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LETTER FROM THE EDITORS

Welcome to the *Academy of Educational Leadership Journal,* the official journal of the Academy of Educational Leadership. The AEL is an affiliate of the Allied Academies, Inc., a non profit association of scholars whose purpose is to encourage and support the advancement and exchange of knowledge, understanding and teaching throughout the world. The mission of the *AELJ* is to publish theoretical, empirical, practical or pedagogic manuscripts in education. Its objective is to expand the boundaries of the literature by supporting the exchange of ideas and insights which further the understanding of education.

The articles contained in this volume have been double blind refereed. The acceptance rate for manuscripts in this issue, 25%, conforms to our editorial policies.

We intend to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. We welcome different viewpoints because in differences we find learning; in differences we develop understanding; in differences we gain knowledge and in differences we develop the discipline into a more comprehensive, less esoteric, and dynamic metier.

Information about the *Journal*, the Academy and the Allied Academies is published on our web site. In addition, we keep the web site updated with the latest activities of the organization. Please visit our site and know that we welcome hearing from you at any time.

Michael Shurden
and
Susan Shurden
Co-Editors

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UNIVERSITY STUDENTS AS PORTFOLIO MANAGERS: PERFORMANCE VERSUS THE MARKET, EXPERTS, AND RANDOM SELECTION

Michael R. Luthy, Bellarmine University
Carl W. Hafele, Bellarmine University

ABSTRACT

As an educational experience and a testing of the Efficient Market Hypotheses, four teams of advanced undergraduate business students were each given the responsibility of investing and managing $10,000 in the stock market through a Scottrade.com account. Beyond structuring the initial investment, each team managed their account over a two month period beginning September 1, 2010. The intent of the exercise was to mimic the real world of institutional asset management where money managers strive to beat the S&P 500 index. In addition to competing against each other as they actively managed their portfolios, before the experience students picked randomly on a blank grid which was then populated with S&P 500 stock symbols. This random portfolio was also tracked over the investment period. The investigators' business school secretaries and the Dean's 7 year-old daughter also picked random portfolios. Lastly, recommendations from panelists and experts on Fox TV and CNBC's Mad Money program were also tracked.

Comparative results for all four team's actively managed portfolios are presented. Results from the teams' randomly selected portfolios as well as those from the television experts and novices' random picks are also presented. While not a full test of the Efficient Market Hypotheses, there is sufficient evidence to raise the issue of the true value of paying a stock advisor versus broad based index buying for an investor.

Finally, three years of end-of-course student evaluations, where the investment project was employed as the centerpiece, were examined. Results from an analysis of students' written comments and numerical assessments related to the achievement of course and educational goals are presented and discussed. Overwhelmingly, students viewed the investment management project the most significantly positive part of the course experience and recommended it be continued.

INTRODUCTION

The modern version of the efficient market hypothesis (EMH), as originally developed by Fama (1965), argues that there is an inherent level of efficiency in financial markets. The

efficient market hypothesis implies that it is impossible to consistently outperform the market index. This does not imply that the market cannot be outperformed from time to time, but rather, that is cannot be done on a consistent basis. The theory has generated a considerable volume of comment and is one of the most widely tested theories in financial economics.

The three postulated forms of the efficient market hypothesis are strong, semi-strong, and weak. Strong form efficiency states that stock prices accurately reflect all information available, from both public and private sources. This is rather difficult to empirically test given existing laws against insider trading and the difficulties with obtaining relevant information in private hands. Semi-strong market efficiency addresses this limitation by stating that stock prices reflect all publicly available information. Under this variant, markets respond quickly and accurately to any new information that is available. The weak form of EMH holds that all information contained in past stock prices is fully reflected in current prices. The implication of the weak form is that established trends cannot reliably be used to predict, and therefore beat, the market in the future.

While a number of researchers have tried to test the efficient markets hypothesis, the myriad of results and their implications do not lend to drawing a clear conclusion. For example, Haugen (1998, 1999), asserts that markets are inherently inefficient and therefore do not support the efficient markets hypothesis theory. On the other hand, others in academia, notably Fama (1997) provide extensive support for market efficiency. To this day, the concept is continuing to be explored and clarified (e.g. Jarrow and Larsson, 2012) without a successor for explaining the relationship between markets and information.

When any investors, be it a student group, an individual, or a professional manager invest money in the stock market, their goal is generally to beat the market's performance. If not, they should simply place their funds in a mutual fund and allow that fund to work to meet market expectations and performance. If a group of investors, in this case student groups, were to outperform the market once or twice, it would not provide definitive evidence against the efficient market hypothesis; however, if they were able to outperform the market repeatedly over time, it would lend some credence to a violation of market efficiency. An initial question to address, however, is whether using students as research subjects in this situation provides sufficient external validity.

STUDENTS AS RESEARCH SUBJECTS

Exploring (and explaining) the concept of the Efficient Market Hypothesis with students is nothing new. As an exercise within the confines of the classroom, instruction and hands-on experience on the workings of the EMH and related topics has been both popular and ongoing (e.g. Park, 2010; Ammermann, Runyon, and Conceicao, 2011; Carter and Jones, 2011; Donaldson, Flagg, and Orr, 2011). Others, including Melton, and Mackey (2010) have gone proposed an entire undergraduate course on investing that features real dollars.

While the use of actual funds by college students as part of the learning process has been and continues to be popular on college campuses, the shift from the management of theoretical portfolios to real ones is rooted in the search for realism. What began as in-class exercises with faux dollars has progressed to funded trading accounts to course-independent investment projects overseen and managed by college students without set end points. Given this new reality, the practice of collecting data from students involved in these more-realistic investment scenarios raises the perennial question of the validity.

The use of college-age students in field-based research suggests that findings based on experiments using student subjects may not be generalizable to the population at large (i.e. they exhibit poor external validity). Critics have long argued that undergraduate students are not representative of the general population and that any conclusions based on results taken from that population are suspect at best (Campbell and Stanley, 1963). A study by Alpert (1967) found that the responses of student subjects did not accurately reflect those of businesspeople and concluded that when students were used as surrogates for businesspeople, the study results had doubtful validity. These findings were supported in a study by Khera and Benson (1970) which presented evidence that businesspeople as subjects are more likely to provide a more accurate prediction of actual real world behavior than students.

In a number of studies from the 1970s and later focusing on different experimental tasks, results indicated that student responses could not be extended to the general population. More specifically, student response patterns differed from those of consumers. Students were not found to be valid surrogates for their parents (Vinson and Lundstrom, 1978), and students were unable to match the responses of actual housewives or businesspersons (Morgan, 1979). Additionally, Soley and Reid (1983) found significant response differences on four commonly employed measures of advertising effectiveness between college students and a sample of adults.

Despite the conclusions of these studies the usefulness of students as surrogates is not however, considered a closed question. Many contend that student sample responses may be quite useful under rather specific circumstances. Champagne et. al. (1987) asserts that given a fairly broad-based social issue, student data is valid. Farber (1952) and Kruglanski (1975) also consider the use of students valid in cases of theory building or so-called "universalistic" research intended to identify casual relationships among general behavioral concepts.

In a 1986 review article, Gordon, Slade, and Schmitt examined thirty-two studies in which students and nonstudents participated as subjects under identical conditions. They found that in studies reporting statistical tests of between-group differences, the preponderance of findings indicated the experimental results differed in the two samples. By contrast, no major differences associated with the type of subject were reported in those studies reviewed that did not employ statistical procedures to compare the findings in the student and nonstudent samples. The authors concluded that differential subject familiarity with the experimental task could be used to account for the preponderance of the major differences reported in most of the quantitative studies.

Additionally, Latour et. al. (1990) compared the responses of three groups of subjects: traditional students, non-traditional students, and full-time business employees on a series of items related to organizational effectiveness and performance. Their results indicated that survey research studies could develop valid data with student responses – under certain conditions. The critical factor, as the authors stated in their conclusions, was whether the concepts being investigated were experientially based or not. When the concepts under investigation were experientially based, student responses generally differed from those of practicing managers.

In this debate, Einhorn and Hogarth (1978) suggest that neither professional training nor experience necessarily increases the soundness of professional decisions. This contention was examined in the context of entrepreneurial talent by Robinson, Huefner, and Hunt, (1991). According to the authors, past research on entrepreneurs had been largely based on the assumption of stable personality characteristics which can explain how entrepreneurs are different from nonentrepreneurs. The assumption of stable personality characteristics would allow for the use of subjects who may or may not be entrepreneurs at the present time because they may be viewed as "budding" or potential entrepreneurs. If the assumption holds, the use of students in the experimental sample would be externally valid and the role of experience, at least in their setting, would be insignificant. Students who are current or potential entrepreneurs would exhibit the same stable defining characteristics as would nonstudents who are current or potential entrepreneurs. From their research, they concluded that students and nonstudents differ on a variety of characteristics which are supposed to be stable over time and situations according to personality theory. Because of these findings, they concluded that the use of students to represent entrepreneurs is a risky research practice at best.

From the review of research previously discussed it is clear that there is no consensus on whether or not student response data can be used to generalize to other populations or samples. There does seem to be some agreement however, that under some circumstances (e.g. perhaps for those tasks where the student subjects have direct experience or can be sufficiently trained) the risk to external validity from using student subjects is minimal. Consequently, making a task as real as possible, with training and consequences that accompany non-students facing the same task, may indeed be valid.

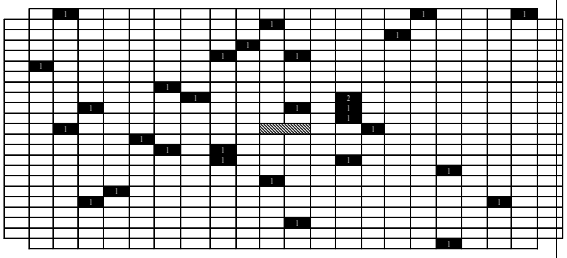
As something of a final word on this issue, one that lays the foundation for the current study, if the practice of using students as investment managers is evidence of at least the sufficient resolution of the validity debate then there is ample evidence in favor of students. Lawrence (2008) reported in the *Journal of Applied Finance* on the most comprehensive survey of student managed investment funds; over 300 universities worldwide. Their success and ongoing operation lend sufficient credibility to the practice to employ them in a test of EMH.

