is evident in the 14.6% OR release rate. The OR release rate in Knox County is greater in both number and percentage to the total of the other three counties researched. This number seems to be born out of necessity, as the data above details that Knox County almost rivals Shelby County in the total number of misdemeanor arrests.

The data from Shelby County suggests that the rate of prisoners who stay in jail may be higher because of economic conditions in the Memphis area. Bondsmen are not quick to try and work with prisoners who cannot pay for their services and the 6.7% release rate on Cash Bond indicates that arrestees in Shelby County cannot readily afford to post their own bond. Combine this data with the high level of persons living in poverty and a logical conclusion can be drawn that many people arrested in Shelby County simply cannot afford to get out of jail.

In the research of Stewart County, the question was posed that because of the small population, would personal relationships affect the ability of a person to secure a pretrial release. Specifically, the research was intended to determine if there was a significantly higher percentage of OR releases than in larger counties. While Stewart County’s 13.7% OR release rate is higher than most of the counties researched, half of the persons released OR in Stewart County actually turned themselves in response to a Criminal Summons, and were released after processing.

2010 CROSS-COUNTY STATISTICAL DATA

An analysis of the data provided by the counties for 2010 reveals similar trends to those of 2009. The overall number of persons arrested for misdemeanors in the counties researched dropped, affecting the overall percentages of the three pretrial release methods.

Montgomery County achieved an overall pretrial release rate of 78.1% of all misdemeanants. The percentage of persons using a commercial bail bondsman was also highest in Montgomery County, rising .8% from the previous year. It is important to note that Montgomery County had a small dip in the number of misdemeanor arrests from 2009, primarily due to the decrease in population when the soldiers from neighboring Fort Campbell were deployed.

Shelby County is the only county researched where the number of misdemeanor arrests increased significantly. This may be due to the fact that a new Director was appointed to the Memphis Police Department in April of 2010. A cross analysis of the data between years also show a slight decline in the percentages of persons released via any of the three major pretrial release methods. During 2010, an existing pretrial release program was revived and data suggests that as the program gains approval from the judicial and political systems, the pretrial release trends of Shelby County may more resemble those of Knox County.
The statistics for Knox County remained fairly constant between the two years. Knox had more pretrial OR releases than the other counties combined, and while the county fell behind Stewart in percentage of misdemeanants released OR, the effectiveness of their pretrial program remains apparent when reviewing the data.

Stewart County’s data suggests that there is an increasing popularity for citizens to take out a Criminal Summons on other citizens. Detailed analysis of the Intake Logs from the Stewart County Jail show that the number of Criminal Summons Issued rose from 55 in 2009 to 79 in 2010. In most instances, the statutes violated are minor offenses, and workers at the Stewart County Jail are concerned that the Criminal Summons process will clog up an already overwhelmed jail.

**CONCLUSION**

The bulk of research on crimes has mostly focused on the number and percentages of individuals incarcerated for criminal offences. There has not been much focus on pretrial arrests and means or process of release, this research focused on processes utilized by TN in the release of pretrial misdemeanant.

Research indicates that the majority of jails across the nation are filled to capacity, which leads to attendant corrections policy costs. It would seem reasonable that corrections policy would focus more on OR for minor misdemeanants. This would help alleviate overcrowding within county jails and at the same time save the counties, the fund that would have been spent on housing these misdemeanants. Within TN specifically, this research indicates that for the county jails studied, the majority of the misdemeanants were released to bail bonds men. A very minor percentage were released on OR, and a negligible percentage were released on OR, and the rest were detained in jails until time for their trial. Knox and Stewart counties were progressive in that, they had the most releases on OR, at 14.8% and 16%. This finding has important policy implications especially since most states are searching for ways to trim down their jail and prison populations so as to trim down their corrections costs. One major limitation of this research that must be mentioned with regards to the findings is that the counties that were selected for this research were based on size and convenience. This must be borne in mind when interpreting the results of the research.

If counties were to make more vested efforts in actually setting up processes where the focus would be on releasing misdemeanants that pose no risk of flight on OR, in lieu of bail bonds, that would help simultaneously with the issue of overcrowding in jails as well as the issue of increasing corrections costs. Future studies should focus on the specific criteria utilized by the counties with regards to OR and if those criteria could be applied more readily to pretrial detained misdemeanants. Such research can aid in developing effective pretrial processes that ensures seamless processing and release of pretrial defendants, without heavy reliance on bail bonds men, especially since most states are searching for ways to trim down their jail and prison populations so as to trim down their corrections costs. One major limitation of this research that must be mentioned with regards to the findings is that the counties that were selected for this research were based on size and convenience. This must be borne in mind when interpreting the results of the research.

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**REFERENCES**


A COMPARISON OF SPECIAL EDUCATION LAWS IN GHANA AND THE UNITED STATES

Samad M. Dimbie
Tennessee State University, USA

ABSTRACT
This study compared Inclusive Education legislations and practices of Ghana with that of the United States with the view to determining their similarities and differences. The comparative framework largely involved the least restrictive environment provision of the Individuals with Disabilities Education Improvement Act (IDEIA) of the United States, the Persons with Disability Act, the Special Education Needs Policy Framework of Ghana were the main sources of data in this study. The qualitative research design approach was used in the study, and the content analysis technique used during the comparative analysis process. The results showed that even though in principle, Ghana and the United States practice inclusive education, the two countries differ markedly in their inclusive education models and practices. Inclusive education in Ghana and the United States share some similarities with regard to the right of children with disabilities and those without disabilities to be educated together in the same educational setting. However, there is a big difference with regard to special educational services delivery and educational placements for children with disabilities. Challenges to the successful implementation of inclusive education are identified and recommendations made with the view to exploring ways for improvement in the United States and Ghana.

Keywords: Inclusion, Integration, Mainstreaming, Inclusive Education Models, Education for All (EFA).

INTRODUCTION
Ghana and the United States have both committed a lot of efforts into making inclusive education an integral part of their national development policies. The commitment of Ghana and the United States to the inclusive education concept two countries has been largely influenced by the 1990 Education for All (EFA) agenda orchestrated in Jomtien, Thailand and the subsequent World Conference on Special Needs Education held in Salamanca, Spain, June 1994 and Dakar, Senegal in 2000 (UNESCO, 2000). The main focus of the EFA forum was to provide equity and appropriate education for the world’s most deprived children, and identify the resources needed to overcome barriers to providing quality education. As an overall principle, inclusive education serves as a guiding principle to all education policies and practices beginning with the fact that education is a basic human right and the foundation for a more just and equal society (Heijnen, 2005).

In Ghana and the United States different inclusive education models exist as a result of the differences in the meaning of the term disability or what constitute disability (Valentine, 2001). Secondly, disability and inclusive education practices include an array of issues that cut across health, education, social welfare, and employment sectors across nations (Bunch, Dore, Dore, Finnegan, & Humphries, 2005). Consequently, it is expected that the success of inclusive education will depend largely on how strong a nations health, social welfare and educational infrastructure are. Nations who have weak educational and health systems are more unlikely to practice inclusive education successfully (Cameron and Valentine, 2001).

Rational for the Study
Providing inclusive education for deprived and vulnerable populations is a compelling and yet challenging a phenomenon for many countries the world over (Cameron and Valentine, 2001). For instance, a sustained economic, medical and educational infrastructural support is critical to the success of the inclusive concept (Cameron and Valentine, 2001). However, considering that there is a vast disparity in the economic resources and the fact that inclusive education operates in different forms (models) in Ghana and the United States, the need to compare the different inclusive education models become a matter of extreme interest. Furthermore, the United States and Ghana have, for several decades, been involved in inclusive education practice and have even become signatories to several international and nongovernmental treaties, such as the Salamanca Conference in 1994, the United Nations Universal Declaration of Human Rights and the Convention on the Right of the Child (UN) 1989 (Chitiyo, 2008). The rationale for this study is, therefore, an assessment of inclusive education in the two countries with the view to finding their differences and similarities. Furthermore, the researcher has a special interest in the education of vulnerable populations as an exceptional educator and by virtue of the fact that the researcher has lived in and schooled in both countries.
Statement of the Problem

Following the 1990 Salamanca Conference, many nations, including Ghana and the United States, have committed a lot of effort into providing appropriate and quality education to all their citizens including the most vulnerable populations together with their peers without disabilities (IDEIA, 2004). In the United States, the Least Restrictive Environment (LRE) provision in the Individuals with Disabilities Education Act (IDEA) requires the education of children with disabilities in the regular education classroom “to the greatest extent appropriate” (IDEIA, 2004). Similarly in Ghana, the inclusive concept has been addressed through various legislations such as the Persons with Disability Act (PWDA) and the Special Education Needs Policy Framework (SENPF). However, while the implementation of the inclusive concept is a nationwide phenomenon, it is still on pilot bases in selected schools in Ghana (Agbenyega, 2007). So many factors account for this disparity, an issue that formed the focus of this research study.

Purpose of the Study

The purpose of this study was to compare the concept of inclusive education in the United States and Ghana with the view to determining their similarities and differences. It was also to compare some of the inclusive education models in the two countries with the view to providing a deeper insight into inclusive education from the perspectives of the United States and Ghana.

In the United States, IDEA requires the education of children with disabilities in the regular education classroom “…to the greatest extent appropriate” (IDEIA, 2004). Any alternative placement can come about only if the general education classroom is not beneficial to the student as a result of the student’s disability. The inclusion model has been a widespread phenomenon in many school districts across the United States since the passage of IDEA and its subsequent legislations (McLauhglin et al., 2006). Similarly in Ghana and many other countries around the globe, inclusive education has taken center stage in their broad national education agenda (Chitiyo, 2008). In Ghana, for instance, the inclusion concept has been expanded to many school districts on experimental basis for about a decade now.

Evidently, Ghana and the United States have both demonstrated their commitment to the establishment of special education legislations in varying degrees. Though the United States is not a signatory to the Salamanca Declaration, it has amply demonstrated its commitment to the inclusive education concept through legislative mandates and the adoption of inclusive education models across the country (McLauhglin et al., 2006).

Significance of the Study

This research study is significant in that it will provide special education researchers with valuable information with regard to the varying approaches to inclusive education in the United States Ghana. Furthermore, by virtue of it being the first research study (at least, not in any peer reviewed literature) that directly compares the LRE of IDEIA with inclusive education laws of Ghana, it is hoped that this research study will serve as a spring board for future research studies into similar areas, such as special education in Ghana and the United States. Finally, it is hoped that this study will serve as an educative forum for stakeholders (parents, special educators and policy makers) to work more collaboratively towards improving inclusive education laws and practice in Ghana and the United States.

Limitations of the Study

This study is limited by a number of factors. First, the fact that there is no one single approach to the implementation of the inclusive concept makes the comparison inclusive education in two countries with relatively different education systems a daunting one. Secondly, there are limitations to the availability of literature relating to this topic. That is, there is no evidence of any data, at least, in any peer reviewed publications or book, which directly compared the special education legislations of Ghana and the United States.

Weakness of the Study

The data collected and analyzed in this study are strictly qualitative. The absence of descriptive statistics could therefore, bring the content validity of the study into question. Furthermore, the comparison of inclusive education legislations of two countries that have different socio-cultural, historical experiences whose progress is measured in very different political and economic pace, could impact the outcome of this study.

RESEARCH QUESTIONS

The following research questions guided this research study:
1. How do the inclusive education legal mandates of the United States and the Persons with Disability Act and the Special Education Needs Policy Framework of Ghana compare and contrast with regard to inclusive education?

2. How does the Persons with Disabilities Act of Ghana compare and contrast with regard to inclusive education practices in the United States?

REVIEW OF LITERATURE

The Inclusive Concept: Origin

The term inclusive education defies a common definition for the simple reason that what constitute inclusive education differ from country to country and is could be seen from different perspectives. These include historical trends, educational philosophies and the overall social developmental agenda of individual nations (Heijnen, 2005). The original focus of the inclusive education concept however, was on the education for special needs children, promoted by special interest groups who thought that certain disability groups, such as the visually impaired, hearing impaired, physically challenged and mentally challenged, were deliberately and systematically excluded from mainstream education (Heijnen, 2005).

The inclusive education concept however, gained more popularity following the international conference that called for an Education for All (EFA) agenda held and adopted in Jomtien, Thailand in 1990. The main focus of EFA was to provide equity and appropriate education for the world’s most vulnerable and deprived children, youth and adults (Heijnen, 2005).

The World Conference on Special Needs Education held in Salamanca, Spain, in June 1994 equally provided a major impetus to the inclusive education concept and Since that conference many governments across the globe have devoted their efforts into making inclusive education an integral part of their broad national education policy. (Heijnen, 2005).

UNESCO (2000) underscored the importance of education for children with disabilities and other vulnerable children in inclusion settings in the following statement:

*Schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations, children from linguistic, ethnic or cultural minorities and children from other disadvantaged or marginalized areas or groups. (UN, 2000, p. 132).*

The fundamental principle of the inclusive school is that all children should learn together, wherever possible, regardless of any difficulties or differences they may have. Inclusive schools must recognize and respond to the diverse needs of their students, accommodating both different styles and rates of learning and ensuring quality education to all through appropriate curricula, organizational arrangements, teaching strategies, resource use and partnerships with their communities. There should be a continuum of support and services to match the continuum of special needs encountered in every school.

Some education researchers and scholars and special education advocates use inclusive education interrelated terms interchangeably with inclusion as though they were the same, while in fact there are distinctions in meaning (Bunch et al., 2005). It is important to explain these terms for the purposes of clarity. Consider the meanings of the following terminologies for example:

**Mainstreaming**

A system of educational placement where children with disabilities are moved from separate schools and classes to the regular education classrooms for part of, or all of, the school day, regardless of whether or not it is beneficial to the student (Bunch et al., 2005). Mainstreaming was particularly widely practiced in the 70s and 80s as an attempt to meet the LRE requirements (CEC, 2009). Students often received academic instruction in special education classes and joined their peers without disabilities for nonacademic or extracurricular activities, such as lunch recess, physical education, art and music (CEC, 2009).

**Integration**

The term integration carries some political connotations and is used primarily as a legal term that is more associated with the civil rights/racial desegregation legislation in the 60s and the period before. Consequently, its use carries a greater implication than the physical blending of children from different ethnic backgrounds. In relation to schools, integration is a way of fostering social and academic interaction among children. In relation to special education, integration connotes the idea of desegregating
students with disabilities from pull out programs, self-contained classrooms, special schools or institutions and integrated into the realm of regular classrooms (CEC, 2009).

**Progressive Inclusion**

Progressive inclusion refers to the evolutionary process (from zero inclusion to full inclusion) of providing special education and related services to persons with various degrees of disabilities (Reynolds & Birch, 1988). With specific reference to the United States, the period of zero inclusive education also refers to the period when the United States was emerging as a nation with no special educational facilities (Stainback, 2000).

**Full Inclusion**

A most recent definition of inclusion puts it as “a broadened concept of inclusive education can be viewed as a general guiding principle to strengthen education for sustainable development, lifelong learning for all, and equal access of all levels of society to learning opportunities” (UNESCO, (International Bureau of Education (IBE), 2008b).

Following the Salamanca Declaration, many countries have established special education and inclusive education laws in their bid to making public education more accessible to children with disabilities and other disadvantaged children Chitiyo (2008). Ghana and the United States have both demonstrated their commitment to the establishment of inclusive education in varying degrees. Though the United States is not a signatory to the Salamanca Declaration, it has amply demonstrated its commitment to the inclusive education concept through legislative mandates and the adoption of inclusive education models across the country (McLauhgin et al., 2006).

**INCLUSIVE EDUCATION IN GHANA**

**Legislations and Policies**

Four major legislations and a special education policy framework are significant to the inclusive education concept in Ghana: the National Strategic Plan, 2004; the Persons with Disabilities Act of 2006, the Special Educational Needs Policy Framework of 2005 and, most recently, the Education Act of 208,

**The National Strategic Plan 2004 Policy in Early Childhood Care and Development**

Another effort at making special education services more accessible to persons with disabilities by the government was the introduction of the National Education Strategic Plan (NSP, 2004). The broad objective of the government strategic plan was to “provide equal educational opportunities for children and youth with special needs at pre-tertiary levels to promote access and participation, quality, and inclusion” (NSP, 2004, p.14). The major Highlights of the provisions include:

- Providing programs for the deaf, the blind, and the mentally-handicapped in both segregated and integrated settings from basic through to the tertiary level.
- Educating the physically challenged to be mainstreamed and not in special schools.
- Moving towards inclusive education.
- Training special education resource teachers.
- Providing support to both the teachers and the pupils mainstreamed.
- Providing resource materials in the form of teaching/learning materials and assertive devices/materials to enhance the teaching and learning process (NSP, 2004).