STUDY METHODOLOGY

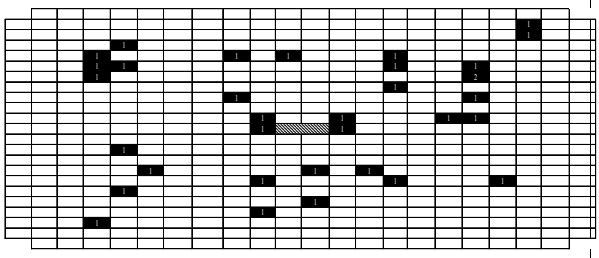
Students enrolled in an upper-level undergraduate class on investment theory were split into four teams, tasked with investing and managing their portfolios over a two month time span. Teams were required to consider course information and theories and to develop a plan for managing their portfolios.

Exhibit 1: Patterns of Random (i.e. Blind) Stock Selections across Hidden S&P 500 Grid

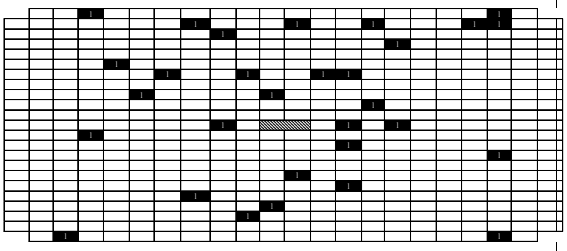
Team #1 (31 stocks)



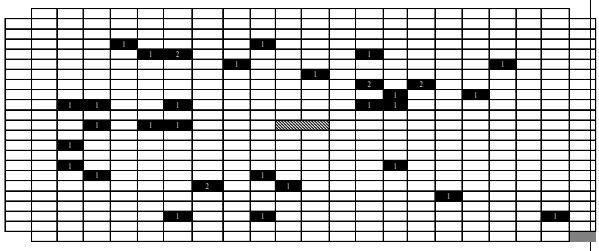
Team #2 (34 stocks)



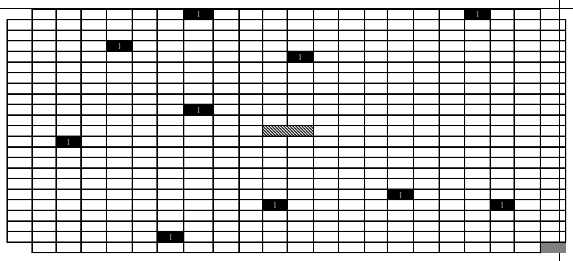
Team #3 (30 stocks)



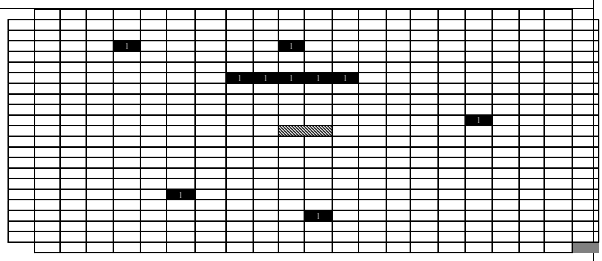
Team #4 (35 stocks)



7-Year Old Second Grader (10 stocks)



School Secretaries (10 stocks)



In addition to their active management strategies, at the beginning of the course, before the project was explained to them and before they were placed into teams, each student was given a blank 500 space grid. They were instructed to place a mark in any 3, 4, or 5 spaces. Because of the potential bias that the center of a grid and the corners represent, these areas were omitted. Unbeknownst to the students the stock symbols of the S&P 500 had previously been randomly placed into the grid. The result was that once students were in their teams and the random selections had been matched to the underlying S&P 500, each team now had a randomly selected portfolio of stocks that they would be responsible for tracking.

This random, or blind, selection process was also performed with two convenience samples, one – the two secretaries working in the school of business and second – the business school Dean's 7 year old daughter, Lilly, at the time in the second grade. The visual representations of these selections are presented in Exhibit 1. A cursory visual inspection confirms the random distribution or nature of the selections.

In exhibits 2 and 3, the breakdown of these random selections reflects portfolios that are both diverse, and if presented without the information on how they were selected, might garner many positive comments on their quality.

Lastly, to allow comparisons of student team performance to other cohorts, two financial expert cohorts who regularly make stock recommendations were selected – Jim Cramer of CNBC's Mad Money television program and guest panelists on the four television show block on Fox Television named the Cost of Freedom. For both groups recommendations were taken from a specific program late in August 2010, near the date when the student teams would begin their portfolio management. Their recommendations are presented in Exhibits 4 and 5.

Exhibit 2: Stocks randomly selected by novice investors

By Dean's 7 year old daughter		By Dean's two secretaries	
Symbol	Company	Symbol	Company
COG	Cabot Oil & Gas	APC	Anadarko Petroleum Corp
GME	GameStop Corp.	BBY	Best Buy Co. Inc.
JNPR	Juniper Networks	CLX	Clorox Co.
NOV	National Oilwell Varco Inc.	COL	Rockwell Collins
ROST	Ross Stores Inc.	DNB	Dun & Bradstreet
SCHW	Charles Schwab	EXC	Exelon Corp.
SYY	Sysco Corp.	FITB	Fifth Third Bancorp
TSO	Tesoro Petroleum Co.	HSY	The Hershey Company
UPS	United Parcel Service	TGT	Target Corp.
WLP	WellPoint Inc.	UPS	United Parcel Service

Exhibit 3: Random (i.e. Blind) Portfolio Selections by Teams and Novice Investors								
			Student Teams				Novices	
S&P 500		GICS Sector	#1	#2	#3	#4	2nd Grader (7 year old)	School Secretaries
82	16.4%	Consumer Discretionary	10%	24%	7%	17%	20%	20%
81	16.2%	Financials	16%	21%	17%	17%	10%	10%
73	14.6%	Information Technology	10%	12%	20%	6%	10%	
58	11.6%	Industrials	19%	12%	10%	14%	10%	30%
51	10.2%	Health Care	19%	9%	20%	3%	10%	
41	8.2%	Consumer Staples	10%	9%	3%	9%	10%	20%
38	7.6%	Energy	3%		13%	11%	30%	10%
36	7.2%	Utilities	3%	9%	10%	6%		10%
31	6.2%	Materials	10%	3%		14%		
9	1.8%	Telecommunications Services		3%		3%		
Results in unshaded boxes represents overweights of at least 50% compared to entire S&P 500 Results in shade boxes represent overweights of at least 100% compared to entire S&P 500								

Exhibit 4: Stocks Recommended by Fox TV Commentators			
Ticker Symbol	Company	Fox Show	Person Recommending
AA	Alcoa Inc.	Forbes on Fox	Stephane Fitch
AEO	American Eagle Outfitters Inc.	Cavuto on Business	Charles Payne
AKAM	Akamai Technologies Inc.	Cavuto on Business	Charles Payne
ALL	Allstate Corp.	Forbes on Fox	Bill Baldwin
CMCSA	Comcast Corp.	Bulls & Bears	Jonus Max Ferris
CROX	Crocs Inc.	Bulls & Bears	Kristin Bentz
HRL	Hormel Foods Corp.	Bulls & Bears	Gary B. Smith
PGJ	PowerShares Gldn Dragon Halter USX China	Cashin' In	Wayne Rogers
PKX	POSCO	Cavuto on Business	Charles Payne
SYMC	Symantec Corp.	Forbes on Fox	Victoria Barrett
UL	Unilever ADR Reptg 1 Ord Shs	Bulls & Bears	Tobin Smith
VLO	Valero Energy Corp	Bulls & Bears	Eric Bolling
WACLY	Wacoal Holdings ADR Reptg 5 Ord Shs	Cashin' In	Jonathan Honig

RESULTS

Exhibit 6 presents each student team's results, benchmarked against the S&P 500 performance over the specified two month interval. Each team was given $10,000 with a goal of beating the S&P 500 as well as the other teams in the course. As a group, the four teams were able to marginally beat the S&P 500, collectively earning a return of 13.0%. This was slightly better than the S&P 500's 12.8% return for September and October, 2010. As exhibit 5

indicates, while collectively the four teams did exceed their target benchmark, team 1 was primarily responsible for the overall performance, earning a stunning 20.4% return. Teams 3 and 4 generated positive returns in excess of the S&P 500 but marginally so. Team 2 did the poorest of the four teams with its returns dropping off precipitously during the last several weeks.

Exhibit 5: Stocks Recommended by CNBC Mad Money's Jim Cramer	
Ticker Symbol	Company
AGN	Allergan
HD	Home Depot
HOT	Starwood Hotels & Resorts
INTC	Intel
MRX	Medicis Pharmaceutical
NAL	New Alliance Bancshares
PEP	Pepsico
POT	Potash
TRV	Travelers Companies
WTW	Weight Watcher's
YHOO	Yahoo!

Exhibit 6: Participant Performance Compared to S&P 500					
	Active Portfolio Management	Passive Portfolio (i.e. Buy& Hold) Management	Random (i.e. "blind") Selection Portfolio	Best Performing Strategy	Best Strategy Return Compared to S&P 500
Student Team #1	20.37%	25.92%	14.74%	Buy & Hold	1.93% pts.
Student Team #2	6.03%	9.34%	13.74%	Random Selection	0.93% pts.
Student Team #3	13.11%	12.97%	13.76%	Random Selection	0.95% pts.
Student Team #4	12.49%	12.49%	28.68%	Random Selection	15.87% pts.
2nd Grader Lilly			12.71%		(0.10) % pts.
Secretaries			8.80		(4.01) % pts.
CNBC's Jim Cramer		12.03%			(0.78) % pts.
Fox TV Experts		10.08%			(2.73) % pts.

DISCUSSION

From a technical perspective, lessons learned by students involved with this project included: the importance of top-down macroeconomic analysis and diversification strategy, the ability to conduct fundamental investment research, signal monitoring of The Federal Reserve, consideration of transaction costs, sell disciplines, technical analysis, economic cycles, and more.

As to whether this classroom exercise could be considered a sufficient test of the efficient market hypothesis, the answer would have to be no. Beating market performance over time and not merely from time to time is the truest test of the theory. Currently, the gold standard (please excuse any unintentional finance-related pun) is Warren Buffett. Even his longevity and performance over an extended period cannot be considered definitive evidence against the EMH.

In early November of 2008 (CNNMoney.com, 2008) Mr. Buffett's Berkshire Hathaway Inc. reported a 77% drop in third-quarter earnings, hurt by declining insurance profits and a $1.05 billion investment loss. For those who like to point to Mr. Buffet as a point against the efficient market hypothesis, this announcement may give them some pause.