**The Special Educational Needs Policy Framework (SENPF)**

The Special Education Needs Policy Framework (SENPF) is a special education policy regulation that exclusively addressed special education and special education services delivery in the country (Ghana Education Service, 2005). SENPF contains policies and regulations relating to how, where and when children with disabilities can receive special education and related services. Similar to the Individuals with Disabilities Improvement Act (IDIEA) of the United States, the SENPF establishes policy guidelines that relate to issues such as special education categories, free and compulsory education for children with disabilities, parents’ participation in the education of their children with disabilities, individualized education program (IEP) and related services.
The Education Act of 2008 (Act 778)
The Education Act of 2008 is the latest piece of legislation that addresses the general educational needs of the country with a special commitment to inclusive education. For the first time in Ghana’s educational history the Education Act of 2008 provided a working definition for inclusive education as:

*the value system which holds that all persons who attend an educational institution are entitled to equal access to learning, achievement and the pursuit of excellence in all aspects of their education, and which transcends the idea of physical location but incorporates the basic values that promote participation, friendship and interaction (Education Act of 2008, p. 5).*

The Persons with Disability Act (Act 715)
The Persons with Disability Act is more or less a civil rights legislation comparable to the Rehabilitation Act of 1973 (P.L. 93-112) of the United States in many ways. Like the Rehabilitation Act of the United States, the law protects persons with disabilities from being discriminated against by employers on the basis of their disability (regardless of whether the employer enjoys government subventions or not). It is also similar to the Americans with Disabilities Act (ADA) in that it mandates easy access to public accommodations, transportation, and telecommunications by persons with disabilities. However, the PWDA falls short of the general expectations of most special educators in that only seven out of the sixty sections categorically address the educational needs of children with disabilities.

INCLUSIVE EDUCATION PRACTICE IN GHANA

In Ghana, the general educational policy favors the education of children in the general education classroom (GES, 2005) where children with disabilities receive academic instruction in regular educational settings together with their peers without disabilities, depending on the severity of disability (GES, 2005). Children with visual and hearing impairments are particularly educated in mainstream schools, while those with “physical, sensory or intellectual impairments, which have a lifelong adverse effect on his/her ability to access the regular educational facilities are educated in segregated settings” (GES, 2005, p. 21). The following disability categories receive educational instruction in the general education settings:

- Hearing impairments/deafness
- Visual impairments/blindness
- Intellectual disability
- Autistic spectrum disorder
- Physical disability (GES, 2005).

The Table (1) below shows models of Inclusive education and educational placement of children with disabilities in Ghana.

<table>
<thead>
<tr>
<th>Model</th>
<th>Type of Program</th>
<th>Student category</th>
<th>Type of Facility</th>
<th>Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1: Integrated Education Program (IEP)</td>
<td>students with low vision and blindness</td>
<td>General education Classroom</td>
<td>Pupils are withdrawn for remedial teaching</td>
<td></td>
</tr>
<tr>
<td>Model 2: Special School</td>
<td>the visually impaired</td>
<td>Segregated residential school</td>
<td>Skills in Braille writing and reading; Orientation and Mobility; acquire basic literacy and numeracy as transition to formal basic schooling; all for a maximum period of two years.</td>
<td></td>
</tr>
<tr>
<td>Model 3: Units</td>
<td>Intellectually challenged</td>
<td>Unit classrooms built within the premises of mainstream school</td>
<td>Pupils with intellectual disability are taught on separate curriculum</td>
<td></td>
</tr>
<tr>
<td>Model 4: Inclusive Schools</td>
<td>Intellectually challenged and students with learning disabilities</td>
<td>General education classroom</td>
<td>With Special Education Resource Teacher Support</td>
<td></td>
</tr>
<tr>
<td>Model 5: Inclusive Schools</td>
<td>Students with learning difficulties</td>
<td>General education classroom</td>
<td>Regular education classroom. No Resource Teacher Support</td>
<td></td>
</tr>
<tr>
<td>Model 6: Hostel Support</td>
<td>Students with low vision and blindness.</td>
<td>Hostel Support</td>
<td>Special Education Resource Teachers for the visually impaired</td>
<td></td>
</tr>
</tbody>
</table>

Children with Disabilities in Mainstream Schools (Integration)

The placement of children with disabilities and special education needs occur at different levels referred to as models: Children with hearing impairments/deafness, visual impairments/blindness intellectual disability, Autistic spectrum disorder and Physical disabilities are educated in mainstream schools (SENPF, 2005).

On the other hand, children with *special education needs* continue to receive instruction in segregated settings (SENPF, 2005). The placement options of children with disabilities and special education needs are presented in the form of a pyramid. The first level of the pyramid represents the level at which they are integrated into the regular education classroom for the entire school day. The middle level represents the level at which children with disabilities receive some instruction in the regular education classroom and receive the rest in the resource classroom (SENPF, 2005).

**Special/Segregated Schools**

A child identified as having Special Education Needs (SEN) such as emotional, behavioral, or intellectual, who is described as having a “condition that calls for special education provision that is different from or in addition to what is normally available in regular schools within the child’s community” (SENPF, p. 21) will continue to receive educational instruction in segregated settings (See previous list of disability categories under SEN).

Special or segregated schools are boarding or day facilities typically sited remotely from the main city centers and headed by house parents. The special or segregated schools were set up in the 1970s purposely to educate children with severe and multiple disabilities at the basic education level (SENPF, 2005). Children with disabilities and special education needs are taught the general education curriculum like their peers without disabilities (SENPF, 2005). Other functions of the special schools include providing the necessary accommodations and adaptations for children with severe and multiple disabilities, employing special educators to provide free and appropriate education to the children with disabilities, and developing appropriate transitional programs for students before they graduate, just to mention a few (SENPF, 2005).

**LEGISLATIONS THAT SUPPORT INCLUSIVE EDUCATION THE UNITED STATES**

**IDEA**

The Individuals with Disabilities Education Act (IDEA) and its subsequent amendment in 2004, does not mention or require inclusive education (Heijnen, 2005). Instead, the law requires that children with disabilities be educated in the “least restrictive environment appropriate” to meet their “unique needs.” And the IDEA contemplates that the ”least restrictive environment” analysis will begin with placement the regular education classroom (Heijnen, 2005).

Inclusive education in the United States is represented by the LRE provision in the parent act of IDEA, Act, and P.L. 94-142 (EAHCA). In 1990 the EAHCA was reauthorized under a new name, the Individuals with Disabilities Act (IDEA) and most recently, the Individuals with Disabilities Improvement Act (IDEIA) of 2004, P.L. 108-446.

**Least Restrictive Environment**

Least restrictive environment is the IDEIA provision that requires children with disabilities to be educated together with their peers without disabilities in the regular education classroom, and requires that they receive education in restrictive settings only when providing instruction to them in the general educational setting is not beneficial to them (IDEIA, 2004). The LRE provision emphasizes a continuum of placement options from the least restrictive placement to the most restrictive whenever appropriate, and reads as follows:

> To the maximum extent appropriate, children with disabilities, including children in public or private institutions or under care facilities, are educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily (IDEA, 1997).

IDEIA placement options are presented in the form of a cascade in Figure 2.
RESEARCH DESIGN

The qualitative research approach was employed to conduct this study. The content analysis technique was the main instrument used to analyze the data. The content analysis technique was considered most appropriate for this study because it involves organizing the data and breaking them into manageable units and synthesizing them (Bogdan & Biklen, 2003). It is also deemed most suitable for qualitative studies of this nature because it allows the researcher to go through large volumes of documents fairly easily. Furthermore, it is best suited for analyzing written communication (Lincoln & Guba, 1985).

Sources of Data

The data sources used for this research study involve official legal data. With regard to the United States the legal sources refer mainly to PL 94-142 with specific reference to the Least Restrictive provision. In the case of Ghana, the official legal documents involve the Persons with Disabilities Act of 2006, the Government Education Strategic Plan, 2004, the Special Educational Needs Policy Framework of 2005 and, the Education Act of 2008.

Data Collection Procedure

Hard copies of the IDEIA, P.L. 108-446 were obtained from the United States Department of Education official website via the internet and, in the case of Ghana, the Persons with Disability Act of 2006 and the Special Education Needs Policy Framework were obtained through government officials at the Ministry of Education.

Data Analysis

The data collected were sorted and coded by the principal researcher and two trained research assistant as a way of showing rigor and credibility. The researchers also compared notes to ensure reliability. The researchers looked for themes, paragraphs, concepts, or semantic units in the Least Restrictive Environment (LRE) in IDEIA and the PWDA in order to find similarities and differences. a careful interpretation of the conceptual units helped in providing insight into the similarities and differences that this study sought to determine (Agbenyega, 2007).
Table 2: Educational placement options of children with disabilities in the United States

<table>
<thead>
<tr>
<th>Type of disability</th>
<th>All environments</th>
<th>Regular school, time outside general class</th>
<th>Separate public school for students with disabilities</th>
<th>Separate public residential facility</th>
<th>Parentally placed in regular private schools</th>
<th>Homebound/hospital placement</th>
<th>Correctional facility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Less than 21 percent</td>
<td>21–60 percent</td>
<td>More than 60 percent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All students with disabilities</td>
<td>100.0</td>
<td>58.0</td>
<td>21.7</td>
<td>15.1</td>
<td>3.0</td>
<td>0.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Specific learning disabilities</td>
<td>100.0</td>
<td>60.9</td>
<td>28.4</td>
<td>8.6</td>
<td>0.6</td>
<td>0.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Speech or language impairments</td>
<td>100.0</td>
<td>86.4</td>
<td>5.7</td>
<td>4.7</td>
<td>0.3</td>
<td>#</td>
<td>2.8</td>
</tr>
<tr>
<td>Intellectual disability</td>
<td>100.0</td>
<td>16.2</td>
<td>27.4</td>
<td>48.9</td>
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<td>39.2</td>
<td>19.4</td>
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<td>2.0</td>
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<td>46.2</td>
<td>19.1</td>
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<td>8.3</td>
<td>3.9</td>
<td>1.2</td>
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<td>4.9</td>
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<td>24.6</td>
<td>11.3</td>
<td>1.6</td>
<td>0.2</td>
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<td>Visual impairments</td>
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<td>61.6</td>
<td>13.9</td>
<td>12.0</td>
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<td>20.6</td>
<td>16.2</td>
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RESULTS

Table 3

<table>
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<th>Similarities</th>
<th>Differences</th>
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<td>Both countries require the education of children with disabilities in the regular educational settings</td>
<td>Inclusion (LRE) in the USA is more comprehensive in IDEIA than in the PWDA and the SENPF of Ghana.</td>
</tr>
<tr>
<td>Both countries require different placement options.</td>
<td>There are more disability categories in the inclusive education program in the United States than in Ghana.</td>
</tr>
<tr>
<td>Both countries use individualized Education Program in the inclusive classroom</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION AND RECOMMENDATIONS

The inclusive education concept has been on pilot bases in the southern part of the country for nearly a decade. Children with visual impairments receive instruction in the general education classroom at the first and second cycle levels (elementary and middle school levels respectively), while children with hearing impairments and those who are moderate mentally challenged received instruction in the general education classroom at the second cycle level (Ghana Education Service, 2005b).
The categorization of disabilities in Ghana is still largely limited to the four traditional disability categories, such as hearing impairments, visual impairments, the physically handicapped and mentally challenged (Ghana Education Service, 2005). Consequently, special education teacher training is tailored toward educating persons with disabilities in the four categories only. This poses a monumental handicap in government’s efforts in identifying and proved special education services to other children in the other disability categories, such as autism (Ghana Education Service, 2005).

The limitation of assessment centers to only five in the entire country (Ghana Education Service, 2005b) poses a serious challenge to special education and special education services delivery. More significantly, the assessment centers are restricted to assessing only children suspected to have hearing impairments, leaving out many potentially disabled children unidentified (Ghana Education Service, 2005b).

**Political Interference in the Ghanaian Educational System**

Also, Ghana’s special education laws are largely “unwritten” That is, special education laws are neither codified as a single nor serialized as compared to the special education law in the United States. Since its passage into law in 1975, the Education of All Handicapped Children Act, P.L. 94-142 and its subsequent revisions (the most recent being the IDEIA, 2004), has remained the only major piece of federal government special education legislation in the United States. In Ghana, all the significant special education legislations are scattered in other legal documents. For instance, the issue of inclusive education is scattered in other legal documents. For instance, the issue of inclusive education is contained in the 2008 Education Act (Act 778), while the right to education by children with disabilities is found in the PWDA.

**Lack of Political Will/Commitment**

Government also appears to lack the political will to deal decisively with issues relating to the education of children with disabilities. A show of political will and commitment includes making substantial budgetary allocations to research and other academic programs relating to special education.

**Recommendations for Ghanaian Stakeholders**

For inclusive education to succeed in Ghana more efforts should be made at improving the inclusive education models that are currently in operation. For example, the unit classroom system, where students with special needs are placed to receive special assistance should be abolished. More efforts should be made at placing students in the regular education classroom.

More efforts should be made at developing special education textbooks that will highlight the broad issues in special education such as inclusive education, appropriate instructional strategies, the “person first” principle and options synonymous to the least restrictive environment concept in the United States.

**Improving an Inclusive Education Support System**

Inclusive education works best when the necessary support systems are in place. It is therefore, critical for policy makers to invest in a comprehensive support system in order to improve the current situation. An effective support system includes:

- An expansion of healthcare infrastructure
- Training more competent health professionals (such as physicians, physical therapists, clinical psychologists, nurses and family nurse practitioners, speech therapists, etc.) and other care givers who are traditionally involved in diagnosing of children for the purposes of determining eligibility for special education and related services.
- Training of more paraprofessionals who will assist regular education and special educators in the classrooms.
- More evaluation and diagnostic centers should be set up in order to identify as many potential children as possible for special education and related services.

**Recommendations for United States Stake Holders**

- Limiting the disability categories to a definitive number of 13 could result in denying many children with disabilities whose disabilities do not fall within the official bracket.

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Education for All Handicapped Children Act (EAHCA), P.L. 94-142.


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A RESEARCH EXPLORATION OF FINANCIAL LITERACY EDUCATION FOR AFRICAN AMERICAN AND LATINO AMERICAN HIGH SCHOOL STUDENTS

Darryl W. Williams¹, Brian C. Grizzell² and Darrell Norman Burrell³,⁴,⁵
¹Walden University, USA, ²Colorado State University-GC, USA, ³Virginia International University, USA, ⁴A. T. Still University, USA and ⁵Marylhurst University, USA

ABSTRACT
There is a great complexity related to the study of financial literacy in minority communities but understanding the social psychological impact of this issue with the turbulent economic indicators of the fall of 2011 is critical. Economists that study the demographic impact have voiced concern that the US housing foreclosure crisis could cause some minority communities to lose half their wealth from related financial issues with subprime mortgages. This applied research case study explores the value of financial literacy from exploring a framework of what the curriculum should look like if provided to African-American and Latino American high school students.

INTRODUCTION
"Millions of Americans accumulate unmanageable debt, fail to save for a rainy day (and retirement), and make countless other poor financial choices that eventually leave them worse off. But before railing against consumer stupidity, consider this: It's not always their fault. Palmer (2008) asserts, “Many of those bad decisions are caused or exacerbated by a lack of knowledge". Financial literacy is amongst the most imperative competencies required to survive in today's economy and the acquisition and possession of wealth.

According to Federal Reserve Chairman Ben S. Bernanke American minorities need to strengthen their financial literacy. It's absolutely right the difference between minority and white wealth is very significant, and part of that is related to income levels where whites have a wealth. Part of the cause, he said, is a lack of “financial education There needs to be a broader understanding in minority communities, which haven't had that much exposure, about saving and building a credit record and being part of the mainstream economy. So one thing that could help would be to try to strengthen the financial literacy and financial education of U.S. minorities (Bernanke, 2009).

Generally speaking, wealth is the value of everything a person or family owns, minus any debts. However, for purposes of studying the wealth distribution, economists define wealth in terms of marketable assets, such as real estate, stocks, and bonds, leaving aside consumer durables like cars and household items because they are not as readily converted into cash and are more valuable to their owners for use purposes than they are for resale (see Wolff, 2004, p. 4, for a full discussion of these issues). Once the value of all marketable assets is determined, then all debts, such as home mortgages and credit card debts, are subtracted, which yields a person's net worth. In addition, economists use the concept of financial wealth also referred to in this document as "non-home wealth" which is defined as net worth minus net equity in owner-occupied housing. As Wolff (2004, p. 5) explains, "Financial wealth is a more 'liquid' concept than marketable wealth, since one's home is difficult to convert into cash in the short term. It thus reflects the resources that may be immediately available for consumption or various forms of investments." The societal complexity in America is that many people do not understand the nature of these terms and their applications to their lives (Palmer, 2008).