The significant question that is raised by these results is the true value of advice paid for by consumers to investment professionals. Given the pattern of results observed in Exhibit 4 where random selection and buy and hold strategies were the most successful, the claims by many investment advisors of their historical returns should be better viewed compared to the performance of select indices over the same period. It is this, "valued added" by the advisor above and beyond more passive approaches to investing, that is a truer reflection of worth – and one for the individual investor to consider before buying such advice.

CONCLUSIONS

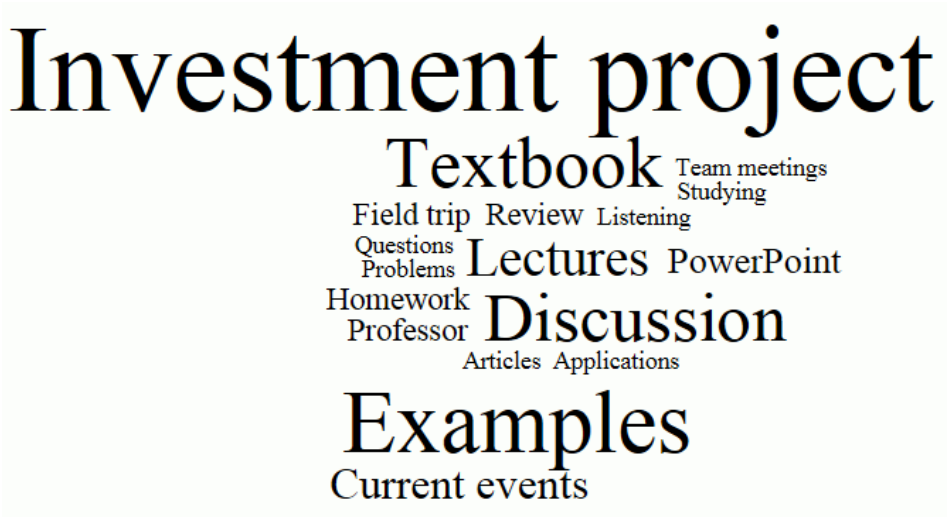
Reflecting on the investment project as well as the overall course experience from an educational perspective provides additional results worthy of consideration. From discussions with the student teams and an examination of end-of-semester course evaluations from the last three offerings, the experience was universally rated as a positive one. Exhibit 7 presents summary student evaluation ratings on key questions related to course outcomes.

Exhibit 7: Student Perspectives on Key Course Outcomes

%	x/5.0	N=	
96%	4.82	69	I would recommend that the investment project remains part of this course
94%	4.72	73	Instructor relates underlying theory to practice
92%	4.58	73	Contents of the assignments contributed to my understanding of the subject
92%	4.58	69	Course is practical and useful to those students for whom it was designed
92%	4.62	72	Course objectives are being accomplished

This viewpoint is further reinforced in Exhibit 8 which presents a word cloud (also referred to as a tag cloud) from responses to a question on positive aspects of the course. This data visualization technique presents words and phrases where size is frequency weighted. The stock game, also reported by students as the investment project, was judged as the single most significant, positive aspect of the course.

Exhibit 8: Word Cloud of Student Reported Positive Aspects of Course



The lone complaint to the investment project, voiced by another professor, teaching many of the same students in a marketing course the same semester mentioned (more as a complement) that they wished the faculty member wouldn't do this project again because "her students were spending all their time working on this [investment project] and neglecting their marketing studies."

In addition to the views of students on their course experiences, the evaluations also asked them to assess the degree of achievement of university and instructor designed course objectives. The results, presented in Exhibit 9, detail a very high degree of success.

Exhibit 9: Accomplishment of Course Objectives			
%	x/5.0	N=	
95%	4.75	69	Ability to understand the concept of portfolio management
95%	4.74	69	Ability to understand fixed income securities
94%	4.69	69	An understanding of the securities market and the efficiency of markets
94%	4.69	69	Ability to perform analysis and valuation of equity securities
94%	4.69	69	Ability to understand derivative products, international, and real assets

The student learning outcomes associated with the investment project, and the students' level of commitment in undertaking it, were in no small measure linked to the use of actual money for investing purposes.

Taken in their entirety, these results lead to the conclusion for educators contemplating the inclusion of an active investment project utilizing actual money, that it produces a profoundly positive educational experience for students. Additionally, it serves to enhance team-based and in-class discussions of the decisions and issues facing portfolio managers. Lastly, as opposed to

the simple reporting of a letter grade for a course, the experience also affords students the chance to discuss with prospective employers what they have done, and can do, when it comes to finance and investing.

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TEACHING AN OLD DOG NEW TRICKS: INVESTIGATING HOW AGE, ABILITY, AND SELF EFFICACY INFLUENCE INTENTIONS TO LEARN AND LEARNING AMONG PARTICIPANTS IN ADULT EDUCATION

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ABSTRACT

Participation in adult education and adult learning are two important areas of research as more and more adults seek learning opportunities, via academic institutions or organizational training programs, in their quest to achieve their various goals. Thus, it is important that educational (and business) leaders are aware of the dynamics surrounding the learning process of the "older generation" so that reasonable steps can be taken to facilitate their success in acquiring and retaining required and/or desired knowledge and skills. Numerous factors play a role in individuals' decision to participate in adult education and in the learning process they experience. This paper will investigate the influence of age, ability and self-efficacy on adults' intentions to learn and actual learning from educational/training programs. A conceptual model, implications for educators and educational leaders, and suggestions for future inquiry will also be presented.

Keywords: participation, adult education, age, ability, self-efficacy, learning intentions, learning

INTRODUCTION

Learning can be very broadly defined as the acquisition of information or skills measured by an improvement in some overt response (Botwinick, 1967). Estimates of the percentage of the adult population that participates in learning have steadily risen over the past forty years, with the most current study suggesting that approximately 46% of all adult Americans participate (Merriam, Caffarella, & Baumgartner, 2007). According to Cross (1981), the learning society is growing because it must. The author explains that individuals cannot depend on older generations to pass along information because the world changes faster than the generations, and individuals must live in several different worlds during their lifetimes. Societal forces such as demographic factors (an aging population/larger number of adults), social trends (rising education level, changing roles of women, civil rights), economic conditions, international forces

(being part of a global community), technological change and the knowledge explosion, increasing requirements for literacy, and changing assumptions (society examining its most fundamental beliefs) have played a role in this trend of increased participation in learning activities (Apps, 1988; Cross, 1981).

The finding that an increasing number of adults are pursuing learning opportunities suggests that adult learning is essential in today's world, and thus, worthy of study. Indeed, learning can lead to job acquisition, job retention, improvements on an individual's current job, promotions, and/or better alternatives (Apps, 1991). Merriam and Cunningham (1989) collapse the basic purposes of adult education into four major categories, namely to facilitate change in a dynamic society, to support and maintain the good social order, to promote productivity, and to enhance personal growth. Since learning has the potential to have such a profound impact on adults' lives, the elements that affect learning should be investigated so that steps can be taken to maximize learning when adults participate in educational activities.

Several of the motivations driving adults to participate in adult education are learning-oriented, including but not limited to the desire to know (i.e., knowing for the sake of knowing) (Apps, 1991; Burgess, 1971; Willis, 1985). Beder and Valentine (1990) conducted an exploratory factor analysis, and found one of the motivations to be self-improvement, with adults having the desire to learn new things. Studies have indicated that among the main reasons for participation (apart from earning more money), are a desire to know more/gain knowledge about some topic, the desire to learn of interesting things, and the desire to contribute to society (Willis, 1985). This suggests that many adults participate in education with the intent to learn.

However, participation in adult education, and thus, intention to learn and learning may be affected by numerous factors. Cross (1981) mentions situational barriers which arise from one's situation in life at a given time (e.g., lack of time due to career demands or family responsibilities, lack of money, or lack of transportation), institutional barriers which consist of all the practices and procedures that exclude or discourage working adults from participating in educational activities (e.g., inconvenient schedules or locations or inappropriate courses), and dispositional barriers which are associated with self-perceptions (e.g., feeling too old to learn or lacking confidence in one's ability to learn). One of the relevant self-perceptions associated with learning is Bandura's (1977) concept of perceived self-efficacy, which is concerned with judgments of how well an individual can execute courses of action (Ajzen, 1991; Bandura, 1982). Therefore, an adult may perceive that he/she does not have the capacity to learn very well.

Neugarten (1977) mentions Fiske's (1974) alternative view of personality as the study of perceptions, including the ways in which persons perceive, interpret, and construe themselves, situations, and other persons. Neugarten (1977) acknowledges the agreement among psychologists that there are observable changes in adult personality, with adults adapting to both biological and social events, leading to a continually changing basis within the individual for perceiving and responding to new events. Birren (1969) found that older individuals become aware of inherent limitations and of those imposed on them by advancing age, and consciously attempt to compensate for them. One of the compensations noted by the author is the ability to distinguish between critical and extraneous tasks and demands. Older individuals have a perception of points at which the complexity of decisions exceeds their capacities, and to thereby avoid unnecessary blunders (Rabbitt, 1977). Thus, adults may shun learning opportunities

because they perceive that these opportunities involve activities that are too complicated for them to handle.

Beder (1990) found that age was a major reason given by adults for not participating in adult education. Some felt uncomfortable because they were of the opinion that there weren't many people in class who were their age, and some simply felt they were too old. Again, this reflects self-perception. However, age can also biologically affect the learning process. According to Arenberg and Robertson-Tchabo (1977), older individuals are particularly disadvantaged when time to respond is short, indicating an age-related difficulty to retrieve stored information. Nonetheless, the authors also state that even under self-paced conditions, when speed is not a consideration, age differences in performance are found, demonstrating that rate is not the only factor limiting the performance of older individuals.

Madden (2001) notes that psychometric studies have observed age-related changes in cognitive function, and that these changes are roughly linear age-related declines in a variety of ability measures including efficiency of current processing (e.g., measures of spatial and reasoning abilities). Reese and Rodeheaver (1985) acknowledge a well-documented difference in performance on problem-solving tasks as age increases in adults, with older individuals using less efficient strategies, being less successful at attaining solutions, committing more errors, and being less likely to change strategies when their responses are incorrect. Hence, with advancing age, learning habits change, and these adults are less likely to adapt to maximally facilitate the learning process.

Occasionally, other problems accompany age to adversely affect participation, learning intentions, and learning even further. As adults grow older, their health sometimes falters. Maslow (1954) mentions the ability of healthy people to perceive reality more efficiently, to predict the future more accurately, and to endure or to enjoy the unknown, the unstructured, the ambiguous, and the mysterious. Thus, healthy individuals should be better able to cope with any challenges that accompany learning. Maslow (1954) also mentions that in healthy people, capacities are more interrelated, and cognition, conation, and affect are much more synergic than antagonistic or mutually exclusive. Therefore, healthy individuals should be better able to harness and use their mental and emotional capacities to act in a manner that is conducive to learning.

(General Mental) Ability is another factor that should be considered when researching adult learning. Cross (1981) mentions dispositional barriers, which are related to attitudes and self-perceptions about oneself as a learner. The author noted that the significance of dispositional barriers may be underestimated due to the social desirability issue as it is far more acceptable to claim situational or institutional barriers than to admit that one lacks the ability, is too old, or is simply not interested. Brookfield (1986) mentions Knox's (1977) observation that adults do tend to underestimate their abilities and, by overemphasizing school experience and interests, often perform below their capacity. Therefore, ability (or the lack thereof) may be a significant consideration that is relevant to self-efficacy, and thus, to learning intentions and learning. Ability may also affect learning without any interaction with self-efficacy. Brookfield (1986) states that although crystallized intelligence increases in adulthood, fluid intelligence decreases, and thus, older adults are able to learn as well as when they were younger, when and if they can

control the pace of learning. This suggests that if adults are not able to have control over the rate of learning, their learning may be diminished due to a lack of ability.

In consideration of the literature that suggests that age, ability, and self-efficacy impact participation in adult education, and as a result, intentions to learn, and actual learning, the primary purpose of this manuscript is to develop a model to help explain the phenomenon of learning among participants in adult education. This review is significant in that it provides the foundation for the design of a study to test the relationships proposed in the model. Findings can then be used to assist leaders in educational institutions and business organizations as they provide learning opportunities for their adult students and employees. For example, if results reveal that self-efficacy impacts learning intentions and learning, and that age and ability interact with self-efficacy to influence learning intentions and learning, appropriate initiatives can be implemented to help increase the self-efficacy of participants.

THEORETICAL FOUNDATION

The Theory of Planned Behavior was designed to predict and explain human behavior, and advocates that individuals' intentions to perform a given behavior capture motivational factors that influence their behavior (Ajzen, 1991). The author asserts that intentions are indicative of how hard people are willing to try and how much effort they are planning to exert to perform the behavior, and that the stronger the intention to engage in a particular behavior, the more likely should be its performance. Therefore, based on this theory, strong learning intentions should precede increased learning. In reference to self-directed learning, Garrison (1997) concluded that learning is associated with maintaining intention, as the latter establishes the individual's motivational state, which fuels him/her during the learning experience. Thus, an individual with strong intent to learn should be more motivated to do so, and as a consequence, exert more effort during activities, resulting in higher levels of learning.

In addition to attitude (i.e., the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior) and subjective norms (i.e., perceived social pressure to perform or not perform the behavior), the theory also supports perceived behavioral control (i.e., perceived ease or difficulty of performing the behavior) as an antecedent to behavioral intentions. Therefore, individuals should have stronger learning intentions if they perceive that learning is or would be easy for them. Ability, age, and self-efficacy are all factors that contribute to an individual's perception of how easy or difficult learning would be for them, and thus, should contribute to their learning intentions.

Colquitt, LePine and Noe (2000) explain that fear of failure may increase as individuals age, preventing older individuals from seeking and participating in educational and training opportunities. According to Gist and Mitchell (1992), ability is an important determinant of self-efficacy. Martocchio (1994) also found that inducing conceptions of ability was associated with heightened efficacy beliefs, and suggested that when inducement is used, individuals may view education and training as an opportunity or positive challenge, instead of a threat. These individuals should have higher learning intentions because they perceive the feasibility of learning. Quinones (1995) revealed that self-efficacy is related to motivation to learn, which impacts knowledge and skill acquisition. Colquitt, LePine and Noe (2000) defined motivation to

learn as the desire to learn. Martin, Chesebro, and Mottet (1997) asserted that state motivation to learn occurs when students are engaged in a specific learning situation with the intent to learn. Thus, motivation to learn and intent to learn are related constructs. Therefore, one can conclude that self-efficacy is also related to intent(ion) to learn, which influences learning.

According to the theory, a direct link between perceived behavioral control and behavioral achievement is also expected (Ajzen, 1991). The author explains that investigations have shown that people's behavior is strongly influenced by their confidence in their ability to perform it. Perceived behavioral control reflects anticipated impediments and obstacles (Ajzen, 1991). One can appreciate that if an individual does not view himself/herself as having the necessary ability to learn (whether due to lack of mental ability or perceived lack of ability due to older age), this lack of confidence in his/her learning ability incorporates an anticipated obstacle to learning in his/her mind, and will have an effect on his/her actual learning. According to Ajzen (1991), the view of perceived behavioral control is most compatible with the concept of perceived self-efficacy. The latter can influence choice of activities, preparation for an activity, effort expended during performance of an activity, thought patterns, and emotional reactions (Bandura, 1982).

Thus, an individual with low self-efficacy may choose not to direct a great deal of time and/or effort toward preparation for or involvement in learning activities because he/she may believe that despite his/her efforts, he/she still would not be competent to achieve the desired standard of performance. This lack of effort would result in "self-fulfilling prophecy," as performance (i.e., learning) would indeed be sub-par (i.e., minimal). In terms of emotional reactions, research has found a lack of self-efficacy to be associated with increased anxiety (Compeau & Higgins, 1995), which is associated with poor or impaired performance (Derakshan & Eysenck, 2009). Therefore, in a learning context, one would expect perceived behavioral control, and self-efficacy specifically, to affect learning outcomes.

PROPOSITION DEVELOPMENT

Learning Intentions and Learning

The intentions of the learner are particularly important; often, a desire to learn for a particular purpose can assist in overcoming many obstacles and inhibitions (Boud, Keogh, & Walker, 1985). The authors also explain that intentions influence a learner's approach to a situation and the ways chosen to process experience. Therefore, strong intentions to learn can override certain fears and anxieties associated with the learning process, and motivate individuals to engage in appropriate behaviors to facilitate their learning.

Norwich (1994) found that learning intentions predict learning behaviors, which were described as behaviors that promote progress in learning and attainment levels. Therefore, these learning behaviors have an impact on learning outcomes, which originate from intentions to learn. Lave and Wenger (1991) explain that learning involves participation, and that the mastery of knowledge and skill requires full participation. According to the authors, a person's intentions to learn are engaged through participation, and learning is affected in a positive manner. Lowy

and Hood (2004) assert that unlike children, adults are not empty vessels seeking to be filled, or clay in need of shaping, but that they have knowledge, values, relationships and intentions that influence how they behave and learn new things. Hence, intentions play an essential role in the learning process for adults.

Proposition 1 *For participants in adult education, the greater their learning intentions are, the greater their learning will be.*

Self-Efficacy and Learning Intentions

It is imperative that students feel they are capable of learning because when self-efficacy is too low, students will not be motivated to learn (Schunk & Zimmerman, 1994). The authors explain that an adequate level of self-efficacy is needed to sustain motivation and self-regulation. In a learning context, self-regulation encompasses students' self-generated actions which are systematically oriented toward attainment of learning goals (Schunk & Zimmerman, 1994). It is only logical that if students' decisions to engage in actions that would facilitate favorable learning outcomes originate from within, and are not the product of an external cause, they have the desire and intent to learn. And since high self-efficacy is associated with self-regulation, the former should also be associated with learning intentions.

The study by Norwich (1994) revealed that self-efficacy was the best predictor of learning intentions, accounting for 54% of the variance. It should be noted that the sample investigated did not include adults but secondary school students. However, there is no reason to believe that self-efficacy would not also predict learning intentions among adults, considering all the additional obstacles they face as learners. Taking these obstacles, which are potential de-motivators, into account, belief or confidence in their capacity to learn should positively influence their intentions to learn.

Proposition 2 *For participants in adult education, the greater their self-efficacy is, the greater their learning intentions will be.*

The Role of Age in Learning Intentions and Learning

Research has provided support for a negative relationship between age and learning. In a study by Gist, Rosen, and Schwoerer (1988), it was found that older trainees exhibited significantly lower performance than did younger trainees in terms of acquisition of skills. Martocchio (1994) also found a negative correlation between age and declarative knowledge, which was assessed based on principles taught during training. In this analysis, age accounted for nearly two-thirds of the total variance, with younger trainees performing significantly better on the test of declarative knowledge than older trainees.

Age predicts involvement in development activity, with age being significantly negatively associated with voluntary activity (Birdi, Allan, & Warr, 1997). This suggests that younger individuals have a greater tendency to have the desire to learn since the purpose of development activity is to acquire additional knowledge and skills. The authors also found that

learning motivation, which was inter-correlated with learning confidence, had a significant effect on participation in development activity. Furthermore, in Colquitt et al.'s (2000) meta-analysis, age explained incremental variance in motivation to learn, declarative knowledge, skill acquisition, and self-efficacy. In light of the findings, this researcher proposes that younger individuals would be more confident in their learning capability, as well as more motivated to learn. In addition, their age and increased self-efficacy would play an integral role in their intention to learn, which is reflected in their decision to be involved in development activity.

Proposition 3 *For participants in adult education, age will moderate the relationship between self-efficacy and learning intentions, so that the relationship is stronger when participants are younger than when they are older.*

Proposition 4 *Age is negatively related to learning.*

The Role of Ability in Learning Intentions and Learning

Ability may be viewed as a relatively stable determinant of performance (Gist & Mitchell, 1992), and research supports the importance of ability as a major factor that influences learning. Kanfer and Ackerman (1989) found that individual differences in cognitive abilities exerted an effect on skill acquisition, which is a signal that learning has taken place. A study conducted by Ree and Earles (1991) revealed that general mental ability was the best predictor of learning, and that measures of specific abilities were not needed to predict training success. The authors investigated the incremental validity of specific abilities beyond that of general ability, and although the models tested showed statistical significance, the practical contribution of specific ability measures was trivial, only adding an average of 0.01186 to predictive efficiency (Ree & Earles, 1991). Therefore, general mental ability was shown to play an extremely substantial and meaningful role in an individual's learning.