The wealth disparity is the most important indicator of racial inequality. Based on data from the 2008 Survey of Income and Program Participation, white median household net worth is about $90,000; in contrast it is only about $8,000 for the median Latino household and a mere $6,000 for the median black household. The median Latino or African-American household would have to save nearly 100 percent of its income for at least three consecutive years to close the gap. Furthermore, 85 percent of African-American and Latino households have a net worth below the median white household. Regardless of age, household structure, education, occupation, or income, African-American households typically have less than a quarter of the wealth of otherwise comparable white households (Hamilton and Darity, 2009). These numbers tell a compelling societal story about wealth, income, assets, financial dexterity, and financial literacy.

For the vast majority of Americans, their homes are by far the most significant wealth they possess. The figure (1) below comes from the Federal Reserve Board’s Survey of Consumer Finances (via Wolff, 2010) and compares the median income, total wealth (net worth, which is marketable assets minus debt), and non-home wealth (which earlier we called financial wealth) of White, Black, and Hispanic households in the U.S.
Besides illustrating the significance of home ownership as a source of wealth, the graph also shows that Black and Latino households are faring significantly worse overall, whether we are talking about income or net worth. In 2007, the average white household had 15 times as much total wealth as the average African-American or Latino household. If we exclude home equity from the calculations and consider only financial wealth, the ratios are in the neighborhood of 100:1. Extrapolating from these figures, we see that 70% of white families’ wealth is in the form of their principal residence; for Blacks and Hispanics, the figures are 95% and 96%, respectively.

And for all Americans, things are getting worse: as the projections to July 2009 by Wolff (2010) make clear, the last few years have seen a huge loss in housing wealth for most families, making the gap between the rich and the rest of America even greater, and increasing the number of households with no marketable assets from 18.6% to 24.1%.

There is an insurmountable amount of evidence, which exhibits that basic wealth, and financial understanding is lacking in our American education system. Furthermore, the current marketplace is an inextricable complicated arena to those who suffer from a paucity of money management skills. Retirement, mortgages, investments, college funds, savings are all expedients towards a more financially secure future. However, it is a great concern that home foreclosures are up 57 percent from 2007 to 2008 and consumer credit card debt is increasing at an annual rate of 6 percent. Other research indicates that 3 in 4 workers do not have the knowledge or clear goals of their annual savings rate needed to retire comfortably (Palmer, 2008). There is also national concern that many African-Americans, whose net wealth is often tied to their home ownership, may face the largest loss of Black wealth in history due to foreclosures and the loss of home values for Blacks (Powell, 2010). Absence of financial literacy along with the foreclosure crisis threatens the financial health of US families; it has become predominantly destructive to African-American and Latino families, who already lag their white counterparts in terms of education, generational wealth, and income. Furthermore, the indirect losses in wealth that result from property loss and depreciation will excessively influence minority communities. The Center for Responsible Lending estimates that, between 2009 and 2012, $194 million and $177 billion, will be lost from Latino and African-American and Latino families and communities (Lowery, 2010).
The Center for Responsible Lending estimates that 2.5 million homes were foreclosed upon between 2007 and 2009 — the “vast majority” of which were owner-occupied homes with mortgages originated between 2005 and 2008 (see Figure 2 above). Once the foreclosure crisis is complete, as many as 10 million homes will go through the foreclosure process, which has cut across all demographic and income groups.

FINANCIAL LITERACY

The definition of financial literacy is generally accepted as the ability to read, analyze, manage and communicate about the personal financial conditions to affect the material well being. This includes, but is not limited to the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond completely to life events that affect everyday financial decisions, including events in the general economy (Johnson & Sherraden, 2007). Therefore, based on this definition alone, it becomes apparent financial literacy is an essential and necessary skill for individual today.

A low level of financial knowledge will limit a student’s ability to make realistic decision concerning buying a home, funding, children’s education, and planning for retirement (A vard, Mantion, English, & Walker, 2005). Adequate understanding of financial principles is imperative to the financial stability of individuals. According to Suiter and Maszaros (2005) discovered that Americans have not saved any part of their earnings. The savings percentage of income used to be approximately 6% and currently it has dwindled to zero. These interesting statistics implicitly impose the provocative question of “Where exactly have we failed in educating our country in the matters financial literacy?”

Building financial curricula into institutions for children and youth is essential. John Dewey (1938), asserted his position on the importance of learning by stating, “Teaching should not be isolated from real life experience (Harris, Denise & Thomas, 1989, Dewey, 1938).” More specifically, these experiences will allow children to test their understanding and permit them to explore their ideas based the principles taught”. According to Gregory (2002) “Experimental learning uses a cycle of action, conceptualization, and new experience. This process permits the learner to adopt new theoretical constructions and knowledge, and leads to further experiences and new learning. (Gregory, 2002; Kolb; Boyatzis, & Mainemelis, 1999). With this mind, exposure to life choice decisions at the early child stage is extremely beneficial. Understanding varying viewpoints, outcomes, helps to increase the objectivity in youth, therefore promoting critical thinking skills. Erikson (1993) supported this
postulation in his latency stage theory of human development by asserting “Children also at this point begin to build up a sense of purpose and resilience.” Nevertheless, if during this phase children experience difficulty performing social tasks, such as academics, group activities, and friends a sense of inferiority could arise.” It is relatively clear that at this juncture children begin to espouse their life choice foundations, which could have a devastating affect on them later in their development.

Galligan (1995) supported how influential experiential education can be for youth by stating “it educates the whole person by promoting development in all three learning domain: cognitive, affective, and behavioral. Children are more engaged in participating and learning at this point. Therefore, creating innovative age appropriate course work can prove to be advantageous. Earlier research performed by Sutton (1962), Fox (1978), and Furnham (1996) suggested that appropriate direct experience complements classroom teaching in a way that develops understanding in young children. Other research suggested that children understand consumer relationships before they understand production because they have more personal experience with the former (Danziger, 1958). Likewise, when children are given an allowance, they learn how to manage their funds more responsibly and further develop in to more effective money managers (Pliner, et al., 1996).

In addition to the aforementioned, there are sparsely known programs that exist to develop the financial education of youth. For instance, Junior Achievement program is taught over the period of several weeks. This particular program includes role-play and simulation in dealing with basic financial matters (Junior Achievement of Dallas, Inc., 2006). Another program used to educate youth is the NEFE program. Notably, this program has served over two million youth. In fact, an evaluation was performed on this program and the findings reported that their was a significant increase in financial knowledge and they were self-reported behaviors of tracking expenses, saving money, and increased confidence in making financial decisions (Danes, 2006). Moreover, 46.5 percent of the students indicated that the most important investment they made with their money was opening a savings or checking account (Danes, 2006). Nevertheless, one of the limitations of these programs is the non-access to financial institutions. Although, the youth are exposed to the financial principles of managing money, the life application aspect is missing. Therefore, the maturity in understanding real world experiences remains non-existent to the youth. Because of this further research is needed to explore other opportunities of mixed methods to incorporate real world experiences with classroom theory. In short, Financial literacy will enable students understand the economic context of family and community life (Muir, 2005).

**HIGH SCHOOL FINANCIAL LITERACY**

Students in high school are at the foundation of their journey as adults. As these students progress into a college setting, the financial principles of balancing and budgeting become more important. Dr. Clive Muir (2005), associate professor and director of Leadership Institute at Winston-Salem State University asserted “Financial literacy training must begin in the freshman year in order to help students anticipate and overcome many of the economic pressures they will face throughout college afterwards.” According to Godfrey (2006), when adolescents reach college they will begin to be hassled by credit card companies. Eight credit card companies can solicit the average college student within their first week of college. Consequently, these students accrue a large amount of debts during their studies at colleges and universities. Forty –five percent of college students obtain some sort of credit card debt (Godfrey, 2006). The average amount of debt each students carries is $3000 or more.

Godfrey (2006) also made note of the average American pays $8,000 a year in credit card payments. Somehow in today’s society, the use of debt has been accepted as a constructive means of purchasing. Young adults are entering into an atmosphere with huge responsibilities. Therefore, efficient financial intelligence in high school would allow students to anticipate the predatory financial companies, save more, and overall become better prepared to deal with financial matters in higher education. The education of students in the realm of financial matters is extremely imperative at this juncture. Equipping students at the adolescent stage of their life will aid to their financial resilience.

It has been reported that some high school programs have addressed the importance of their students becoming financially competent. These school systems have used financial literacy quizzes as a metrics to determine the student financial aptitude. The quizzes took place in two areas, rural and urban high school students. The findings reported that urban students scored an average of 50% of the test, whereas rural students scored an average of 51%. Students who considered post-secondary education scored higher on the exam. Likewise, these same students worked part time jobs an average of twenty hours per week. (Valentine & Khayum, 2005)

These findings indicated that there is a positive correlation coefficient with a student earning income and understanding financial principles. According to Marsh (1991), students who worked in high school had the benefiting affect of saving money for college. Comparatively, these same students were more likely to have favorable college attendance, spend more time on
homework, have higher educational aspirations, and develop a stronger academic self-concept. In particular, these students decided not to spend money frivolously and chose to save their money earned for future college expenses. (Marsh, 1991)

This exacting interim is especially crucial due to the student’s human development stage, which is adolescence in Erikson’s human development theory. According to Erikson (1993) “for all intents and purposes, if the individual cannot make deliberate choices regarding vocation, sexual orientation, or other life decisions, role confusion becomes a threat, which hinders their adolescent process”. Throughout high school, students begin to espouse their identity vs. confusion process. If students have not been educated on the cautions of credit cards, debt, and frivolous spending, the result could double or triple for that matter, the future average American debt carrier could potentially increase from $9,000 to up toward $24,000.

FINANCIAL CAPABILITY

Financial capability, according to Atkinson et al. (2006), incorporates skills, behavior, and knowledge in five areas: making ends meet, keeping track, planning ahead, choosing products, and staying informed. Considering this definition, in order for students to become financially competent the availability of financial resources must be readily available or families to remain informed. Sen (1993) defined capability as “the freedom that a person has to lead one kind of life or another.” Be that as it may, not all individuals have the same access to the free flow of information. For instance, Ingrid Robeyns performed an analysis on capability theory in which she postulates “Given the same amount and quality education, not every child or adult will to the same degree be able to use this education for income-generating activities.” (2005, 6). This statement is plausible due to certain barriers to entry, such as physical or intellectual ability or external reason, e.g., cultural barriers, racial or gender discrimination. (Robeyns, 2005) On the other hand, Nussbaum wrote that a person’s internal capabilities and the existing external conditions make up a person’s combined capabilities (2000, p. 85) More specifically, he suggested that structure and the environment e.g. policies, laws, regulations, practices- help facilitate ways that individual can choose to develop the full range of capabilities that lead to well-being.

On the subject of financial capability, minorities and low-income youth is less likely to have access to financial systems. In the United States many low income and minority families do not have a checking, savings, insurance, or retirement plans. More importantly, this particular lifestyle does not have a positive affect on the youth. Low-income youth are more likely to come from families who are “unbanked” (Aizcorbe, Kennickell, & Moore, 2003) and therefore do not have access to all necessary tools, institutions, and other ancillaries that would increase their financial capability. Of note was the Youth and Money Survey, which indicated that there are drastically fewer children in lower income families that have savings and investment accounts than children in higher income families (Greenwald & Associates, 2001, 11). Credit is also a contributing factor in financial capability. By way of example, if a family has low credit score, they would only qualify for sub prime interest rates. Essentially this would eliminate the possibility of certain benefits such as savings, the ability to own a home, and other ancillary wealth building instruments that could potentially lead to a healthy financial well being (Sharraden, 1991 Howard, 1997).

What is more, the dramatic affect that of the lack of financial education among minorities. The Jump$tart Coalition conducted a study of which the finding indicated that white students scored significantly higher (55%) on a test of financial knowledge than Hispanics (46.8%) or African Americans (44.7%) and students from the highest income families (over $80,000 per year) scored significantly higher than lower income students (Jump$tart Coalition, 2006). In short, the research suggests that variation of class status or socioeconomic conditions immensely affect the ability youth to absorb and act on financial information. Coursework study is not enough to ascertain financial capability. The ability to apply practical financial concepts is equally, and if not, more important than learning data concepts. Financial institutional access to minorities and low-income families could dramatically increase the investment and savings rates of youth. And to that end, youth should not be limited to only the financial environments their families provide for them, rather the ability to compare and contrast in their personal experience with the ideal financial circumstances will increase their cognitive logic and develop their amplitude towards financial literacy with cause and effect experiences.

SOCIOECONOMIC INFLUENCES

Social networks and economics forces tremendously affect the free flow of financial information and therefore significantly impact financial literacy among individuals. Data findings by the Survey of Consumer Finances revealed that social networks are by far the most frequently used source of saving and investment information (Kennickell, 1998). Additionally, the research suggested that people who have the least amount of wealth most commonly use social networks. Further, the findings indicated that wealthier class citizens are likely to seek paid financial professional help and various types of media for investment advice.
Socioeconomic status is positively related to access in resource-rich networks (Lin, 1999). Additional research, suggested by Lin (1999) indicates that networks are economically and educationally homogeneous. The higher the individual’s socioeconomic status, the more reliable their sources are. Alternatively, research suggests that individuals on the opposite end of the socioeconomic chain use social networks as well but mostly for emotional and economic support. According to Auslander and Litwin (1998), the poor also rely on informal financial support from family and friends because they have no other options; they have “heavy burdens, small circles of support already fully tapped and few additional resources from which to seek informal help”.

Naturally it would appear that there is a gap in knowledge of financial resources between the have and have-nots. Seemingly, the poor’s sources do not have as extensive financial knowledge or expertise as those who higher in the socioeconomic ladder. To that extent, access to information regarding saving and investing is rooted in broader systems of social inequality.

**METHODOLOGY**

A qualitative research approach stratifies the purpose of this study because it provides an avenue to capitalize on the strengths of using the direct voices of study participants and provides a path for detailed observation of the natural settings by the participant observers “to avoid prior commitment to any theoretical model” (Yin, 1994, p. 14). Through an inductive approach to seek descriptive participant feedback, this strategy provides a unique possibility for the study of people and groups in the world of practice with an emphasis on the meaning and understandings of their experiences.

The 3 small focus groups of 5 certified financial planners for a total of 15 participants in Bethesda, MD. All 15 were male. 11 were Caucasian American, 1 was African-American, and 3 were Asian-American. The groups meet separately and each group was asked what do you see are the key subjects that should be part of a financial literacy program for high school students. The total lists of each group was complied and then the collective group was brought together to vote on what they thought were the top five topic areas. The results were:

1. Understanding credit.
2. Saving and Investing.
3. Money and Banking
4. Lending and Financing Principals
5. Insurance Principals

The course curriculum was developed that were taught to two separate classes of high school African-American and Latino American juniors. They were given pre-class tests and post class texts. The scores improved by 79%. This successful pilot provides insight into the value of financial literacy as a tool to improve understanding of financial matters in communities of color.

**VALIDITY AND RELIABILITY**

The techniques utilized as they relate to the development of validity and reliability procedures in the researcher’s applied dissertation included:

1. Triangulation: Using multiple independent investigators and multiple sources of data to confirm findings.
2. Giving the course on three separate occasions to three separate groups.
3. Member checks: Taking tentative interview and feedback interpretations back to the people to whom they were derived and asking them if the emerging trends make sense and are in line with their intentions.
4. Peer examination: Asking colleagues to comment on the findings as they emerge.
5. Collaborative research: Involving participants in all phases of research from conceptualization of the study to writing up the findings.
6. Corroboration: Using a variety of different feedback levels, processes, and approaches.

**SUMMARY**

After careful review of the Human Development theory from Erikson, we begin to understand the relevance and severity of human development and it’s social implications on self efficacy. This is especially true in the matters of personal finance among African American and Latino adolescents. Roberts (2005) asserted “Financial education includes background on economics or the choices we make in a world where we cant have everything we want and the consequences of the choices”.

385
Becker (2002) asserted that education and training are the most important investments in human capital. Becker also postulates that earnings of more educated people are almost always above average (Becker, 2002). This particular notion has remained consistent in America today. Individuals who understand the underpinnings of personal finance, economics, and management have had more auspicious results than their respective counterparts. At this juncture of development, as asserted by Erikson (1993), proper development is pertinent to an individual's aptitude, especially in regard to financial literacy. Erikson (1993) also postulated that adequate development could encourage a sense of loyalty towards their life and associated principles. Healthy financial habits are the foundation of a stable lifestyle, and provides the necessary tools to augment one's family growth and ascertain specific personal goals such as, buying a house, car, financing education, and savings.