Ability should also influence an individual's learning intentions. If one considers the concept of self-directed learning, the influence of ability on learning intentions is especially evident. Self-directed learning is an approach whereby learners are motivated to assume personal responsibility and collaborative control of the cognitive and contextual processes in constructing and confirming meaningful and worthwhile learning outcomes (Garrison, 1997). Therefore, these individuals make a choice to be fully engaged in the learning experience, and it is a valid assumption that they do so because they intend to learn. According to Knowles (1975), self-directed learning is a basic human competence because individuals must have the ability to learn on their own. They must be able to size up situations, see patterns, develop categories, figure out cause and effect relationships, and apply knowledge and thought processes to the analysis and solution of problems. Cognitive perspicacity is needed for these processes when one has an instructor to facilitate the learning process. One can perceive that it is even more essential if learning is taking place through one's own direction.

In terms of the link between ability and self-efficacy, research already discusses the mediating role of self-efficacy on the ability- learning relationship (Gist & Mitchell, 1992). The author of this manuscript perceives ability as a potential moderator, interacting with self-efficacy

to influence learning intentions, and as a result, learning. Kanfer and Ackerman (1989) state that individual differences in intellectual ability may exert an important influence on the efficiency with which persons who perceive themselves as capable of goal attainment engage in self-regulatory activities. Engagement in self-regulatory activities suggests that the individual has intentions to learn, and thus, he/she is willing to make adjustments in order to facilitate his/her learning. Therefore, this researcher proposes an ability-efficacy interaction that boosts learning intentions, and as a result, learning.

Proposition 5 *For participants in adult education, ability will moderate the relationship between self-efficacy and learning intentions, so that the relationship is stronger when participants have more ability than when they have less ability.*

Proposition 6 *Ability is positively related to learning intentions.*

Proposition 7 *Ability is positively related to learning.*

Figure 1 depicts the proposed relationships among the constructs being explored. It is a conceptual model that illustrates the influence of age, ability, and self-efficacy on learning intentions and learning among participants in adult education.

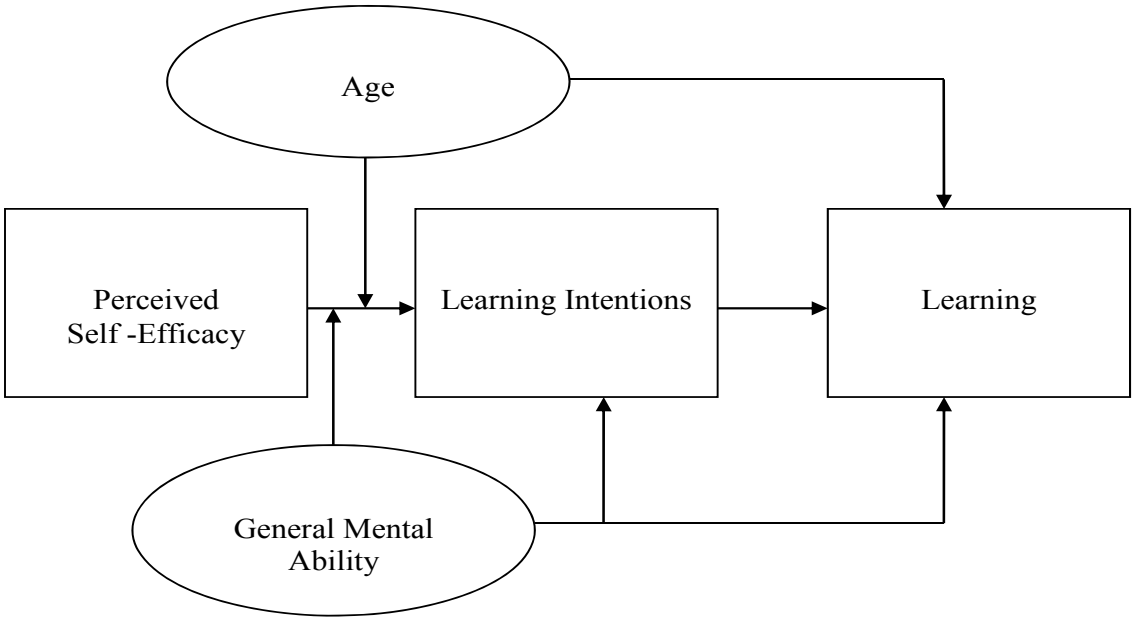

Figure 1: Conceptual Model

DISCUSSION AND CONCLUSION

Adult learning is a key area that is becoming more and more deserving of research attention as the adult population continues to either actively pursue opportunities, or reflexively agree to participate in activities that allow them to increase their knowledge and skills. It is important to determine the fundamental factors that influence learning in this population so that appropriate strides can be taken by educational and organizational leaders to facilitate the learning process and to maximize learning among adults. Consequently, they will be able maximize their personal growth and development, and they will also be better equipped to contribute even more to their families, their places of work, their communities, and to society as a whole.

Marsick (1988) pointed out that learning for organizational productivity cannot be separated from learning for personal growth, and Tough (1978) disclosed that apart from personal development, other areas of life in which individuals used their learning include home and family, hobbies and recreation, general education, job, religion, voluntary activity, public affairs, agriculture, and technology. Therefore, learning is a constructive endeavor that can make a positive difference in a plethora of different arenas, and should be encouraged and supported among adults.

Theory, as well as empirical evidence, suggests that age, ability, self-efficacy, and learning intentions play a central role in successful learning among adults. It is imperative that educators as well as educational and organizational leaders take these factors into consideration and address any pertinent problems that may arise. Adults need to be sufficiently motivated so that their desire and intent to learn would be at the necessary level that drives them to invest time and exert effort, so that learning would result. In addition, their self-efficacy must be maintained, especially as age increases, and general ability decreases, so that they are confident that they can achieve the learning outcomes to which they aspire.

Qualitative research involving a group of non-traditional university students revealed that as the students gained confidence, they developed a more secure learning identity, and actively began to incorporate some of the more participatory learning styles by forming study groups and engaging in dialogue with peers (Christie, Tett, Cree, Hounsell, & McCune, 2008). The authors also found that a boost in confidence propelled students to persist, and enabled them to become active learners. For example, students engaged more fully with learning practices, such as asking questions when confused, instead of remaining silent in tutorials. These findings suggest that confidence inspires commitment to learning goals, and increases the tendency that adults would do all in their power to succeed in their learning endeavors.

IMPLICATIONS AND DIRECTIONS FOR FUTURE INQUIRY

Examination of some of the constructs that influence adult learning has revealed several implications for the success of the learning process during adulthood. Educators, educational leaders, and organizational leaders may take heed as they structure courses and programs, better

tailoring them to fit the needs of their adult students and trainees. Motivational strategies must be integrated into the learning process in order to achieve the best learning results. Instructional design must also receive some attention as it must be suitable for the age group of learners as well as their ability level, so that they can get the most from their learning experience. For example, adult learners benefit from greater flexibility and control over their rate of learning. Providing them with an opportunity to have such control, at an appropriate level, may positively impact their self-efficacy, intention to learn, and actual learning.

Environmental factors should also be taken into consideration as they can affect the comfort and efficacy beliefs of learners as they decide how much to participate in various activities. Additionally, ability conception inducement and confidence-building techniques should be explored as researchers and practitioners discover how to effectively deal with and teach older people, and people with lower abilities. Pre-training or pre-instructional practices to aid in preparation for learning should also be investigated as they may provide necessary information and/or "set the proper tone" for effective teaching and successful learning.

It would be beneficial for further research to be geared towards uncovering additional motivational factors, especially external motivators, since advantages of an intrinsic nature such as a high GMA, relatively young age, and high self-efficacy may not be sufficient to increase learning intentions among adults. For example, a person can have a high ability, but intend to put forth no effort (Gist & Mitchell, 1992). Such an individual may have an external locus of control, and as such, may not be internally driven, but depend on external incentives to motivate him/her during the learning process.

Additional research should also be conducted to determine the kinds of learning scenarios in which age plays the most significant roles. For example, Schumann (2006) explains that due to biological, social, and psychological maturation phenomena, adults find it more difficult to learn a second language because flexibility necessary for its mastery is lost. Martocchio (1994) found that age was inversely related to efficacy beliefs. This suggests that as individuals grow older, their perceived competence diminishes. Thus, their learning intentions and learning may be adversely affected. However, in Martocchio's (1994) study, age predicted computer efficacy beliefs. It is quite possible that the older trainees possessed less efficacy because they were intimidated by the use of computers, because they were not accustomed to the technology. If all the individuals participating in the training were familiar with computers and their usage, age may not have been an important factor. In Colquitt et al.'s (2000) meta-analysis, age was linked to both motivation to learn and learning, as older trainees demonstrated lower motivation, learning, and self-efficacy. The authors cautioned that trainers need to ensure that trainees can succeed, especially when content or methods use new technologies with which older individuals may be less comfortable.

Inquiry into potential moderators and mediators of the relationship between age and learning would also be useful. Considering the existing literature, anxiety and self-efficacy would be two constructs worth investigating. Subsequently, research should be geared towards discovering means to reduce anxiety and increase self-efficacy among adults, especially older adults, who are participating in learning activities, so that their actual learning can be maximized.

In view of empirical findings that show that ability influences learning, research should direct some attention toward the discovery of strategies that can be used by individuals with

lower abilities to assist them in the learning process. These individuals should not be left behind because their cognitive resources or information processing capacities are lower, and thus, impede their learning. Kanfer and Ackerman (1989) suggest that motivational interventions early in training may reduce the validity of ability predictors of performance. It is possible that if individuals view selected motivators as valuable to them, they would exert more effort during the learning process and thus, increase their learning. Kanfer and Ackerman (1989) also assert that perceived confidence in capability for goal attainment is closely related to the initiation of self-regulatory activity to facilitate learning. Therefore, instructors/trainers should attempt to find ways to instill confidence in their trainees/students both before and during learning activities. A boost in their perceived self-efficacy should motivate them to make necessary adjustments in order to help themselves to learn.

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INSTRUCTIONAL METHODS INFLUENCE CRITICAL THINKING: DO STUDENTS AND INSTRUCTORS AGREE?

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ABSTRACT

Critical thinking skills are considered one of the key soft skills to be honed through an undergraduate education. This paper investigates whether selected teaching strategies and instructional methods have impact on student perceptions of critical thinking instruction. Survey results indicate that students and instructors in an undergraduate business program have limited agreement in their respective perceptions of critical thinking instruction as well as limited agreement regarding the impact of selected instructional methods.

SCOPE AND PURPOSE

The issue of relating teaching strategies and instructional methods to critical thinking student outcomes is a frequent topic among administrators and faculty (Bruan, 2004). There is a significant body of literature regarding critical thinking as well as case studies of the application of various instructional methods and teaching strategies (Cohen, 1981; Gellin, 2003; Snyder & Snyder, 2008). However, there appears to be a void in the literature regarding the alignment of perceptions between instructors and students as to what methods influence or enhance critical thinking.

For clarification, we are using the definition of critical thinking from Scriven and Paul (1987):

> Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness.

This study reports findings of a survey of students and instructors in the business school of a small Southern college that addresses the basic question “do students and instructors agree

which instructional methods or teaching strategies influence student perceptions of critical thinking instruction? Three propositions are examined to determine the extent of any relationship between instructor perceptions of their selected teaching strategies and student perceptions of critical thinking instruction.

Proposition 1: *Student perceptions of critical thinking instruction differ significantly between courses. As they progress to higher level courses, students will increasingly respond to critical thinking instructional methods reflecting synthesis, analysis and application of course content.*

Proposition 2: *Student perceptions of critical thinking instruction are highly correlated with the instructor's perception of critical thinking instruction in the course pedagogy.*

Proposition 3: *An instructor's emphasis on a selected instructional method or teaching strategy is highly correlated with student perceptions of critical thinking instruction.*

METHODOLOGY

A standard instrument for measuring student perception of critical thinking instruction developed by the Foundation for Critical Thinking (Paul & Elder, 2007) was administered to both instructors and students. This instrument contained twenty items addressing the purposes and cognitive skills associated with critical thinking. The phrasing of each item was slightly altered for a corresponding survey of instructors as "my instructor" became "I". Data was collected in a census survey of core courses in the business program. A total of 60 core course sections were surveyed with 689 responses from an enrolled total of 797 students (86.4% response rate).

In addition, instructors were surveyed regarding the instructional methods and teaching strategies incorporated in their respective courses. This instrument contained a selected list of twenty common direct and indirect teaching methods. Faculty members were asked to indicate which methods they employed in a class, the relative importance of the method or strategy to the course and an approximate percentage of classroom time allotted to the method.

Student Perceptions of Instruction

Proposition 1: *Student perceptions of critical thinking instruction differ significantly between courses. As students progress to higher level courses, students will increasingly respond to critical thinking instructional methods reflecting synthesis, analysis and application of course content.*

When examining course level mean scores for student perceptions of critical thinking instruction, we were able to reject the null and find there are statistically significant differences between mean scores at different course levels (N= 60, F = 2.786, p <.10). When examined on a

course level basis between sophomore and junior level courses, the difference was statistically significant. However, the difference in scores between junior and senior level courses was not statistically significant. Therefore, students in courses for sophomores view critical thinking instruction differently than students in junior and senior level courses.

Students and Instructors View of Instruction

Proposition 2: Student perceptions of critical thinking instruction are highly correlated with the instructor's perception of critical thinking instruction. Agreement between students and instructors regarding critical thinking instruction fosters a positive learning environment and reflects critical thinking within the course.

At a course level, we examined the mean scores from students with instructor scores. Using a paired samples *t*-test, we found support for the alternate proposition that differences between course level mean scores between students and faculty were statistically significant ($p < .01$).

Correspondingly, there is a weak correlation between course level mean scores for perceived critical thinking instruction between students and faculty ($N = 58$, $\rho = .235$, $p < .05$). Therefore, on a course level basis student perceptions of critical thinking instruction are quite different from the perceptions of the instructors.

When examining course level scores between students and faculty on an item-by-item basis, there is a different picture of agreement. Of the twenty items in the survey, students and faculty agreed on the extent that instructors teach so as;

- To make clear the reason why students are doing what they are doing (the purpose of the assignment, activity, chapter, test, etc…).
- To help students learn how to identify the most basic assumptions in the subject.
- To enable students to think more clearly.

Matching Instructional Methods and Student Perceptions

Instructors were asked to rate the relative importance of the instructional methods incorporated in their course. Methods varied according to instructor interpretation of the course discipline and content as well as the course level. In discussions external to the survey, instructors also expressed their desire to match instructional methods with the learning styles of their students. Achieving these objectives in course design and the associated instructional methods and teaching strategies suggest our next proposition.

Proposition 3: An instructor's emphasis on a selected instructional method or teaching strategy is highly correlated with student perceptions of critical thinking instruction.

A Pearson's product moment correlation was computed for each of the instances and instructor rated emphasis where an instructional method was incorporated in a course and the corresponding student perception of critical thinking instruction. The following discussion highlights instances where the resulting correlation was significant ($p < .05$ or .01).

INSTRUCTIONAL PEDAGOGY

Lecture And Discussion

The instructional method "Lecture / Discussion" reflecting a form of the Socratic method was the most frequently selected method (92%). This teaching strategy demonstrated a moderately strong correlation to student perceptions of critical thinking instruction across all course levels ($N = 55$, $\rho = .432$, $p < .01$). The relationship is highest in senior level courses ($N = 9$, $\rho = .487$, $p < .10$).

Videos

Use of videos as part of the course pedagogy produces some counterintuitive results. Overall, it appears that use of videos at the sophomore course level has a negative relationship to student perceptions of critical thinking instruction. From sophomore to senior level, the analysis shows a progression from negative to positive correlation between the use of videos and the student perceptions of critical thinking instruction. When applied in senior level courses, the correlation with student perceptions of critical thinking instruction is high ($N = 7$, $\rho = .702$, $p < .05$). One reason may be the nature and positioning of the choices for videos, their expected contribution to critical thinking as well as their relevance to the course content and expected course outcomes. A counter argument may be that as students mature in the college experience, they improve their skills in processing and applying information from a variety of sources.

Discussion and Brainstorming

When employed in a course, instructor lead discussion exhibits a moderately strong correlation with student perceptions of critical thinking instruction ($N = 46$, $\rho = .523$, $p < .01$). This relationship appears to be consistent across all course levels. A related activity, brainstorming, exhibits similar pattern. Including brainstorming as a teaching strategy has a moderately strong correlation with student perceptions of critical thinking instruction ($N = 38$, $\rho = .474$, $p < .01$).

Individual Projects and Presentations

Individual project assignments actively engage students in problem solving activities and promote development of critical thinking skills. When employed in a course, the individual project exhibits a moderately strong correlation with student perceptions of critical thinking instruction ($N = 43$, $\rho = .623$, $p < .01$). Interestingly, the strongest correlation was in the sophomore level courses ($N = 21$, $\rho = .759$, $p < .01$). However, a team project at the sophomore level has a negative correlation ($N = 8$, $\rho = -.625$, $p < .05$).

CONCLUSIONS AND RECOMMENDATIONS

We found support for Proposition 1 that student perceptions of critical thinking instruction differ significantly between courses. As they progress to higher level courses, students perceptions of critical thinking instruction increase. This suggests that students will increasingly respond to critical thinking instructional methods reflecting synthesis, analysis and application of course content.

We did not find support for Proposition 2 that student perceptions of critical thinking instruction are highly correlated with the instructor's perception of critical thinking instruction in the course pedagogy. There was statistically significant agreement on only four of twenty items included in the survey of perceptions between instructors and students. In this study, we found support for an alternate proposition that there is a significant difference in the instructors' perceptions and the students' perceptions. This disconnect is most prevalent among the sophomore level courses.

We found limited support for Proposition 3 that an instructor's emphasis on a selected instructional method or teaching strategy is highly correlated with student perceptions of critical thinking instruction. Out of twenty direct and indirect instructional methods included in the survey, only four methods exhibited correlations with student perceptions that were statistically significant. These were lecture with discussion, brainstorming, discussion, and individual projects, all of which entail student's active engagement.

In light of these results, we believe instructors should re-examine their assumptions about critical thinking instructional methods. In particular, they should consider different strategies that may foster closer alignment with student perceptions. The results of this study suggest several points for faculty.

- Simple measures such as identifying the relationship of an assignment or activity to critical thinking may foster a closer alignment. Clarity in instruction and sharing the instructors thinking about the assignment is a form of role modeling critical thinking. There is anecdotal evidence from

instructors that these behaviors have as much to do with the students perceptions as the assignment itself.

- The degree of disconnect between instructor perceptions and student perceptions of critical thinking instruction should be a warning sign that instructors are not engaging their students in active learning. Education literature regarding learning styles as well as student engagement literature may provide further understanding of this relationship and provide a basis for formulating more effective teaching strategies. Administrators responsible for faculty development programs should
- As there is evidence that student perceptions of critical thinking instruction change as students transition from sophomore level to senior level courses, further investigation is needed to uncover the underlying factors that contribute to this pattern. Is there a relationship with student learning styles or does this reflect a difference in teaching strategies based on the instructors' perceptions of "what's best" for a particular course level. In other words, are instructor's expectations may actually be hampering active learning.

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TRANSFORMATIONAL LEADERSHIP STYLE IN THE EDUCATIONAL SECTOR: AN EMPIRICAL STUDY OF CORPORATE MANAGERS AND EDUCATIONAL LEADERS

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ABSTRACT

The purpose of this article is to explore educational school leaders, and the need for transformational leadership style within the educational sector. With society's focus on the present day school reform movement, there is significant emphasis on teacher and leadership performance. With the addition of charter school choice and new local laws, fueled by the federal government's race to the top incentive model, educational leaders are now faced with leadership mandates that will demand enhanced performance of their schools. In addition, recent focus on teacher and school leader evaluations have fueled the public's demand to transform educational school leadership from a status quo paradigm to a leadership framework similar to corporate leaders who must sustain performance while competing in a market driven industries. This discussion also assesses industry leaders and CEOs who practice transformational leadership and lead their respective companies to meet market and share holder demands. A discussion of transformational leadership style to support the strategic changes within the educational sector is presented with a sample of principals who employ the transformational leadership style.

INTRODUCTION

In an era of accountability, our school systems are facing severe challenges to meet bottom line results while external pressures from federal, state and local mandates are compelling educational leaders to drive enhanced student achievement. With the addition of charter school choice and new local laws, fueled by the federal government's race to the top incentive model, educational leaders are now faced with leadership evaluations that will assess the accountability of overall performance of educational leaders. For example, New York State is currently assessing teacher-principal performance evaluations to qualify for federal grants to improve the quality of leadership and student performance in the classroom (Chen & Phillips, 2012).