With this in mind, Windfield (2004) asserted that fostering any sort of resilience requires a change in “attitude, beliefs, social structure, and physical environment”. Therefore, educational settings, homes, organizations, and employer influences are paramount in fostering resilience. Moreover, fostering resilience requires that the community works together: parents, children, schools, and community-based organizations. Such entities working together will provide a substantial amount of resources necessary to bring about a positive influence in the child’s life. (Winfield, 2004). The resource booklet and course materials serves as a tool for those who are interested in learning more about financial literacy in human development as well as those individuals seek to teach children, adults, and retirees.

Due to nature of financial literacy, it will be imperative for individuals to work on their continuing education. Literacy in the matters of finance has evolved tremendously of the last ten years; therefore, the information provided in this Application is to serve as guide, rather than a rule.

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DEVELOPMENT OF A SMALL LEARNING COMMUNITY FOR AFRICAN AMERICAN AND LATINO BOYS: A CASE STUDY

Darrell L. Groves
Clark Atlanta University, USA

ABSTRACT
A school district in metropolitan Atlanta, Georgia decided to reform its high schools through establishing small schools and small learning communities. The high school featured in this case study restructured into small learning communities. One of the small learning communities was the African American and Latino Male Academy. This Academy would address such male students of color issues such as poor school attendance, criminal behavior, low student achievement, and high dropout rates. A design implementation team was assembled to develop a design implementation plan for the Academy and consisted of various stakeholder representatives. The researcher was hired as a Small Learning Community Coach and worked very closely with the design team to develop the plan. This is a qualitative case study of the plan that was developed to address the needs of African American and Latino male students. Several themes were to be addressed in the plan including personalization, interdisciplinary studies, rigorous and relevant teaching, and district support. The plan was successfully written and accepted by the school district after much brainstorming, research, and writing by various members of the design team. The Small Learning Community Coach is the only researcher in the case study. Generalizability is one of the limitations of the study as the plan is developed for a particular high school community. The Design Team Leader should become the permanent Academy Leader, and the SLC Coach should be hired at the beginning of the process. Finally, meetings should be scheduled when all stakeholders are represented.

Keywords: African American, Latino, Male Academy, Stakeholders, Rigorous, Relevant, Interdisciplinary, Collaborative Teams, Authentic Instruction, Assessment, Best Practices, Parental Involvement

INTRODUCTION
A school system in metropolitan Atlanta decided to reform its high schools by converting them to small schools and small learning communities. Small schools are separate entities on the same campus with its own principal for each school (i.e. law, medicine, business, international baccalaureate). Small learning communities (SLC) exist under one principal and assign academy leaders to each program. The high school in this case study decided to develop several small learning communities. The African-American and Latino Male Small Learning Community is the case study described in this paper. This Academy developed from the need to address such urban male problems as poor school attendance, criminal behavior, low student achievement, and low graduation rates. A design team was assembled consisting of various stakeholders including parents, students, teachers, administrators, and community members. This paper will document the Design Implementation Plan (DIP) which was developed from a Design Implementation Guide (DIG) as developed by the Small Schools Project.

LITERATURE REVIEW
In Black Students and School Failure, Irvine (1991) discusses the differences between Black male and female student development. She further suggests that teachers need to take this under consideration as they meet the needs of each gender. Pedro Noguera (2009) in The Trouble with Black Boys: And Other Reflections discusses the importance of routines and rituals in the development of a school culture that benefits Black boys.

Jonathan Kozol, in Ordinary Resurrections emphasizes the importance of parent participation in students’ activities as he interacts with the children in a New York City community. In her work The Dreamkeepers, Ladson-Billings (2009) stressed the relevance to students’ educational, social, and emotional well-being in the curriculum and pedagogy. Michael Cuyjet (2006) discussed the linkages that are critical between African American boys with area colleges and technical schools in his work African American Men in College.

In Black Students: Middle Class Teachers, Kunjufu (2002) wrote about the importance of Black student relationships with teachers and recommends such practices as looping where students remain with the same teachers for multiple years. In a textbook Supervision and Instructional Leadership, Glickman (2009) recommends the developmental supervision of teachers.
which emphasizes professional growth. This model could assist in more effectively meeting the needs of African American and Latino boys.

Thomas Sergiovanni (2004) in *Educational Governance and Administration* expresses the importance of innovation in schools and that lessons should be more authentic and rigorous. DuFoor (2004) stated that instruction should be authentic and professional development planned on desired and relevant activities.

In several works, Linda Darling-Hammond (1995) stressed the importance of formal assignments being in alignment with state and district standards. Finally, Bagin, Gallagher, and Moore (2008) emphasized the importance of parental and community support in their textbook *School and Community Relations*.

**METHODOLOGY**

The methodology for this research is a qualitative case study design with the researcher serving as a SLC Coach for this learning community. The researcher is a university adjunct professor that was hired as a consultant to work with the design team to develop the Design Implementation Plan (DIP). The SLC Coach/Researcher developed presentations on the various elements that were required by the Small Schools Project. This case study will focus on the development of the (DIP) with the researcher guidance and work of various stakeholders on the design team.

**FINDINGS, ANALYSIS, AND DISCUSSION**

The vision of the Leadership Academy is to become the model small learning community that cultivates and nurtures academically successful young men who are globally competitive with developed leadership skills and abilities to lead in a diverse society. For student achievement, the over-arching goals are to align the curriculum with district initiatives, incorporate Best Practices for single gender instruction, and graduate 90% of ninth graders within four years.

The expectations for school culture are that routines and rituals will be established, evident and non-negotiable. These elements will foster a well-functioning community that exhibits a balance between innovation and tradition in terms of teaching and learning. A positive school climate and culture will be created and sustained through collaboration, mutual respect and trust among leadership, faculty, staff, students and parents.

Teachers will deliver quality instruction utilizing differentiated instruction that is inclusive of student learning styles and multiple intelligence strategies so that the needs of all students are met instructionally and socially. To assess students’ understanding of content, teachers will use multiple formative and summative assessments that will enable students to show their mastery of the material. Parents will be encouraged to participate in all activities that the Academy offers.

Each student in the Academy will be well-known by adults as a result of the small class sizes which will enable individualized instruction to take place to maximize student learning. Students will be exposed to and made aware of post-secondary options, and will have the leadership skills and critical thinking skills to be successful. They will be exposed to a curriculum and pedagogy that stresses relevance to students' educational, social, and emotional well-being. Members of the Leadership Academy will understand that community involvement is critical to the success of the Academy. To serve the needs of special education students, the faculty and staff will work to mainstream students into regular classrooms based on student needs. The administration will solicit information and data from student representatives and conduct a needs assessment survey to determine the types of programs that are needed. To support student families, a parent center will be designed to assist parents.

Students will be encouraged to participate in activities that are offered for all students at the high school. It will be a requirement that all students join at least one extracurricular activity. Advisors will assist in monitoring the activity of each student. In the Eagle Academy, we seek to educate the whole student's mind, body, and spirit.

An important element of interdisciplinary teaching and learning teams is the selection of competent, committed faculty and staff to whom adequate professional development is provided. Interdisciplinary team planning is essential to ensure that faculty is aware of the social and academic needs of students in their cohorts. The Academy’s plan is to loop teachers by keeping students with their teaching teams for two years.

There will be some changes in the present high school curriculum. For example, the science sequence will be changed to give more students the option to take physics. The mathematics curriculum will also be in alignment to make this possible. Students
will continue be required to take at least three years of Spanish. As far as collegiate experiences, partnerships with area colleges and technical schools will be on-going. Instructional coaches and other supervisors will visit classrooms regularly to assist teachers with authentic instruction and assessment strategies. Teachers will receive professional development on professional learning communities and how they operate. Developmental supervision will be introduced with each teaching developing an individualized professional development plan.

Innovation is a major part of the instructional program and the lessons will be more authentic and rigorous. Those students who have challenges with literacy will receive personalized instruction during tutorials. An action plan, developed by the literacy specialist, will help guide the teacher and student to success. To maximize instruction and classroom participation, special programming outside of the core curriculum will occur during afternoon hours.

In order to guarantee that instruction is authentic and that teachers are up-to-date in the trends of education, professional development will be planned on desired and relevant activities. The selected activities are planned in accordance with the school plan, core standards, transformation, educational nuances and pedagogies. Character education will also play a major role.

To ensure that formal assessments are in alignment with state and district standards as well as themes, teachers are required to submit documents prior to testing periods. Additional measures are undertaken to ensure that students are performing at optimal levels. Assessment of the process and programs will take place formally and informally throughout the academic calendar.

Feeder schools, student recruitment, and postsecondary articulation are essential to the success of Eagle Academy. Various programs will serve as a public relations piece for the Academy and give incoming freshmen an added edge to make the transition from middle to high easier to navigate. Parents will play a vital role in terms of support. Students who attend feeder schools are given first priority for admittance into the Academy.

Key stakeholders are critical to the success of the Leadership Academy. The advisory council will be developed with volunteers from the existing structure. The Academy faculty will share their desires or concerns for council during academy meetings. The Academy Leader is charged with conducting all affairs of the Academy and will be evaluated by the Principal. The staffing needs will support 200 students. Teachers will be evaluated using the current instruments. The Best Practices model is used to determine and measure teacher effectiveness in the classroom. The school’s calendar will be developed with the entire curriculum in mind. With the new construction of the current school, plans have been made to provide each small learning community with the space and accommodations needed in order to thrive.

**CONCLUSION**

One conclusion is that plans such as this are needed if we are to address the crisis and achievement gap for our African-American and Latino male students. The various elements of the plan such as personalization, interdisciplinary studies, rigorous and relevant instruction, etc. are changes in the curriculum that could have a significant impact on male students of color. The status quo is not an option.

Another conclusion is that the participation of various stakeholders in the internal and external communities is extremely important. The buy-in by these various stakeholders was crucial and their input in brainstorming sessions was invaluable. The plan outlined above includes various ideas from research and various members of the design team.

**LIMITATIONS**

There are several limitations for the case study. First, the SLC Coach/Researcher is the only researcher for this case study. The researcher has made every effort to be as objective as possible and control any biases that may exist. The researcher is very committed to qualitative research and uses triangulation by examining documents, observation, and informal interviews.

The researcher was also hired as a consultant to make sure that the plan was developed by the due date. I was very determined to make sure that the project was successful and willing to do what was necessary to make the project a success. Failure was not an option and the researcher was very pleased with the process and final product. The school system also approved the final document.
Finally, generalizability will be problematic in this research. This plan may be very successful in this high school and community; however, various elements may not be appropriate to another community. Each small learning community will need to take the major themes and adapt them to their own school and community profile.

RECOMMENDATIONS

The researcher has several recommendations for any high school that decides to establish a small learning community for African-American and Latino male students. First, the central office should hire the Design Team Leader to be at least the Interim Leader of the SLC. In this high school, the central office chose a leader that did not participate in the design process and initially did not completely buy-in to the plan. This created some problems as the plan was being implemented.

Second, the Design Team was selected and began meeting before the SLC Coach/Researcher was hired. Time was of the essence, and it’s likely that there would not have been rushed if we started developing the themes earlier. The researcher worked with the design team over several months and was under extreme pressure to complete the project.

Finally, the meetings needed to be scheduled at times when more of the stakeholders could be present. For example, several of the students were involved in co-curricular activities after school and usually missed the meetings. It was also difficult for the parents and community members to attend when they had their own obligations after school hours.

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AN INTERDISCIPLINARY ANALYSIS OF THE BOOK, BLACK GREEK-LETTER ORGANIZATIONS 20: NEW DIRECTIONS IN THE STUDY OF AFRICAN AMERICAN FRATERNITIES AND SORORITIES

Darrell Norman Burrell
George Mason University, USA, A.T. Still University, USA and Virginia International University, USA

ABSTRACT

Keywords: African-American Studies, Organizational Behavior, and Social Psychology.

REVIEW INTRODUCTION
The book, Black Greek-Letter Organizations 2.0: New Directions in the Study of African American Fraternities and Sororities fills an important void in African-American scholarship by the delivery of a rigorous and comprehensive account of the highly relevant societal impact of Black fraternities and Sororities as apparatuses for networking, community organizing, intellectual collaboration, racial equality activism, conflict, and surrogate family support structures. Prior to this book, rigorous and critical academic scholarship in this area has been extremely limited.

BOOK REVIEW CONTEXTUAL ANALYSIS
Black Greek-Letter Organizations 2.0: New Directions in the Study of African American Fraternities and Sororities effectively points out how BGLOs are a critical aspect of African-American history like more noted organizations like the National Association for the Advancement of Colored People (NAACP) and the National Council of Negro Women in organizing scholars, students, faculties, politicians, and activists in activities that have been effective in socializing, educating, and raising the social conscience of stakeholders that have been socially concerned, socially oblivious, felt powerless, or felt isolated. BGLOs have served as advocated for people of African descent. BGLOs have fulfilled this purpose through organizing, advocacy, and national and community-based services and programs on issues of equality, education, and economic empowerment in the United States.

Chapter one in the book outlines voids in BGLOs scholarship and why is an area of significant importance in African American Studies and history. The chapter also outlines why it is important for scholars to do solid empirical research on BGLOs while pushing academic research communities to both understand and respect the relevance of research related to BGLOs.

Chapter two outlines the effective role of BGLOs in creating communities of practice, which have been outlined by cognitive anthropologists Jean Lave and Etienne Wager as a group or community of people share an interest, a passion, or a concern about a common domain and they collaborate with a goal of sharing knowledge, mobilizing resources, and working together. It is through the process of sharing information and experiences with the group that the members learn from each other, and have an opportunity to accomplish more collectively working together than they can by functioning individually. Chapter four provides an extensive analysis of the doctrines and identities of BGLOs as it relates to values and religion.

Chapters 7 and 8th are very compelling in the way that explore some real controversial and relevant issues related to BGLOs struggles and challenges with race relations between minorities, “color struck” perceptions, and elitism.

In subsequent chapters the books provides an interesting research orientation exploration some very salient issues from some very interdisciplinary lenses that touch on academic areas like Organizational Behavior, History, Anthropology, Human Behavioral Science, Psychology, and Sociology through critical thinking rigorous discussions about contexts would apply to academic theories like those that address areas group identity, power, leadership, followership, persuasion, organizational culture, change management, organizational learning, social identity, restorative justice, bullying, and introspection.
CONCLUSION

Black Greek-Letter Organizations 2.0: New Directions in the Study of African American Fraternities and Sororities is undeniable perspective when think about the relevance and influence of social media as tool to connect like-minded and interested individuals. Before there was a MySpace and a Facebook, American-Americans used social organizations like churches and BGLOs to connect them in social activities the support their faiths, ideas, concerns, and interest. BGLOs provided organizational structures for African-Americans to vent, disagree, party, collaborate, network, dialogue, debate, strategize, share, mobilize, and make a difference in their communities and the lives of others. This book provides a solid academic perspective and should be a must read for those interested in academic research and scholarship in the realms of Diversity Studies, Sociology, Organizational Behavior, Psychology, History, Education, and African-American Studies.

REFERENCES

THE USE OF FOOTBALL METAPHORS AMONG GHANAIAN TERTIARY STUDENTS BEFORE AND AFTER EXAMINATION

Eric Opoku Mensah
University of Cape Coast, Ghana

ABSTRACT

The interface between metaphor and cognition has been a major area of study in Cognitive Linguistics, Communication Studies and Discourse Analyses in recent times. Based on Lakoff and Johnson’s (1980) Cognitive Metaphor theory, this study presents an examination of football metaphors in the conversations of some tertiary Ghanaian students. The paper uses the Linguistic Metaphor Identification procedure (Steen et al, 2010) to code metaphors in conversations of students before and after writing their examination papers. The paper argues and concludes that football metaphors which are recurrent in the verbal interactions of the students before and after examinations period may have a great influence regarding their conduct in present and future examinations. This confirms and strengthens the relationship between metaphor and the cognitive process as proposed by Lakoff and suggests ways in which metaphors could be used to shape students’ attitude towards examination.

Keywords: Metaphor, Cognition, Football, Ghana.
SENIORS FOR SOCIETY

Carol Shepherd
National University, USA

ABSTRACT

It is important for all individuals to have a purpose in life. Purpose is one of the things that keeps people alive and gives them quality of life and a desire to go on living and be productive members of society. Senior citizens, far from being finished with their lives, remain productive and are involved in gainful employment, volunteer work, and the community. The Baby Boomers of yesteryear are the Senior Citizens of today. Legislation such as the Senior Citizens’ Freedom to Work Act of 2000 has significant implications, affecting federal budgets, health insurers, and Social Security and pension funds. Finally, caring for the elderly enables others to gain insights from their experiences, as well as to develop empathy, kindness, and hope.