In this ever- changing era of accountability and performance, we find school leaders are now faced with the same managerial tasks that are practiced by managers and leaders of businesses in private industry. Some of these tasks include managing personnel, controlling budgets, setting strategic goals and collaborating with external forces that include parents, unions, community outreach groups, and also political constituents.

The issue of managing for results takes upon a larger role in today's educational environment as educational leaders focus on the very managing skills that are practiced in private industry. To support the accountability – performance agenda, leadership proficiency has taken on a pivotal focus that can effect bottom line results. As society places more accountability on the educational sector, educational managers and leaders are being asked to perform as manages in private industry.

Managerial tasks have relied upon a leadership framework to help achieve the overall tasks and duties of managing. To support the managerial paradigm and the leadership framework, most theorists have studied the transformational leadership style for environments that are subjected to significant change for bottom line results.

Education in today's business context is an industry that comprises of elementary, secondary and post secondary institutions. Revenues for public elementary and secondary schools amount to $525 Billion for the school year 2011-2012 (National Center for Educational Statistics). In addition, the post secondary education segment represented 19.7 million students for both public and private institutions, with a per student average annual tuition cost of $32,184 for private and $4,751 for public institutions (Department of Education, 2012). By industry comparison, according to the US Census Bureau, revenues (including service, insurance, and other items) for new car dealers in the US totaled an estimated $553 billion in 2010.

According to the Government's BLS statistical data, the education industry can be considered the country's second largest industry, accounting for about 13.5 million jobs in 2008 with a total estimated worth of $630 to $680 billion (Light, 1998). So why do we consider the leadership in this industry as a representation of teachers who only focus students' assessment, who do not practicing the skills of a typical business management leader ?

CEOs of corporations play key roles to interact with their followers for organizational transformation and innovation. This emphasis has been evident over the last twenty years where more adaptive leadership styles can respond to the rapid changes in which corporate CEOs are confronted (Bass et al., 2003). In a study of 50 corporate CEOs, performed by Jung et al., (2008) they have concluded that a positive relationship exists between a CEO 's transformational leadership style and organizational innovation. Whereas, within the educational sector there is still limited research which indicate a consistent positive relationship between leadership styles and performance outcomes, particularly conceptualizing the transformational leadership style as the construct (Leithwood et al. (2004).

In general, principal leadership may be examined in terms of various leadership activities, such as managerial, instructional, financial and an overall responsibility in the general

oversight of all stakeholders associated with the institution. Dwyer (1986), contends that successful principals connect their daily on-the- job duties with their goals for student achievement along with the needs and resources of the school. Effective principals are better attuned to the behaviors that influence teachers, and thus effect student achievement. After reviewing many studies, Leithwood (1992) concluded that effective principals focus on monitoring student progress, evaluating and supervising teachers, and establishing and communicating clear expectations for higher student and teacher achievement. In 1998, Sergiovanni described the principal's role as managing technical activities, providing interpersonal support and encouragement of staff, modeling of important goals and behaviors, signaling to others what is important, and developing an appropriate and unique school culture.

Leadership in schools is no different from those regarding leadership in other institutions (Marzano et al., 2005). Leadership is vital to the successful functioning of the many aspects of the school. The following are just some duties of a school principal's leadership responsibilities with respect to the functionality of the school:

- Identifying a school's clear mission and goals
- Maintaining relationships with teachers and staff
- Managing classroom practices of teachers
- Coordinating the curriculum and instruction
- Ensuring the students' opportunity to learn and perform in accordance with standards

Marzano (2003) states that leadership is the most important aspect of any school reform; "leadership could be considered the single most important aspect of effective school reform" (p.172). To illustrate the importance of a principal's leadership within the school setting, a 1977 U.S. Senate Committee Report on Equal Educational Opportunity (U.S. Congress, 1970) defined the principal as the most influential person in a school "in many ways the school principal is the most important and influential individual in any school. He or she is the person responsible for all activities that occur in and around the school building. It is the principal's leadership that sets the tone of the school, the climate for teaching, the level of professionalism, and morale of teachers, and the degree of concern for what students may or may not become" (U.S. Congress, p.56.).

Research that has been performed on principal's leadership has been dubious in characteristic definition in terms of defining it as a significant factor in contribution to school achievement (Donmoyer, 1985). Other assertions suggest that research does not support the notion that school leadership has an identifiable effect on student achievement, (Marzano, 2005). Through extensive studies, researchers Hallinger & Heck have supported their notion that "schools that make a difference in students' learning are led by principals who make a significant

and measurable contribution to the effectiveness of staff and the learning of pupils in their charge" (Hallinger & Heck, 1998, p.158). Their meta-analysis study consisted of 40 empirical studies that were conducted between 1980 and 1995. They stated; "the general pattern of results drawn from this review supports the belief that principals exercise a measurable , though indirect effect on school effectiveness and student achievement. While this indirect effect is relatively small, it is statistically significant, and we assert , meaningful" (Hallinger and Heck, 1998, p.186).

With continuing pressure from state and local reforms and the *No Child Left Behind Act (2002),* a greater emphasis on accountability has been instilled in the leadership framework of this industry. According to Hess (2007) today's school leadership is the critical key to school improvement. We are in an era of accountability where school leaders are asked to deliver bottom line results in scholastic achievement and overall effectiveness of the school. Hess states: "school principals, are the front-line managers , the small business executives, the team leaders charged with leading their faculty to new levels of effectiveness. In this new era of educational accountability, where school leaders are expected to demonstrate bottom-line results, the skill and knowledge of principals matter more than ever "(2007, p.7). According to Public Agenda, a research firm that works with community engagement, they reported that 6 in 10 public school parents surveyed have endorsed the idea of replacing tenure for principals with employment contracts that depend on schools reaching specific goals (Johnson, 2003). A more recent report by Public Agenda cites several basic ideas for education leaders. Several of these ideas; laying the groundwork, having a vision, involving the community in shaping the vision, providing information and communication, are all fundamental tasks that would be practiced by any typical business manager operating in any other industry (Rizzolo, 2011).

EXISTING RESEARCH

Whether education leaders are adequately prepared for the challenges of managing for bottom line that depend on leadership skills, one needs to ask the following questions: Are principals and educational leaders taught the fundamentals of management , and are they practicing good leadership skills ? Recent research has examined the attributes that are necessary for leadership to meet the educational reform challenges and the ever mounting threat of competition by the increasing popularity of private charter schools. The seven areas of the management constructs studied by Hess (2007) are; managing for results, managing personnel, technical knowledge, external leadership, norms and values of the organization, managing instruction, school culture and leadership.

As such, the skills of the school's leader will be assessed based on these achievements, with challenges from external forces such as budgetary pressures, charter school competition and community and parental expectations. Within this changing context, principals are challenged to

question their leadership style and effectiveness based on their traditional approaches to instructional leadership (Elmore, 2000).

Further discussion regarding management skills supports the notion that leaders must maintain human relationships and communications. Specific tasks such as hiring, evaluation of individual performance are critical to the tools that are required for a principal's performance. Survey data from Public Agenda suggests that 78% of superintendents and 57% of principals believe that principals are evaluated predominantly on their ability to judge and improve teacher quality (Farkas et al., 2003).

Although the practice of management principles have been utilized within the educational sector, commercial actions, such as market competition and satisfying community stakeholders, can be substantial only if the consumer market can drive performance of these institutions (McIllhatton et al., 1993). The opposing theory offered by Sharpe (1989) is that educational organizations have unique environments, where managers are driven by legislative mandates. They operate within an external environment that is constrained by political forces. The recent focus placed on student achievement, which has been indicative for leadership appraisal, and the lack of competitive forces and political constraints, has caused McIllhatton., et al (1993) to state: " such distinguishing attributes and requirements call into question the transferability of business management concepts to education". In addition, stakeholders such as parents, school boards, teachers unions community and advocacy groups politicians and government bureaucrats who initiate standards all influence strategy and the principal's ability to lead effectively. As such, school leaders have to spend significant time to focus on satisfying these external constituents, and thus less time on student achievement. According to Childress et al.; (2006) it is difficult to run and manage schools similar to private businesses since there are significant differences. Both school and private business are each accountable to various stakeholders, but prioritizing the strategies to achieve an accomplishment are more difficult in the school sector, due to the public domain. In addition, these public external forces are contrary to free market forces that identify for example, what products and customers usual businesses plan on. Childress et al.; (2006) also states that even with the presence of market competition, such as charter schools, their management practices are lacking the current management practices and are also in need of strategic policies that enhance student performance. Conclusively, educational leaders need to understand the competitive landscape that will drive school, student and leadership performance, in spite of the external forces that are in place which impede the prospects for performance enhancement. A framework for strategic change can be supported through leadership capability that helps drive new strategic direction. Leadership can be considered the driving force of any organization that needs to experience a change strategy. Mintzberg, along with numerous management theorists in defining what managers really do, has identified leadership as one of the critical interpersonal roles of a manager (as cited in Robbins & Judge, 2011).

In support of transforming change in the school's organization, Michael Fullan's research has studied the concept of turnaround leadership which focuses on accountability within the

school, thus effecting the critical outcome of student achievement. Fullan states; "schools are sent a clear message that status quo is not acceptable. Schools are challenged to adopt new strategies as a basis for continued support" (Fullan, 2005, p180). Fullan identifies a model for change which include: love your employees, connect peers with purpose, building capacity, and support learning, transparency and systems (Fullan, 2008). Fullan's ideology suggests change processes in leadership, which models after the leadership style of transformational leadership.

In this era of principalship, a trend for reforming and restructuring schools began to rely on the importance of the principal and their ability to enhance the necessary skills for change and transformation. According to researchers Hallinger and Murphy, "principals are expected to display independent initiative and power over their environments to achieve both organizational and effectiveness" (Hallinger and Murphy , 1992, p.78).The *effective schools movement* identified an era where principals were questioned regarding their leadership and their general leadership capacity to effect a school's effectiveness. Progressing into the decade of the 1980's, scholars of educational leadership termed the definition of "instructional leadership" as a defining paradigm that will transform our schools into the 21st century. However, the Instructional leadership model represented a unitary style of management leadership, with minimal focus on specific leadership behavioral characteristics (Hallinger, 2005).