Keywords: Senior Citizens, Passages, Human Development, Motivation, Behavior.

ANNOTATED BIBLIOGRAPHY

FOCUS OF PROJECT: Senior citizens remaining productive members of society, involved in gainful employment, volunteer work, and community


This Senior Citizen Job Bank is a website for finding worldwide employment, to enable seniors to maintain self-esteem and augment retirement income. Since the Social Security penalties for earnings of those over 65 have been eliminated, the Senior Job Bank has made it easier for many seniors to find work.


The article introduces several energetic senior citizens who plan to work forever and are happy to do so. The author cites statistics from AARP and theorizes that the American view of retirement is slowly changing. More are achieving Maslow’s highest level.


A dynamic African American activist entrepreneur is now 100 years old. Despite all odds, a woman successfully and ethically ran her own business and raised a family. Productive long past 65, she is still independent at age 100. Self-actualization.


Generations United group has created Seniors4Kids to provide quality pre-kindergarten enrichment for children. It is important for individuals of all ages to have purpose. Supports Erikson’s theory. This fast-growing group advocates pre-kindergarten for children to provide quality early education.


Jobs for older baby boomers, mainly employment at national parks. CoolWorks is a website listing cool jobs for senior citizens.


This book asserts that companies recognize that they face a wave of retirements as baby boomers age. Solutions to address the many facets of an aging workforce are examined.

This author informs her readers that senior citizens play an active role in this college town. Working, volunteering, and socializing are important parts of everyday life for senior citizens both on and off campus. Gerontology theory exemplified.


During the next 30 years, “Boomers” will have a significant impact on society. The “Senior Citizens’ Freedom to Work Act of 2000” has macroeconomic implications. This act has impacted federal budget trends, health insurers, and Social Security funds.


This study examines the relationship between participation in productive roles and the mental and physical health of 60+ adults. Gerontology theory exhibited. Being productively engaged is positively correlated with better health, physical condition.


Civic Ventures is a non-profit agency to negotiate fair car prices and low-rate loans for the working poor. This is an organization to help seniors find rewarding volunteer work or careers.


Ithaca College has an active program in partnership with a nearby senior citizen facility. A large number of the faculty at the college and hundreds of college students engage in a variety of activities with the adults in their 70's, 80's, and even 90's. Vygotsky’s cooperative learning theory enables all ages to benefit.


Senior citizen employment by retailers; advantages and disadvantages, future trends. Discussion of implications for retailers employing senior citizens.


The value of elderhood and the danger of that value being lost in society's quest for the magical fountain of youth. Caring for our elderly, as well as gaining from their insights and experience, enables us to develop such qualities as empathy, kindness, and hope.


Senior citizens seeking employment or volunteer work are aided by LIVE – Lifelong Involvement for Vital Elders. This is a program to aid seniors with finding work.
ACCOUNTING EDUCATION- A REVIEW OF CHANGING NATURE

Simone Watson
Clark Atlanta University, USA

ABSTRACT

This paper is centered on the evolution of accounting education in the recent years. The increasing need for accounting education is in response to the changing needs of the accounting profession. Some keys factors which influence the accounting profession are tax rates, accounting standards, and roles. The aim of this paper is to analyze why the accounting profession needs continuously changing education. Also it aims to identify events in the past five years that have been instrumental to some drastic changes. Current literature reveals that many universities and institutions of higher education have changed their curricula to accommodate the changing nature of accounting. This research will carry out a review of literature during the period from 2005- 2011. The research findings will serve as a guide in improving accounting education.

Keywords: Accounting Education, Review of Literature, Instrumental, Changing Needs of the Accounting Profession.
EFFECTIVE MULTIDISCIPLINARY ACTIVE LEARNING TECHNIQUES FOR FRESHMEN POLYTECHNIC STUDENTS

Adeel Khalid, Bernice Nuhfer-Halten, Jennifer Vandenbussche, Donna Colebeck, Mir Atiqullah, Sonia Toson and Craig A. Chin
Southern Polytechnic State University, USA

ABSTRACT

The purpose of this project is to develop a definition of ‘Polytechnic students’ and identify a few active learning techniques that are effective for students in various disciplines in a polytechnic University. The focus of this research is on active student-centered strategies applicable to the following disciplines: engineering, mathematics, language, arts, and law. In the authors’ experiences, the polytechnic students’ personality profile generally has the following characteristics: Introversion, Sensing, Thinking, and Judgment (ISTJ).

Keywords: Active Classroom Learning Techniques, Polytechnic Students, Multidisciplinary Teaching Techniques.

THE POLYTECHNIC STUDENT

All generalizations are just that—the overview of the issue with little regard to specifics. When applied to a large pool, generalizations will often offer exceptions, but for the most part, they also offer the big picture. In this introduction, we are attempting a definition of the engineering/polytechnic student in general in order to develop interactive teaching strategies and tactics that are appropriate for the majority of our students in our classes in all disciplines.

We used the Myers-Briggs Type Indicator [6] to establish the personality type of the typical engineering/polytechnic student. They are generally more introverted than extroverted. In getting information, they exhibit for the most part little intuition, and prefer sensing. Rather than feeling, they tend to take decisions not through emotions but by means of rational thought, and so their position vis-à-vis the world is the result of judgment, not perception. In the end, their general profile is ISTJ, Introversion, Sensing, Thinking, and Judgment.

Following is the list of techniques that we believe are most effective for active learning in the various disciplines of a polytechnic institution.

ENGINEERING

In our experience, the following list [1] of techniques work well for freshmen engineering students.

- The muddiest point - Ask students about the concept they did not understand in a class and then go over it again at the end of the class.
- True False questions - Students are asked to answer T/F questions during class. This serves better than quizzes because they learn while being assessed. They can be given participation points.
- Use of props - Students get engaged when they can see or touch an object or a model.
- Candy questions - Students get a reward for actively participating in the class. Every once in a while, a hard question is asked. The first person to answer the question gets a candy. This motivates students and encourages active classroom participation.
- Mind break - The instructor talks about something completely off-topic for a few moments e.g. in a thermodynamics class, the instructor will ask about the capital city of Canada.
- News Share - Students are asked to share the latest news about certain technology. Students are eager to speak and tell everyone what they saw. Sometimes they pull up the news on their hand held devices so they can discuss it in class.
- Hand Raise - Students are asked to raise their hands after about 20-30 minutes of lecturing. This helps them focus again on the topic of discussion in class.

Cooperative learning techniques have also been utilized in engineering classroom environments with some success [2, 3]. Cooperative learning is an instructional approach in which students work in groups on a learning task. The 5 essential elements required for implementing a cooperative learning technique in an engineering classroom are [4]: positive
independence, individual accountability, face-to-face promotive interaction, appropriate use of interpersonal and teamwork skills, and regular self assessment of team functioning.

By using the above techniques, we have discovered that students remain engaged, are motivated to learn, and actively participate in class.

**Engineering class example: Mechanical/Machine Design Class:***

Example problems are key to assimilation of the topic, the conditions, parameters, failure modes, equations, data etc. However a large percentage of students tend not to actively participate in the class practice problems, counting on others to complete and respond to the instructor. Each of these students are in a design team, thus know their team mates better than other classmates. When asked to do the practice problem as a team, they take care of each other in answering question, clarifying any question and finally solving the problem. Action comes from the ownership of the situation, in this case the team problem. This takes a little longer class time, but most of the time does not require additional clarification and the students develop confidence in solving this type of problem.

**Engineering Technology class example: Circuit Analysis Class***

During the semester, the review of the content taught in each chapter is performed by means of a group assignment. The duration of each assignment is 15 – 20 minutes and is typically given at the end of a class period. Each group is expected to submit a single report, and the answers for the assignment will be presented by the professor. For each group, there will be 3 – 4 group members. Each member will work in one of 4 defined roles. The roles are: solver, recorder, checker, and manager. The role of each group member will be rotated with each successive assignment. The format of these group assignments was specifically chosen to encourage the use of the five essential elements of cooperative learning mentioned above.

**MATHEMATICS**

Active learning in mathematics classroom can be helpful to move students from passively following along as the instructor solves a problem to getting the students ready to tackle problems on their own homework. These active learning pauses can be illuminating for students who are sure they understand what is happening in class - until they try to actually solve the problems on their own. Active learning techniques which encourage them to work with others can lead students to form study groups outside of class.

- Clarification pauses - Many students don’t think of their questions until 2-3 minutes after an example problem has been completed
- Wait time - Giving all of the students time to work a sample problem before allowing other students to provide the solution steps
- Evaluation of another student’s work, particularly having students put solutions on the board (ideally after they’ve had a chance to compare their answers with someone else, since they’re more willing) and then having the class critique the solution.
- Cooperative groups in class
- Work at the blackboard - If the class is small enough for everyone to have board space, not allowing them to use pencil and paper can help to push them to the board
- Jigsaw group projects - Each group is given a different problem, they complete one step, and hand it on to the next group, who checks the work of the first group and completes the next step, etc.
- Group quizzes
- Soliciting test hints from students. Students write down three hints for their classmates to think about as they take their exam next week. It shows the instructor what the students are thinking about as they work problems, and then the instructor can compile a list to hand out to the class to help them study.

**LANGUAGES**

Foreign or World Language educators must be aware of 6 areas of skills acquisition in their students—especially in the introductory and intermediate levels of study. These areas are listening comprehension, speaking, reading, writing, culture, and grammar. In order to learn or acquire a second language (L2), a student MUST be active. However in the case of the Introvert, whom we find frequently in the Polytechnic University, that activity is not intuitive. The instructor must create situations by which the student will respond as comfortably as possible, with as little fear of making a mistake in public. The
instructor must move that student from the mechanical, to the meaningful, and finally to the communicative level of activity, wherein s/he is completely free of the instructor, and truly independent. This happens repeatedly through each structure introduced to the student.

Some techniques to help the student arrive at this point of ownership of the material include classroom management:

1. The class seating arrangement is circular, so students are encouraged to talk to one another. The teacher is not the focal point of the class. The class arrangement will change within the class period and between one class period and the following one. The teacher’s role is now that of the class facilitator.

2. The instructor moves from repetition of a new concept, to directed dialogue, and finally to free use of the new concept, withdrawing from the role of animateur. The teacher can have choral work, small group work, and finally individual work in order to reduce anxiety levels.

3. The above involves listening and speaking. After the student has acquired that material, it is then that the student is permitted to see the written word. Adult learners are graphically bound. That is, they hunger for the concept in its written form. The Polytechnic student is particularly bound in this manner. However, seeing the written word prematurely can create speech that is so heavily accented that it impedes communication. Furthermore, it can create a dependence on English in order to understand the target language. So in fact, instead of taking into account the Polytechnic Student’s penchant for deductive learning, and using that very technique, L2 instructors MUST do the exact opposite. This is not to frustrate the student, but rather to encourage growth in his/her other learning strategies.

4. Just as listening comprehension and reading are, on the surface at least, passive skills, speaking and writing are active. How many times do L2 faculties hear “I took 2 years of Spanish in high school, but I cannot speak a word!” How many heritage speakers of the target language who use that language orally in the home cannot write correctly! The technique we use for listening comprehension moves, as we saw above, from mechanical, to meaningful to communicative, i.e., independent comprehension. This is ongoing so long as the student studies and speaks the target language. With respect to writing, current pedagogical trends take the emphasis off the final product, seen only by the instructor (a dependency), and places it on the student and his/her peers (independence). The new emphasis in writing is on the process or development of the piece, whereby the student controls the various versions, not the instructor.

5. The acquisition of cultural skills in the target language must deal with the so-called BIG C—civilization, literature, art, film, music, etc. BUT it also MUST include little c—“bread loaf” culture, i.e., practices of daily life, birth, death, courtship and marriage, meals, attitudes toward work and time, etc. There are several vehicles that can be employed to convey cultural products and to assist the student’s acquisition of the skill in dealing with those cultures. Since the Polytechnic student tends to rationalize rather than intuit cultural differences, using simulations such as proxemics, the distances considered comfortable among the speakers of the target language, helps these students have the experience in a safe classroom environment so that s/he can “rehearse” it.

6. The issue of grammar with Polytechnic students divides itself into what they prefer: a deductive approach rather than an inductive one. Give him/her the rule, and then practice it. BUT to challenge their skills of observation, an inductive approach can and should be used at times. That is, have students use a structure, perhaps in different formats, and then ELICIT THE RULE. Again, the instructor is there pointing the way, and the student has to gather up the courage to go places theretofore unknown. They learn how to think about the language not from memorized rules, but through the target language itself.

ARTS

There are many activities that may be used with art appreciation/visual art classes to engage students in active learning and cooperative learning. These approaches go beyond traditional lecture typical of Art History classes. Students in art appreciation classes consider the visual arts from multiple perspectives including concepts, interrelationships and relevance to different disciplines and with everyday life. Many strategies support and reinforce critical thinking that is essential to all disciplines at a polytechnic institution.

The activities included are just a sampling of techniques. The definitions are:

**Active learning:** alone or in pairs:
Doing something besides just listening to lecture, reacting to lecture material
Cooperative Learning: groups of 3 or more:
Complex tasks, multiple step exercises, research projects &/or presentations

Active Learning:
- Affective Response—provide an emotional or valuative response to material:
  Students look at works of art and note the reaction/response they have to the image/artwork. They reflect on what they see and what has been discussed regarding the components of a work of art the Elements of Art and the Principles of Design. They consider other information such as how colors have symbolic meaning as well as have psychological effects on individuals.

Students consider the work of art in the context of the time it was made vs. how it may be perceived today. Discussions in class consider what we know, and how we learned or acquired the information. Students evaluate how connections, associations, or summations are made and how that may be reflected in the way we view art. The student may work alone (active learning) and/or in small groups (cooperative learning).

- Puzzles & Paradoxes:
  Students become familiar with a topic, concept, etc. through research, reading (articles, newspapers, online) outside of class and/or watching videos in/or out of class. Students discuss issues and defend their opinion(s). (Examples: a. the topic of Blockbuster Art Exhibitions, pro’s, con’s and student’s opinion including why they liked/disliked it. B. Reparation of artworks to country/culture of origin or owner. The topic includes well documented artworks such as The Elgin Marbles as well as new twists with news making current events such as Queen Nefertiti.

- Evaluation of another students work:
  Students create a variation on A Coat of Arms or Blazon in a visual design that represents them, using symbols and images. In class students in pairs or small groups review the original sketches of the other student(s). Positive feedback on the symbols and composition are given and then considered when the final version is made. The Final version is also reviewed in class and pairs of students write out their comments on the finished work regarding “readability”, referencing such aspects as symbolism and composition.

- Visual Lists:
  Variation is with the literal looking at art images and comparing them for various aspects. One example is comparing ancient Egyptian and Greek sculptures.

- Games:
  Modifying games such as Jeopardy and Bingo are ways to engage teams or the entire class in reviewing lessons/lecture/readings for class. Students respond to the aspect of competition and can become very engaged.

LAW
Teaching law in an undergraduate institution to polytechnic students presents a number of challenges. First, many students are not interested in the content as they feel that it is irrelevant to their discipline (i.e. I’m studying to be an engineer…why do I have to learn law?)

Second, polytechnic students often have trouble “thinking like a lawyer” as opposed to thinking like an engineer (although, the thought processes are not so different, both being logical and analytical in nature.)

Third, there is often a lack of material suitable for undergraduate level law courses, especially once you go beyond the basic business law courses. This leaves only law school materials to choose from. Using these materials however only magnifies the issues mentioned above. Due to the complexity of these materials, the content is even more uninteresting and difficult for undergraduate students to grasp.

As such, it is necessary to think outside of the traditional legal education “box” and use some active learning techniques to keep undergraduate law students engaged.

The following are techniques that have been used in undergraduate law courses across disciplines:

1) Mock Trials – Students are assigned various roles (attorneys, witnesses, jurors, etc.) and act out in a complete trial starting with jury selection and proceeding all the way to a verdict.
2) Mini-Case Studies – In this method, the instructor spends a minimum amount of time lecturing in class and most of the class period actively engaging students in case studies. The instructor breaks the class into groups and presents a fictional legal scenario demonstrating a legal problem. The groups discuss and then present 1) the facts of the fictional case, 2) the applicable law, 3) an analysis of the problem and finally, 4) a conclusion.

3) The Socratic Method – Often used in law school, this method forces students to be engaged and “on their toes.” In this method, the instructor calls on students at random and asks them questions about the material (regardless of whether he/she has lectured on that material yet). Should that particular student not know the answer (or sometimes even if they do), the instructor calls on another student to verify or challenge the first student’s answer. At the risk of being embarrassed or proven wrong, students are forced to be prepared for class. Students are given points for correct answers preparedness.

4) Student polling (Use of “Clicker Systems”) – Throughout the lecture, the instructor asks survey-style questions and students answer the questions using hand held clickers. Results display on the screen anonymously. This gives the classroom more or a game-feel and keeps students engaged. Typical clicker technology interfaces with Microsoft PowerPoint, so instructors are generally able to use their existing lecture content.

5) Student-Generated Content – Making students responsible for the content to be learned is a frequently used technique. This can take many forms including:
   - Exam questions (Have students generate 5 exam questions based on the material for that day/week)
   - Student-led discussions (Have 1-2 students each class come prepared with 2-3 discussion questions and lead the class in a discussion based on the material for that day/week)
   - Student-led classroom activities (Have 1-2 students come to class prepared to lead their classmates in a 30-minute activity that demonstrates the material covered that day/week).

6) Debates – Students divided into groups and are given two opposite sides of an issue and allowed to make an argument for their position. The opposing side is given a chance to respond to arguments made and a lively discussion ensues. This obviously lends itself to a law class.

7) Game-based learning – In this technique games are used to demonstrate concepts to students. The games can be as simple as Jeopardy or as complex as video/computer games.

The techniques and methodologies listed above are summarized and compared across disciplines in table 1.

**Table 1: Comparison of active learning techniques across disciplines**

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<td>Incentives (Candy Questions)</td>
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<td>Mind Breaks</td>
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<td>Wait Time</td>
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<td>Debates</td>
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There are several techniques and methods, as can be seen in table 1, that are effectively used in various disciplines. There are other techniques that certain disciplines use more effectively than others.

**CONCLUSION AND FUTURE WORK**

In this study, we have identified Polytechnic students as having ISTJ type personality. The research instructors in this study have a variety of backgrounds ranging from engineering, to law, arts, languages and mathematics. We have identified a few active learning techniques that, in our experience, work effectively for Polytechnic students. These are a subset of techniques and methodologies that faculty members’ use in various Polytechnic areas. Our goal is to map these across disciplines to qualitatively and quantitatively explore and identify which techniques work best in general for polytechnic students. The end result will be the identification of the top few techniques applicable across disciplines.

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REVISITING BROWN VERSUS BOARD OF EDUCATION: 57 YEARS LATER

Chinyere Ogbonna McGruder
Austin Peay State University, USA

ABSTRACT
The concept of race is deeply woven into the very fabric of America’s history. This very concept has affected to a large extent the way America deals with the issue of race relations, especially as it relates to education, segregation and the denial of opportunity. In 1954 the Supreme Court of America declared unconstitutional the separate but equal doctrine of state sponsored racial segregation in public schools in America. This paper examines how well the Topeka, Kansas school districts are integrated, Fifty seven years after the landmark school desegregation case. Secondary data pertaining to racial demographics for the Topeka Kansas elementary school student body was analyzed to see if African American comprises an increasing or decreasing segment of the student body.

Keywords: De Jure Racism, De Facto Racism, Segregation, Racial Group, Civil Rights Act of 1964, Title VI, Affirmative Action, Supreme Court

RESEARCH-IN-PROGRESS
“Examination of the pattern of segregation laws reveals plainly that they are designed not to prevent all contact between the races but to prevent contact on the basis of equality….Those who insist on the caste system in our society freely and unstintingly agree to the ritual of equal physical facilities so long as somehow there is also an accompanying communication that the negro is inferior and is to remain so. Segregation laws provide the ready vocabulary for that communication.”

“We conclude that in the field of public education the doctrine of ‘separate but equal’ has no place. Separate educational facilities are inherently unequal.”

“All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.”

Inherent in the 1954 decision of the Supreme Court in Brown versus the Board of Education, was the idea that every individual has the right to an education that was not impinged upon by the concept of race. This decision was a direct blow to the specific designation of Separate but “equal” educational facilities for solely “Negro” Americans. The Brown versus Board of Education case challenged the constitutionality of the system of law that mandated segregated schools in the south. The importance of the decision was magnified by the fact that good education provides the basis for economic opportunities. The importance of a quality education for the individual in this information age and the economic opportunities it can afford them and society as a whole cannot be understated. The Brown vs. Board of Education decision was based on the premise that equal opportunities in education should be available for all regardless of race. Thus an educational system that was fundamentally biased with regards to race, will most probably result in the marginalized race being inadvertently unable to reach their potential economic enfranchisement. The Supreme Court’s decision paved the way for civil rights movement of the 1960’s and subsequent affirmative action programs.

United States of America is composed of various individuals from different ethnic, racial, cultural and religious background. Inherent in the constitution is the idea that all people are created equal.

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17 Amendment XIV of the United States Constitution (ratified July 9, 1868)
The Civil Rights Act of 1964, prohibited employment discrimination that was based on "race, color or national origin. Although discrimination is prohibited both by United States’ constitution and the civil rights act, equality in the truest sense of the word is yet to be achieved in America. Although the Supreme Court has outlawed De Jure segregation in schools, De facto racism still exists. De Jure segregation is government sanctioned segregation, while de facto segregation is segregation that is not government sanctioned but is there as a matter of actions by individual citizens. African Americans are the most segregated of the racial and ethnic groups in schools and otherwise within United States and segregation especially of schools is still a reality in many school districts.19

According to Robert Cotterol et al;

“To many African American children, education remains separate and unequal despite Brown and its successor cases. There are also distressing indications—more than indicators really—that decades, if not centuries, of discrimination in education and employment have produced results that have taken on a cultural life of their own. Reliable observers tell us that many inner-city children have come to reject those attitudes and habits that are requisite for academic success. Excelling at school, doing well on standardized tests, studying hard, demonstrating an interest in class—these practices are seen as "acting white," a rejection of one’s own racial identity. To the extent that these observations are accurate, they bespeak a frightening internalization of older racist norms that put an exceedingly low ceiling on black intellectual capacity.”20

Although the 1954 Brown decision was met with utmost resistance by generally the southern states, the fact remains that 50 years after the decision of the Supreme Court was handed down, it could technically be said that official school segregation has been eliminated. But studies show that although school segregation is no longer offical policy, de facto segregation is still the norm in a great number of schools within the United States. De facto segregation is due to many factors including but not limited to housing patterns based on income, “white flight” from urban areas, school district residency requirements, parental school choices, lax enforcement of civil rights era protections and lack of funding for post secondary school education.21 But the underlying issue of de-facto segregation is that it is the result of individual or private actions as opposed to states’ actions. As such it is more difficult for courts to intervene with regards to such segregation. The Brown decision rested on the precept that under the 14th amendment right, government sponsored segregation was precluded, but this notion does not apply to actions of private individuals. Thus as evidenced by Milliken v. Bradley,22 the Supreme Court decided that the actions of private individuals (resulting in de facto segregation) were beyond the reach of the Brown decision.

According to Harvard Civil Rights project, the “resegregation” of the south is due to a backsliding society whereby black and white students increasingly attend different schools. This trend is partly driven by recent federal court decisions that outlawed civil rights-era protections including bussing and affirmative action. Also an increasingly number of Southern schools are no longer under court order to end discrimination.23

Affirmative action was instituted in the 1960s by President Johnson to help correct for the lingering effects of past discrimination on people of color and women.

According to President Johnson;

You do not take a person who for years has been hobbled by chains, and liberate him, bring him up to the starting line of a race, and then say, “You are free to compete with all the others,” and still justly believe that you have been completely fair. Thus, it is not enough just to open the gates of opportunity, all our citizens must have the ability to walk through those gates.24

The fundamentals of the above sentiment underscore affirmative action protocols utilized to this date. The establishment of affirmative action, should be considered in light of the world to which African-American have been subjected since the first slaves were brought to Virginia in 1619 by the slave traders. Slavery as an institution existed in America till the 1860s. Under this institution, African-Americans were chattel property with no legal standing or fundamental rights of citizenship or education. Even after segregation was officially over, up until well into the twentieth century, the fundamental rights of citizenship of

19 Id.
20 Id., at 239
African-Americans were practically non-existent and their morbidity and mortality figures as compared with whites in America were appalling.25

All things being equal, equality is the ideal for any modern society, but according to Justice Blackmum of the United Supreme Court in University of Regents v. Bakke,26 it would be "the cruelest irony" to base admissions solely on the perception of color blind' equality whereby individuals succeeded based on their academic and fully developed strengths.27 That precept or perception does not take into consideration the effects of past social, economic and educational segregation of African – Americans and the lingering effects of such segregation on social, economic and educational enfranchisement.

Title VI of Civil Rights Act of 1964, States that:

“No Person in the united States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. ”

It is interesting to note that university administrators utilized the language of Title VI to justify development of affirmative action programs. The reasoning was that past discrimination against minorities and women ultimately led to exclusion of women, racial and ethnic minorities from participating in higher education. Thus steps should be taken to pull them up to a level playing field. As such this could be achieved by rapidly, affirmatively recruiting and admitting minorities and women in order to ensure that the equal opportunities aspects of Title VI were carried out.28 Basically the presumption is that in-order to alleviate past injustice a form of reverse discrimination (affirmative action) is needed to correct the lingering effects of past discrimination. But there is generally no strong consensus for affirmative action within the United States. According to David Rosenbloom, the 1980s marked the decline in importance of affirmative action as a policy issue. This decline was attributed to three main reasons:

A- There is a continuous constitutional stalemate with regards to affirmative action and this is indicated by non-linear Supreme Court decisions of various affirmative action cases

B- There are other important internal demands within organizations that take precedence over affirmative action and

C- Affirmative action is not strongly favored as a panacea to race issues in employment, education etc. This marginalizes the political integrity and coherence of affirmative action programs.29 Thus appreciable integration of schools both at elementary and at university level will at best be a slow process, and this is evidenced by the fact that 57 years after Brown versus Board of Education, there are still large pockets of schools within USA that are not well integrated. .

With the marginalization of affirmative action programs especially at educational institutions, it would require greater period of time for minorities especially African-Americans to overcome the past effects of generations of poor quality segregated grade schools and economic disenfranchisement to achieve consistently well enough to gain admissions to elite undergraduate and graduate schools. For instance standardized tests which are considered for admission purposes at practically all higher institutions, has been a source of contention with regards to issues relating to bias. Lawsuits have been filed in the past claiming that standardized tests are unfair to minorities because minorities have consistently been subjected to substandard education when compared to Caucasian students. For example, in Cureton v. NCAA, a lawsuit was filed against the National Collegiate Athletic Association (NCAA) for utilizing sat score as a basis for collegiate eligibility. The NCAA policy mandated that students should receive a given minimum score on one of two standardized tests in-order to be eligible to join an athletic team or to receive athletically related financial aid during their freshman year. The plaintiffs argued that the use of sat score as a factor for athletic collegiate eligibility was biased. The opinion of the court was that use of SAT scores as standard for eligibility was biased against black kids and its utilization did not necessarily improve the NCAA’s overall graduation rates.30

According to the 2000 census, the median household income in 2000 was $42,148.00 which did not change statistically from 1999. Black households had a median income of $30,439.00, Native Americans $31,799.00, Hispanic households $33,447, White non-Hispanics $45, 904.00 and Asian/Pacific Islanders was $55, 521.00, respectively.31 While the more affluent can afford to send their children to quality preschool programs or provide in home instruction, those below the poverty level must

28 Id.
30 Ball, Cecilia, Dangers of Standardized Testing, Texas NAACP. September 1999.
depend on national programs and state initiatives in education to provide for their preschoolers. Headstart and other early childhood education programs target lower income children for enrollment, but miss most of the poor children the programs were designed for.32 Over thirty years of national research and studies have confirmed the benefits to society of early childhood education intervention in order to develop and improve skills for early school success.33 The benefits of early childhood intervention include reduction in numbers of students placed in special education, higher graduation rates, fewer law enforcement incidents and greater income. These advantages or benefits invariably result in a greater taxable income base and less dependency on welfare.34 Household income level is directly proportional to parental involvement and long term academic achievement. Generally household income is directly related to race.35 Thus when race is a determining factor in economic enfranchisement, individuals within the marginalized race are more likely to be locked into an unending cycle of underachievement and missed educational opportunities, which influence their children's quality of life and subsequent economic opportunities.

The Civil Rights Project of Harvard University reports that U.S. schools are becoming more segregated in all regions for both African American and Latino students. The facts noted in their study were that, while minority enrollment in public schools is about 40 percent nationwide, white students, on average, attend public schools that are 80 percent white. More than one-quarter of urban black students attend schools that are essentially 100 percent non-white.36 In the era of busing, the percentage of black students in the South who attended majority white schools rose to 43.5 percent (up from 2.3 percent prior to 1960). By 1998, the percentage of blacks attending majority-white schools declined 13 points, reaching the lowest level since 1968. Segregated black, latino, and white areas with poorly performing schools are characterized more so by poverty, than just racial makeup. In fact within the past three decades, almost all the states have had lawsuits challenging the funding of education through the use of property taxes, since such a system results in vast inequality in spending.37

Minorities, on average, make less money than whites and more of them live below the poverty level. For some successful minorities, access to wealthier suburbs and better schools is an option. Segregated schools may be successful with equal parental and financial support, but that is not usually the case. For instance schools in central cities within the Northeast have funding plans that are largely dependent upon property values. As such there are fewer resources for schools in poorer areas, making it more difficult for school boards and county commissions to respond to the concerns of their poorer constituents. School re-segregation hurts minority students by relegating them to separate and unequal education.38 It invariably leads to schools with higher concentrations of poor students, less-qualified teachers, weaker curriculums and lower test scores. The students who attend these schools are less likely to go on to college, and to work and live in racially integrated settings. It is now the norm that children attend schools that are close to their homes. Yet, there is no evidence that students at "neighborhood schools" do any better than those at schools where integration has been achieved. "Achievement" (when defined as high standardized test scores) is directly correlated to income level of the community, average educational level of parents and percentage of parents for whom English is their primary language. Race composition of the school in this situation is often a marker for these three factors. The undisputable facts indicate that blacks, Latinos and other minorities have not "caught up" and still constitute an economic and educational underclass.

The No Child Left Behind (NCLB) legislation was supposed to address the problem of non-performing schools by allowing parents whose children are in such schools, the opportunity to transfer out from such schools to better performing schools. The legislation was also aimed at providing parents the opportunity to purchase supplemental services with money taken from the schools budget. The choice option and the supplemental services have been problematic from the start, they have not been used much and do not have serious accountability requirements. The option to transfer out of one school and to another while being required to remain within the same school district does not proffer much choice especially if the school district is poor and overburdened. In addition there are no restraints against possible choices by parents that could increase segregation, for instance having more white parents choose to transfer their kids from more diverse urban schools to white majority schools. Supplemental services were a political compromise, there were no working models to follow and became a giant headache for school administrations.39

We cannot afford to fail to identify the "best and brightest" regardless of race. But even beyond that, good public education and especially university education is not just for those who make the grade or a certain score on a certain test, but an investment

34 Id.
35 Id.
36 The Civil rights project, "Harvard University," assessed May 6, 2005 http://www.civilrightsproject.harvard.edu
38 The Civil rights project, "Harvard University," assessed May 6, 2005 http://www.civilrightsproject.harvard.edu
by society in individuals who will contribute to a better society in the future. And a better society means that there are opportunities for all, regardless of race.

According to Harvard’s Civil Rights Project, about half of black, latino and native American students drop out of high school. In the twenty-first century a college education is a necessity for America’s children if they are to earn a livable income and remain in the middle class. By the time a student is ready to apply for post-secondary education their success in college will have been largely pre-determined by external socioeconomic factors beyond their control.40

Family income, parent’s social status, language spoken in the home, gender and race are but a few of these factors. Variables more internal to the student such as ambition, discipline, imagination, perseverance and maturity may explain individual success despite detrimental external factors. But poverty, educational opportunity and race are three of the main factors that drive the segregation of our public school system especially at the preschool to secondary school levels.41

Affirmative action cases brought before the Supreme Court during the late seventies have been deemed unconstitutional. Quotas, racial preferences and race-conscious admissions acquired negative connotations in the eighties and nineties. Lax and inconsistent federal civil rights enforcement has left this burden on the state and local governments to attempt to enforce or adjudicate with limited resources. This in turn has led to new debates and studies over the utilization of race sensitive selections in college admissions and a serious rethinking of the benefits and costs to students, schools and society at large. Another issue with regards to segregation is the financial aid process at the college level. Federal aid for middle class families and students has been expanded mostly as loan and tax subsidies. And, as states and colleges restructured their financial aid packages as “merit” aid, the benefit has increased for those with little or no financial need. Over the last twenty-five years tuitions have risen faster than family incomes all across the U.S. There has been an increase in wealth disparities along class and racial lines, as well as a considerable reduction in the proportion of college costs funded by need-based student aid.42

One of the aspects of the “American Dream,” especially for parents is to send their kids to college, with the hope that this would prepare the kids for a better financial future. As such, one of the basic goals of a higher education policy should be to make sure that this opportunity is not lost because of a family’s income or lack of wealth. Conceivably it would help if state and federal educational aid, are designed such that schools in low-income town and cities are provided with more compensatory education as well as other forms of academic assistance-ship, this would help lessen cross-district inequality of educational resources.43 In a society where 40% of students are non-white, it is more important than ever to be sure minority students can go to college. If fairness rests on equal educational opportunities, then accessibility and affordability are necessary ingredients for economic success.

Thus this research study utilizes secondary data from the Kansas elementary school district to determine if the elementary school population for Topeka Kansas, has a declining minority population over a 10 year period.

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41 Id.
THE NEED FOR TECHNOLOGY IN THE SCHOOL PHYSICAL EDUCATION SETTING

Wendy Cowan and Yvette Bolen
Athens State University, USA

INTRODUCTION AND LITERATURE REVIEW

Technology continues to advance by leaps and bounds. The students who populate the physical education classes today have never known a life without cellular phones, computer or Internet access, DVDs, CDs or video game consoles. Yet the question remains – why do physical educators fail to integrate technology into the curriculum?

A number of limiting factors have been determined across physical education settings. Limitations documented include the budget, class size, comfort level of teachers, equipment availability, time and teacher training. (Gibbone, Rukavina, and Silverman, 2010). However, teacher training as an indicator of limited technology use in the physical education setting was not the case in a study conducted by Baert (2011). Research was conducted to examine 198 physical educators’ preparation to utilize technology in the physical education setting. These teachers taught in schools recognized nationally by Physical Education Teacher Education (PETE). Findings showed that while physical educators were proficient using basic technology, this did not promote the use of it as a teaching tool and it did not promote teaching the use of technology to students.

Studies have determined that the technological skills possessed by a teacher, in combination with a positive attitude, are strong influences in the decision for the teacher to utilize technology (Christenson, 2002; Migliorino and Maiden, 2004). When a teacher demonstrates a positive attitude, as well as the manner in which a teacher recognizes the value of integrating, tends to dictate technology application in the educational setting. Social norms, the demands placed on physical educators, and self-efficacy are factors found to shape teachers’ attitude toward technology (Gibbone, Rukavina, and Silverman, 2010).

The use of technology has been proven to enhance the teaching–learning process. Technology has long influenced physical education practices. Physical education and the world of athletics have always been reliant upon the development of physical skills while ensuring the prevention and/or care of athletic injuries. Across the globe some of the earliest technological discoveries have connections to the area of physical activity. Technological development in sports equipment, clothing, shoes and a myriad of gear have evolved in design, resulting in performance enhancement.

The use of the Internet alone can enrich the physical educator’s preparation for teaching. Resources, lesson plan ideas, and other communication methods are just a few examples of ways in which the Internet can expediently assist in the retrieval of teaching material, in the organization of instructional materials and in the planning process in general (Friedman, 2006). Content-based software programs can prove useful in developing teaching lessons, including developing a variety of visual presentations.

Physical educators can utilize validated fitness assessment instruments available from reputable web-sites and educators can develop web pages to use to promote the causes of physical and use this form of media to communicate student progress and objectives with both students and parents. Experts recommend integrating exercise equipment, digital videos, and numerous other fitness-related devices into daily lessons and when developing teaching units. Some of the most budget-friendly technological devices include pedometers, CDs, DVDs and heart rate monitors (Mohnsen, 2009). Exergaming, the use of video games that require the participant to participate through physical activity, is another innovation available for the physical education setting (Thompson, 2008 and Mohnsen, 2009).

The National Association for Sport and Physical Education (NASPE) has established guidelines for physical educators to follow which assist students in meeting the National Standards for Physical Education (National Association for Sport and Physical Education, 2007). These suggestions are designed to afford physical educators with the knowledge of how to effectively use technology as a supplement to teaching, rather than as a substitute for teaching (Figure 1).
The Need for Technology in the School Physical Education Setting

Global

Figure 1

NASPE (2009) clearly supports the potential of technology as an effective tool for enriching physical education instruction when utilized in light of the organization’s guidelines. Technology has the ability to change the delivery of teaching dramatically. More educators across all subjects will be more willing to integrate technology into everyday teaching if given reasonable preparation, practice, and access to the appropriate resources.

Keywords: Physical Education, Technology, NASPE Technology Guidelines.

REFERENCES

DETERMINING EQUALITY FOR CALIFORNIA OUT OF SCHOOL TIME PROGRAMS: A REVIEW OF CALIFORNIA’S OUT OF SCHOOL TIME PROGRAM STANDARDS

Carl B. Featherston III
Alliant International University, USA

ABSTRACT

Education reform has made great strides towards redefining out of school time for children from low socio-economic backgrounds. Nationally, there are two federal education programs that provide funding for high quality out of school time programming, 21st Century Community Centers Grant, and the Child Care and Development “latchkey” program (U.S Department of Health and Human Services, 2011; U.S Department of Education, 2003). In California, 21st Century funding is regulated along with an out of school time state initiative called Proposition 49, the After School Education and Safety program (California Department of Education, 2009). Though both programs support children from lower socio-economic status, they serve them differently. In 2009 the latchkey program was terminated due to beliefs that both programs serve the same population in the same capacity (CDE, 2009) The focus of this paper seeks to identify regulation standards on the operations, staffing, and enrollment of out of school time, and compare them as they relate to the populations they serve.

Keywords: Academic Support, Proposition 49, Latchkey, Enrichment, Family Literacy.

INTRODUCTION

Education reform has made great strides towards redefining out of school time for children from low socio-economic backgrounds. Out of school time which started out as privately funded “idiosyncratic’ boys club and settlements have now evolved into state education initiatives, geared toward providing learning and developmental support for school age children (Halpern. 2002). Nationally, there are two federal education programs that provide funding for high quality out of school time programming, 21st Century Community Centers Grant, and the Child Care and Development “latchkey” program (U.S Department of Health and Human Services, 2011; U.S Department of Education, 2003). In California, 21st Century funding is regulated along with an out of school time state initiative called Proposition 49, the After School Education and Safety program (California Department of Education, 2009). Both programs, support children out of school time efforts but vary operationally and in the populations that they serve.

Latchkey program is supported by the Child Care and Development Block Grant, provides children from low income families, from kindergarten to ninth grade, high quality subsidized childcare (United States Department of Health and Human Services, 2011). The After School Education and Safety program provides local after school education and enrichment programs through local community partnerships that allocate resources for literacy, academic enrichment and safe alternatives for students in grades kindergarten to ninth grade (California Department of Education, 2011). In conjunction with the ASES programs, 21st century provides additional funding to support out of school time efforts to improve academic achievement, further enrichment services that support the academic program and family literacy related development services (CDE, 2009). Each of these programs provides constructive safe alternatives for children, but serves differently in how they address the needs of children and families.

LATCHKEY PROGRAM

The Child Care and Development Block Grant Act established funds for states to establish quality programs for low income children, of which after school child care, also referred to as “latchkey” programs, became about. Federal funds were provided to states to accomplish the following:

- Granted flexibility in developing child care program standards is suited to the needs of the children and parents, resident in their own state.
- Empower working parents by promoting choice in making decision in regards to the type of care they are in need of.
- Promote the use the use of consumer education information on child care option to support parental choice.
- Assistance to states in establish state regulation in implementing health, safety, licensing, and enrollment standards (US Department of Health and Human Services, 2011)
These guidelines provided states to develop high quality standards for staffing and operational procedures for enrollment. Mandated by California state regulation, staff must be credentialed by the California of Teacher Credentialing in order to provide any services to children in a child care program per California Code Regulation Title 5 (California Office of Administrative Law, 2011). These credentialing requirements are as follows:

- **Program Director (Section 18203)**
  - Bachelor Degree
  - Core ECE coursework where 12 credit hours in school age coursework
  - One year experience as a site supervisor

- **Site Supervisor (Section 18205)**
  - AA in early childhood development or 60 credit hours
  - Core ECE coursework where 12 credit hours in school age coursework
  - 350 days of experience in an instructional capacity within 4 years.

- **Teachers (Section 18200)**
  - 12 to 24 credit hours in core ECE coursework with at least half of the coursework in school age care
  - 16 credit hours in core academic subjects (science, math, language arts, social studies)
  - Master Teachers must have 6 additional credits in a specialty area.

Individuals holding these credentials must develop a five year professional development plan, and renew their credentials and plans every five years (CCTC, 2011).

Priority enrollment is given to children are or at risk of being neglected or abuse (COAL, 2011). First priority is given to children who are referred by social, legal, or health service agencies due to neglect or abuse (COAL, 2011). Second priority is given to children in grades k-3 and their siblings under the age of 13 whose families are in vocational/education training (COAL, 2011). Final priority is given to children in grades 4-9 and siblings under 13 whose families are in vocational/education training (COAL, 2011). In 2009, the program was terminated due to the new After School Education and Safety Program (CDE, 2009).

**PROPOSITION 49 & 21ST CENTURY LEARNING CENTERS**

The After School Education and Safe Program was a ratification of the latter Before and After School and Neighborhood Partnership program (California Office and Legislative Counsel, 2011). ASES funds are a result of California’s 2002 Legislation, Proposition 49. Proposition 49 provides general funds towards facilitating after school programs for title one schools (CDE, 2009; Child Development Policy Institute, 2006). The 2001 No Child Left Behind Act granted federal funds for the establishment, or expansion of before and after school programs (CDE, 2009; US Department of Education, 2003). ASES and 21st Century funding is given to schools who have at least a 50% free and reduce lunch rate (CDE, 2011). Staffing regulations for ASES programs and 21st century programs are that:

> “each staff position at a minimum will ensure that all staff members who directly supervise children meet the minimum qualifications for an instructional aide, pursuant to the policies of the school district” (California Office of Administrative Law, 2011).

This is the only standard for staff qualification that is mandated by the state of California. Children attending an ASES program are eligible to participate in the program based on capacity, implying a “first come, first serve” policy (COAL, 2011). In addition, it is not required for ASES programs to charge a fee or conduct individual eligibility based on need (COAL, 2011). Priority for enrollment of children in middle or junior high school will be given to those who attend daily. As a result, children who are eligible for free and reduce lunch and latchkey services are not guaranteed priority for ASES and 21st Century programs.

**DISCUSSION**

Though ASES and 21st century programs provide out of time opportunities to students attending low income schools, they do not meet the immediate needs of children and families served by the latchkey program. ASES and 21st Century funds run according to the school academic calendar, where as latchkey programs run year around (CDE, 2009; CDPI, 2006). Priority of funding for ASES and 21st programs are given to title one schools and does not guarantee priority in enrollment, whereas latchkey program funding are allocated to programs that can serve low income families and (USDH, 2010; CDPI, 2006). These children may or may not attend ASES funded schools, and cannot be served by ASES programs due to this technicality. As a result, children and families are displaced and no longer being adequately served.
LIMITATIONS

This paper sought to compare legislative mandates of ASES/21st Century programs and Latchkey programs, and did not take into account statistical population data. Population data could include an actual statistical analysis on the population that was served in the latchkey program, illustrating the disparities of constructive out of school time opportunities cause by the termination of the program.

IMPLICATIONS FOR RESEARCH

Further research could observe the level of impact that ASES/21st Century and Latchkey programs have on the lives of children. Possible research questions could include: How are title one students proportionately served in ASES/21st century programs? Are their academic achievement differences is students who attend latchkey programs vs. ASES programs? How are latchkey children being served currently in California?

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California Office of Legislative Counsel. (2011). 21st century community learning centers. California Education Code (Section 8487.7-8484.9)
ASSESS OR PERISH: FULFILLING LEARNING OUTCOMES ASSESSMENT IN HIGHER EDUCATION, A CASE STUDY OF DIRECT MEASURES OF ASSESSMENT

Kingsley O. Harbor
Jacksonville State University, USA

ABSTRACT

When outcomes assessment débuted in the 1980s, it was greeted by the academic community with skepticism and thought of as something that would go away after a while. However, more than two and a half decades since its inception, learning outcomes assessment (or assessment of output rather than input) has proved to be more resilient than first thought. It is increasingly gaining momentum as the firestorm—legislatures’, parents’, and employers’ dissatisfaction with and indictment of higher education performance—which gave birth to it has continued unabated. Consequently, programs now have to assess their performance and justify their existence or be eliminated.

This paper attempts to address the assessment issue. It is not aimed at assessment gurus. It is for all those in higher education who may be new to learning outcomes assessment, for instance current unit heads—program coordinators, department chairs, directors, associate deans, deans, or their designees—as well as all others who aspire for such leadership positions in the future. Based on this author’s previous experience as a new assessment coordinator, the author realizes that the afore-mentioned group of people can benefit significantly from a comprehensive sample of a successfully implemented learning outcomes assessment, and this paper is an attempt to provide such a comprehensive sample.

Beginning with an assessment plan, it discusses how to move from program mission to the objectives, which drive the assessment. It shows a comprehensive assessment plan with all its constituent parts, such as a statement of objective, assessment method for measuring the objective, expected outcome/benchmark, time to administer test, who will administer it, reliability and validity of the measuring instrument, dissemination of results—to whom, regular evaluation/check of measuring instrument, timeline, and closing the loop. Following the presentation of the constituent parts of an assessment plan, the paper presents, as a case study, one successful program’s development and implementation of two direct measures of assessment—a capstone project and an exit exam.

Finally, it suggests several other direct measures that can be used in assessing different programs in higher education, as well as pitfalls to avoid in employing exit exam as an assessment measure.

Keywords: Outcomes Assessment, Direct Measures, Course-Embedded Assessment, Capstone Project, Exit Exam.
SUSTAINABLE LEADERSHIP SKILLS ACQUIRED BY CROSS CULTURAL EDUCATION

Dustin Bessette
Marylhurst University, USA

ABSTRACT
Leadership skills are some of the basic functional assets that any student and professor must value in terms of academia and scholastic work, wherever they are in the world. One task that many fail to comply with is finding each leadership skill that he or she is comfortable with and developing that skill to their personal sense of perfection. New concepts must be developed and substituted in place of elder tactics in order for students and professors to have an intertwined relationship between them and the subjects being studied. As the progressive aggression for tradition education declines, these new methods of education are being put into effect not just nationally but internationally. More students are seeking true information outside of the classroom and into the real world, thus giving them a cutting edge means of integrating the theories towards their basic education.

With universities and institutions using new methods and platforms for educational learning, new varieties of cross-cultural education is also available to students worldwide. Colleges, universities, and institutions now have access to what one of the best and most efficient ways for educational platforms to date. Leadership, diversity, cultural, and negotiable exchanges skills are now readily available to students seeking information from very distant counties. These skills, theories, and concepts are and will be the sole providers in the business world as businesses, organizations, and associations change their ever learning methods for accepting employees into their society.

Students, facility, professors, and universities as a whole, have to be ready to take in this new expanding grasp of knowledge as they enter a new phase of employment and education. Changes and alterations will only prove to be sufficient as long as their counter-parts prove to show efficient changes within their society oriented programs. Giving ever changing leadership education to a now larger grasp of students across the globe, with efficient technology, and financeable programs brings about a new paradigm to the diverse education world.

Keywords: Educational Platforms, Cross Cultural Education, Sustainable, Diversity, Leadership Skills.
FLORIDA SUPERINTENDENTS PERCEPTIONS OF ONLINE TEACHER EDUCATION COURSES AND PROGRAMS

Neil T. Faulk¹ and Veronikha Caceres Faulk²
¹McNeese State University, USA and ²University of Texas at Tyler, USA

ABSTRACT

This study examined Florida public school superintendents’ perceptions of online teacher education. Data for the study was collected through the use of a survey questionnaire. The researcher used regular and electronic mail to survey all of the seventy-four superintendents of public school districts in Florida. Twenty-nine superintendents responded to the survey which represented a response rate of thirty-nine percent. Superintendents apparently perceived that online teacher instruction would not totally or holistically prepare future teachers for all the demands that teaching requires. Despite a majority of negative superintendent perceptions regarding the key areas of classroom management and the social skills needed to succeed as a teacher, superintendents did perceive that online courses could positively impact the areas of teacher methodology, teacher principles and theories. It must be noted however that nearly seventy-five percent of the superintendents had reservations in hiring teachers that had been trained primarily through the electronic online format. Due to a large majority of negative perceptions within the hiring aspect of the survey it was finally concluded that superintendents do not have much faith and confidence that online courses will prepare teachers for the demands of teaching. These results are very similar with results within five other states in which school administrators have been surveyed regarding this topic. Despite the research conclusions that school officials do not have high levels of confidence in this new methodology of preparing teachers the universities continue to expand the online programs in most areas including teacher education. Many superintendents simply feel that teaching K-12 school students should be learned within a similar context rather than being isolated in front of a computer screen. It would seem that universities would want to empirically prove the merits of a methodology or program before transitioning into the methodology or program. This has not happened in this case.

Keywords: Online Teacher Education, Teacher Preparation.
MIDDLE SCHOOL INFRACTIONS DECREASE WITH THE IMPLEMENTATION OF AN AGGRESSIVE ANTI-BULLYING INITIATIVE – P.R.E.S.S.

Jackie Hester1, Yvette Bolen2, Bruce Thomas2, Beth McCulloch Vinson2 and Ben Heatherly3
1Buckhorn Middle School, USA, 2Athens State University, USA and 3Brookhill Elementary School, USA

INTRODUCTION

In the past three decades the effect of bullying has been brought to the forefront as precursors to success and failure in schools. The victims of bullies and the bullies themselves experience detrimental problems in later societal life (Mishna, 2009). Individually, students have been subjected to a variety of types of bullying. Categories of bullying include physical, emotional, verbal, sexual, homophobic, and with the advent of computers, cyber-bullying (DeVoe & Kaffenberger, 2005). Although agreeing that bullying was wrong and morally not correct and not relating to good values, many students have still chosen to bully and abuse their peers. In a study of 30 middle school students, 70% stated that they enjoyed the joy of bullying and school-based violence (Kerbs and Jolley, 2007).

Statistically, according to statistics posted in the American Psychological Association, only 20-40% of victims actually report this victimization. Approximately 70% of middle school and high school students experience bullying in the school setting. There are 7-12% of bullies who are habitual and pose a serious. Additionally, there are 5-15% of students that are bullied constantly, and 27% are bullied because they are reluctant to participate in sex. About 25% of students encourage bullying if not educated in techniques of anti-bullying. (Graham, 2011)

Long term effects associated with bullying include depression, suicide, anxiety, anger, and a drop in school performance. School shootings have been highly linked to bullying with 71% of the attackers being picked on and/or bullied (Graham, 2011). In order to curtail the seeming epidemic of bullying, various programs have been implemented in part or in whole throughout many school systems. Pioneer bullying program implementer, Olweus (1993) in his “Bullying Prevention Program” emphasizes three goals. These are a) reducing existing building problems among students b) preventing new bullying problems, c) achieving better peer relations at school. This program has been in existence for 35 years and has been replicated in numerous studies.

One study (Black & Jackson, 2007) utilized Olweus’s program. Six public elementary and middle schools in urban settings participated. Bullying incident density (incidents per 100 student hours) as observed during lunch (elementary and middle schools) and recess (elementary schools) decreased by 45% over 4 years of program implementation. A study (Bradshaw, Sawyer & O’Brennan, 2007) investigating the bullying perception of elementary, middle and high school teachers. The number of students involved in bullying was underestimated by the educators at all grade levels. However, when staff were better prepared to effectively react to bullying occurrences, they were also more likely to intervene successfully.

PROGRAM IMPLEMENTATION

P.R.E.S.S to Stop Bullying (Hester 2011) is an initiative which was developed in a focused effort to decrease the number of bullying incidents which occur during school hours. A program developed by Dr. Jackie Hester, this initiative was piloted to help decrease the number of incidents within Buckhorn Middle School. This program was implemented in 2009 at no cost to a public middle school; therefore, it was implemented without having to affect the dwindling budget of the education system. This implementation had no effect on the dwindling budget of today’s education system. Most importantly, the program consisted of strategies specifically designed to alert administrators and teachers of bullying and methods to decrease the number of bullying incidents. P.R.E.S.S., the acronym, is identified as the following:

P Providing a Positive, Open, Safe Environment

A school cannot become extraordinary unless it is a safe school. Students must feel comfortable and safe before they can truly perform at their highest ability. According to Yoneyama and Rigby (2006), bullying can be decreased by the presence of high teacher morale, positive learning climate, and an organized structure of the learning environment. As administrators, we must be visible in the hallways and be sure that teachers are visible. Teachers must make surprise visits in restrooms and be in hallways throughout the transition time.
The administration of this pilot study school spent at least half the time in each school day monitoring the hallways, classrooms, and the cafeteria. The administrators ate lunch with students, sat in classes, participated in labs, etc. They also encourage an environment where students want to come to middle school and then do not want to leave middle school.

Several things can be done at the local school to encourage a safe environment. The most important step is the school staff building a rapport with students. Other examples involve administration and faculty continuously supervising students throughout the school day, administration spending time in the classroom, student welcoming committees, and school staff eating lunch with students. Students that have a personal connection with school adults will most likely be open to sharing information related to bullying incidents with the adults in the building.

**R Reporting Systems**

Since anonymity is the most important issue when it comes to reporting, it is essential to give students opportunities to report bullying-related incidents without revealing identity. The pilot school provided students with a “Bully Reporting” button on the school website which allowed students/parents/siblings to report anyone who was being bullied while being transported to and from school or while on school grounds. The fill-in form was developed via Google Docs and step-by-step directions were provided. The benefit to the form was that an alert was sent to the administrator’s smart phone and the issue was then immediately investigated.

Other methods of reporting included leaving comment boxes, allowing notes to be privately submitted to administrators, and email. Once a student reported the issue, the administration investigated the report. The following suggestions for reporting were made by students: more alone time with adults, increased small group discussions, having a number than can be texted, and sitting down and talking with bullies.

**E Educating Students and Stakeholders**

The assistant principal gave sessions during the language arts block and educated students on bullying. The assistant principal also discussed the definition of bullying, what bullying was not, individuals involved in the bullying situation, how to report bullying situations, and show videos related to bullying statistics. The students were led in group conversations, allowed time for response to questions, and allowed for individual private response. The students were given the opportunity at the end of the session to evaluate the session and state any situation that needed to be investigated.

Sessions were planned to educate faculty and parents on bullying using a similar format as the student session. However, additional resources were given to aide with cyber-bullying and how to report cyber-bullying. For example, the link www.facebook.com/family was introduced and demonstrated. The Facebook “like” allows tutorials and gives resources on dealing with Internet safety and reporting bullying incidents.

**S Stand up and be a Bystander**

Being a bystander is a significant part of bullying. It is an easy idea to accept but often difficult to act upon. An eighth grader stated, “We see people suffer every day and what do we do? We watch them cry for help but we never do anything.” Students realized that bystanders should stand up and do the right thing. School faculty and staff made them comfortable and secure so that they would follow through on their actions. Albert Einstein stated, “The world is a dangerous place, not because of those who do evil, but because of those who look on and do nothing” (Albert Einstein Institute). Ultimately, when this quote was shared with students and they were shown a current video with alarming statistics, the aim was to help them realize that it is necessary for them to stand up and do something. If bystanders do their jobs and get students on the side of the administration, then schools are on the way to creating a community of protection and the ultimate learning environment.

**S Snitch-Free Environment**

One important factor in battling bullying within the school is being sure to provide a snitch-free environment. After administering surveys and student discussions, one of the primary concerns with adolescents was the fear of being labeled a “snitch” among their peers. At this pilot school, the students were provided with various ways to communicate with administration. Notepads were located throughout the building for students to leave notes under administrator and/or counselor doors. Passing students asked the principal or the assistant principal to see them later. Throughout the year, students visited the assistant principal’s
door and used the various strategies given to report issues. A student left the following note under the assistant principal’s door:

Dear Dr. H****,

We would like to inform you that C*** K**** has been bringing dip, cigarettes, and weed to school and has been selling and giving to students. We don’t want to start trouble so can you please not let anyone know who informed you of this

thanks

There was no name on the note other than the individual they were reporting. Among the 700 students in the school population, the administrator certainly did not know who had left the note but was proud that someone did and knew they would not be labeled a “snitch”.

Since the conception of the program, the pilot middle school witnessed a significant decrease in discipline incidents related to fighting and defiance of authority. The population of the pilot middle school was 558 in the 2009-2010 academic school year and was 692 in 2010-2011. During 2009-2010, the recorded number of discipline incidents for the 6th and 7th graders related to fighting was 56 and those deemed defying authority were 67. In 2010-2011 7th grade fighting incidences dropped to 34, and 8th graders were cited with 32 incidences related to defying authority. Therefore, there is a strong assumption that P.R.E.S.S to Stop Bullying assisted in facilitating a significant discipline reduction.

CONCLUSION AND RECOMMENDATIONS

Across the nation bullying is occurring at all age levels and in most work places, and it will take the work of many concerned adults to make vital changes. School-age students are extremely vulnerable to bullying without intervention. Further study is warranted to determine the long-term effects of intervention utilizing a school bullying program, such as P.R.E.S.S. This pilot study is on the forefront in documenting how not only adult, but peer involvement, is making a significant difference in the lives of school youth.

REFERENCES

USING VIRTUAL WORLDS TO TEACH EVENT PLANNING

Maurice Eugene Dawson Jr.¹, Darrell Norman Burrell² and Daniel Sampson¹

¹Alabama A&M University, USA and ²George Mason University, USA

ABSTRACT

As technology is constantly growing it is essential that academic institutions utilize this technology to enhance the classroom. Within some of the academic institutions marketing students aspire to enter the field of event planning. With limited resources, both teaching and research institutions are facing the utilization of virtual worlds such as Second Life (SL) and Open Simulator (OpenSim) to provide the opportunity to test marketing theories. The avatars in these virtual worlds are representations of actual people which enable students to obtain simulated hands on experience and interactions with “real” individuals. This experience allows a student to develop a variety of skills such as marketing, negotiating, time management, exterior and interior design skills that directly translate into this particular field. As the virtual world currently has over one million active residents this can prove to be a valuable and credible virtual sandbox.

Keywords: Virtual Worlds, Teaching Business Concepts, Application of Theory, Marketing.

INTRODUCTION

The objective of this research project is to offer undergraduate and graduate students the ability to take theories learned in the classroom and apply them in a virtual environment. Students will be able to understand the theory and how it applies in a real world environment which will allow students to become comfortable with a given level of risk. Virtual worlds have proven to be effective in graduate engineering systems engineering education (Dawson, M., Burrell, D., & Emanuel, W, 2011) in which students at Morgan State University utilized virtual worlds to better grasp the Systems Development Lifecycle (SLDC) process. In terms of low fidelity prototyping of real products and environments a similar task was has been undertaken in the development of a tactical military training system (Dawson, 2011). Figure 1 is an example of how detailed an event could be simulated in SL.

Figure 1: Hosted Event in Second Life
METHODOLOGY
To capture results a mixed methodology approach shall occur. Participants who act as the event planner are required to complete a likert scaled questionnaire to include full participation in an interview about their experience. This interview shall be recorded however only data is only releasable if appropriate approval is given by interviewee. All traffic at events shall be captured and compared against the number of email invites sent out to include all other forms of marketing communication. This will capture the effectiveness of the participants to capture visitors.

LIMITATIONS
As with any study the limitations should be noted. The expected limitations surrounding the study will be the student population at Alabama A&M University participating in a virtual world as an event planner. To mitigate this limitation, researchers shall engage students from other universities who will also participate as event planners to represent an appropriate population for research. The other significant limitation to this study is that it is sector specific however future research will incorporate other sectors.

REFERENCES
VOYEURISM IN JAMAICA: PERFORMANCE GENDER & CONTROL

Karen Carpenter
University of the West Indies at Mona, Jamaica

ABSTRACT

This paper looks at a slice of the Jamaican sex industry and the balance between performers and audiences, the voyeur and the viewed. It takes a lay approach to the understanding of the term voyeur and understands it not simply as the onlooker, but rather the person who derives sensual and sexual pleasure from the looking. In the print and electronic media in Jamaica today reports of public performances of sexual acts from striptease to live sex are now commonplace. Hardly a week goes by without a sex video, sex show or other sexcapade being described in detail by what appears to be a new genre of journalists, sex-reporters. The public response is almost cliché from the highly scandalised traditional responses to the sensational and lurid “create a scandal” version at the other end of the spectrum. Sex as pleasure as private and as intimate is being replaced by sex as public, commercial enterprise in a society that previously prided itself on being both Christian and “British” with all the decorum that the latter suggested. However modern Jamaica with its tensions between the traditional position and its commercialization of sex as an industry has become, “…a society so hypocritically and repressively constructed that it must inevitably produce an effusion of pornography...as [a] demotic antidote” Carter, 1979:86). The paper concludes that an essential element of the subject – object relationship between audience and performers in the sex industry has to do with the gender of each and the perceived control that each sex is perceived to exert within different contexts.

Keywords: Voyeur, Jamaica, Sex, Male, Female, Sexual, Power, Control, Performance.
ORGANIZATIONAL CHANGE AND PROSECUTORIAL MISCONDUCT

Wesley E. Phillips Jr.
Colorado Technical University, USA

ABSTRACT
Organizational behavior relates to the study of how individuals and groups act within the social, cultural, political, and legal systems within a corporation. Organizational values and goals are generated from formal and informal management philosophies, communication, group dynamics, and leadership. United States Prosecutors perform some of the most prestigious and honorable duties in the country by prosecuting violators of law. However, some prosecutors have violated the law themselves in order to achieve a conviction. Prosecutorial misconduct can be a serious problem within the United States Justice System. Organizational change consists of a systematic, transformative approach designed to assist a corporation with developing and implementing positive solutions for an improved organizational management structure. Many organizational change strategies have proven successful for corporations. The U.S. Justice System is managed based on the context of legislation, but limitations exist even within the law. Prosecutorial misconduct cases, even if few in number, clearly display the need for organizational change strategies to be implemented within the culture, and it may be a matter of legislation that is required in order to put it into practice. This paper examines prosecutorial misconduct, the effects on society, and the need for organizational change to eradicate judicial misconduct.

Keywords: Organizational Change, Prosecutorial Misconduct, Judicial Misconduct, Organizational Behavior, Prosecutors and Change Management.
EMERGING TECHNOLOGIES AS A DEGREE OPTION

Imad Al Saeed
Colorado Technical University, USA

ABSTRACT
Emerging media has great impacts on our society in the U.S. and around the world today (Klopfenstein, 2011). Emerging media technology is one of the quickest growing technologies that integrate into strategies for effective business, entertainment, and education (CTU, 2011). Many businesses depend on innovative media solutions to make a virtual communication with their customers by conveying their messages, advertising and selling their product(s) and entertain their customers. That encourages many universities such as Colorado Technical University, Saint Paul College, Champlain College, Hult International Business School, and others to offer collegiate education in emerging media. The overall focus of these programs is in preparing students to develop skills in solving marketing and communication challenges with various creative digital solutions. With this emerging media as a degree option, professionals can learn creative ideas and innovative media solutions as an answer for the current market demand. This paper focuses on introduce emerging technology in general and media technology in specific as a degree option. Explore the advantages and disadvantages of such different emerging media degrees with respect to the current business demand for innovative media solution.

Keywords: Emerging Media, Advance Degree, Virtual Communities, Virtual Communications, Social Media.

INTRODUCTION
Emerging technologies have created a big public revolution in virtual communications and media delivery reflected positive effects all over the world (Hicks, 2009; Hughes, 2002). Businesses increasingly looked at emerging technology and use media for the higher order skills to offer flexible, more effective, low-cost services to the consumers. Also, some organizations use virtual environment such as game-based learning environment to help their own employees in further developing essential skills to include proving scenario based learning. However these game-based environments are requiring more things such as information sharing, cooperation, and networks.

Both graduate and undergraduate are seeking degrees in emerging technology such as emerging media or digital marketing are a direct reflection of the market voracious demands for professional advance degree in emerging media. Colorado Technical University is one of the pioneers offering emerging media as a degree option for undergraduate and graduate management and computer science students. Having advance degree in emerging media will offer professionals the opportunity to fulfill a professional role in which they will be required to exam new media, social networks, and virtual world by develop virtual communities between people, information and technology. Also, they will be prepared for additional tasks such as to examine and offer effective and cost efficient solutions for managing security risks, such as information accountability and web privacy strategies. This degree option in emerging technology would help in examining the virtual communities by revealing the best ways to convert the virtual representations of real businesses into successful business strategies in the real world. This paper introduces emerging technology in general and media technology in specific as a degree option by exploring the advantages and disadvantages of such different emerging media degrees with respect to the current business demand for innovative media solution.

REFERENCES
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<td>7 – 15</td>
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<td>1500 - 5000</td>
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<td>IJAISL, International Journal of Accounting Information Science and Leadership</td>
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