Transformational Leadership

According to Hallinger, transformational leadership is an extremely popular image of ideal practice in schools at the present time (Hallinger, 2003). Jean Brown (1991) defined transformational leadership as leadership for change. Transformational leadership, which attempts to influence the conditions that directly impact the quality of curriculum and instruction delivered to students in the classroom, targets variables in the change process, using such strategies as encouraging continuous learning among staff, sharing learning throughout the organization and working with the community toward achieving broader organizational goals (Hallinger, 2003). In contrast, instructional leadership, targets primarily first-order variables through such strategies as "setting school-wide goals, direct supervision of teaching, and coordination of the curriculum" (Hallinger, 2003, p. 338). According to Avolio and Bass (1999): Transformational leaders seek new ways of working, seek opportunities in the face of risk, prefer effective answers to efficient answers, and are less likely to support the status quo. Transformational leaders do not merely react to environmental circumstances, they attempt to shape and create them. (Avolio & Bass, 1988).

Early researchers of the transformational framework included John Burns and Bernard Bass. Building on the work of Burns (1978), Bass(1985) and Bass & Avolio (1994). Leithwood (1992) was inspirational in developing the transformational model of school leadership. His assertion is that "the four *i's* of transformational leadership (*individual consideration, intellectual stimulation, inspirational motivation and idealized influenced*), identified by Bass & Avolio

(1994), are necessary skills for school principals if they are to meet the challenges of the 21st century" (as cited in Marzano et al., 2005, p. 14). According to Burns, his original ideology on transformational leadership was stated as; "the transforming leader recognizes and exploits an existing need or demand of a potential follower; but beyond that the transforming leader looks for potential motives in followers, seeks to satisfy higher needs and engages the full person of the follower (Burns,1978, p,4). Bass added, "transforming leaders convert followers to disciples; they develop followers into leaders. They elevate the concerns of followers on Maslow's need hierarchy from needs for safety and security to needs for achievement and self actualization, increase their awareness and consciousness of what is really important, and move them to go beyond their own self-interest for the good of the larger entities to which they belong. The transforming leader provides followers with a cause around which they can rally." (Bass1995, p. 467). Bass also claimed that transformational leadership does not substitute for transactional leadership. Bass' studies assessed a leadership style that provides transactional and transformational as a single continuum as opposed to separate domains. (Northouse,2010). The best leaders are both transformational and transactional; transformational behaviors augment the effects of transactional behaviors. Unlike many earlier theories of leadership which focused on character traits and rational situational processes, transformational leadership theory emphasizes emotions and values, attributes that are relative to behavior, that conceptualizes the role of the leader as helping making events meaningful for followers (Yukl, 1989). According to Hallinger, transformational leadership is an extremely popular image of ideal practice in schools at the present time (Hallinger, 2003).

The research of Bass and Leithwood shifted focus of instructional leadership to a greater emphasis on organization and followership. Their transformational leadership studies initiated a framework which included the leader's ability to increase the organization's capacity to innovate by elevating the follower's interest and motivation to a higher level (Hallinger & Heck, 1998, Bass,1990). In addition, Leithwood (1992) found that principal effects are achieved through fostering group goals, modeling desired behavior for others, providing intellectual stimulation, and individualized support. In this context, principals were better at supporting staff, providing recognition, awareness of school problems, seeking new ideas and focusing on follower's personal development. In addition Leithwood's ideology is that "transformational leadership may well be a productive antidote to the stifling effects of excessive organizational constraint" (Leithwood, 2005, p.185).

Transformational leadership assesses the leader's values, and how the leader interacts with the organizational members in a way that conveys his or her values to each of the members which engages and transforms them to accept these values as their own. The leader conveys these values to the organizational members through the use of several behaviors designed to attract the members to the leader's goal. These behavior attributes include charisma, motivation, intellectual stimulation, and individual consideration. Transformational leadership is associated with motivating associates to do more than they originally thought possible. The original

expectation for performance is linked to an initial level of confidence or efficacy in the associates' perceived ability and motivation. Thus, associates' perceptions of self efficacy or confidence, as well as their developmental potential, are enhanced through the transformational leadership process.(Avolio, Bass, & Jung, 1999). The process of transforming associates does not merely empower them or delegate to them the responsibility for fulfilling a goal; rather, it develops their capability to determine their own course of action, if they lack that ability. Eventually, the followers will be in a position to assume some of the leader's responsibilities. In essence, the associates become leaders, and leaders become exemplary associates. Studies performed by Avolio & Bass (2004) summarize characteristics of a transformational leader as:

- Transformational leaders become a source of inspiration to others through their commitment to those who work with them, their perseverance to a mission, their willingness to take risks, and their strong desire to achieve.
- Transformational leaders diagnose, meet, and elevate the needs of each of their associates through Individualized consideration. They believe in promoting continuous people improvement.
- Transformational leaders stimulate their associates to view the world from new perspectives, angles, and informational sources. They question even the most successful strategies to improve them over time.
- Associates trust their transformational leaders to overcome any obstacle, because of their hard work, their willingness to sacrifice their self-interest, and their prior successes.

Management scholars initiated research as to the meaning of effective leadership and how this ideology transforms to practice of effective principalship. Thus, the role of the principal has been defined as the most important individual and the most influential person in the school (U.S. Congress, 1970). Additional researchers such as Sergiovanni (1995) have supported the principal leadership ideology by stating; “principals must be effective managers in order to have an effect on the organization to the point of principals being thought of as management engineers” (Sergiovanni, 1995, p.85). Student achievement became a critical outcome which was fueled by the passage of the *No Child Left Behind Act (2002)* thus becoming the impetus for school leadership and accountability. Researchers began to take a closer look at the effect of leadership on student achievement. Educational scholars , such as Hallinger & Heck (1998), Weitzers et al., (2003) and Marzano et al., (2005) have performed quantitative analysis on the effects of leadership on student achievement. Various conceptual frameworks have assessed the number of variables that effect student achievement outcomes. It is generally agreed upon that leaders play a major role, albeit indirect in effecting student achievement.

METHODS

This study sought to examine the managerial leadership role of today's educational leader. Data was collected to present the most widely used leadership style between transformational, transactional and passive avoidance styles of leadership. In addition, the data also represented overall descriptives of the sample population.

Sample

A sample of 45 principals from elementary, middle and high schools randomly selected within the New York State area were surveyed. The MLQ instrument was used to assess the principals' leadership style, along with a demographic profile data sheet indicating: *institution type*, *level of preparation, total years of principals' experience total years of teaching experience, age, gender, and ethnicity.*

Procedures

The MLQ was originally developed by Bass (1985) and later refined as a 45 short form MLQ 5X by Avolio and Bass (2004). Responses for all 45 subscales were self measured using a 5-point Likert scale. Respondents were asked to indicate how frequently they exhibited specific behaviors corresponding to the following scale: 0 = *Not at all*,1 = *Once in a while*, 2 = *Sometimes*, 3 = *Fairly often*, 4 = *Frequently or always.* According to Northouse (2010), this is the most widely used measure of transformational leadership. The MLQ instrument analyzes three characteristic domains: Transformational, Transactional and Passive Avoidance. The operational factors that define these leadership characteristics are:

1. Transformational

Characteristic variables:

Idealized Attributes and Idealized Behaviors – these factors describes leaders who act as strong role models for leaders , followers identify with these leaders, and want very much to emulate them. These leaders usually have very high standards of moral and ethical conduct and can be considered to doing the right thing. They are deeply respected by followers, who usually place a great deal of trust in them. They provide followers with a sense of vision and mission.

Inspirational Motivation – describes those who communicate high expectations to followers, inspiring them through motivation to become committed to and a part of the shared vision in the organization. Team spirit is usually enhanced by this type of leadership.

Intellectual Stimulation - recognizes followers through stimulation, creativity and innovation. This type of leader challenges the follower's own beliefs and values as well as the

leader's and the organization. The leader support and collaborates with the followers as they try new approaches and develop innovative ways of dealing with organizational issues. The leader encourages followers to think things out on their own and engage in careful problem solving

Individualized Consideration - this factor is representative of leaders who provide a supportive climate in which they listen carefully to the individual needs of the followers. These leaders act as coaches and advisors while trying to assist the followers in becoming fully self actualized. These leaders engage with the followers' individual personal challenges.

2. Transactional

Characteristic variables:

Contingent Reward – describes an exchange process between leaders and followers in which effort by the followers is exchanged for specific rewards. In this process, the leader tries to obtain agreement from the followers on what must be done and what the payoffs would be for the follower performing the task.

Management by Exception (Active) – this leadership factor is a style that involves corrective criticism , negative feedback, and negative reinforcement. A leader who practices management by exception, actively watches followers for mistakes and errors, and then takes corrective action.

3. Passive Avoidance

Characteristic Variables:

Management by Exception (Passive) – a leader who practices this factor passively intervenes with the follower only when after standards have not been met or problems have arisen.

Laissez – Faire - describes leadership that actually represents no leadership at all. This type of leader takes a hands-off, let things ride approach. The leader abdicates responsibility, delays decisions, provides no feedback, and makes no effort to help followers satisfy their needs. There is no exchange with followers or any attempt to help them grow.

RESULTS

Leadership Style

After scoring the MLQ instrument utilized in the study, the leadership style most widely used by principals at all institutional levels was transformational, representing 31 principals or 68.9% of the sample population. Transactional leadership style comprised of 10, or 22.2%, while a passive avoidance style was represented by only 4 principals, corresponding to 8.9% of the sample population.

Leader Style

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Transformational	31	68.9	68.9	68.9
	Transactional	10	22.2	22.2	91.1
	Passive	4	8.9	8.9	100.0
	Total	45	100.0	100.0	

Additional Descriptives

Age

The ages of the principals were reported as ranging from 32 to 65 years of age with an average age of 52.

Gender

Female principals comprised of 24 (53.3%), while male principals were 21 (46.7%).

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	21	46.7	46.7	46.7
	Female	24	53.3	53.3	100.0
	Total	45	100.0	100.0	

Ethnicity

The ethnic composition included 39 (86.7%) Caucasian, 4 (8.9%) African Americans and 2 (4.4%) reported as other.

Ethnicity-Please indicate your primary ethnic identity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	African American	4	8.9	8.9	8.9
	Caucasian	39	86.7	86.7	95.6
	Other	2	4.4	4.4	100.0
	Total	45	100.0	100.0	

Institution Type and Location

Institution Type-Elem-Middle-HighSchool

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary School	20	44.4	45.5	45.5
	Middle or Junior High School	10	22.2	22.7	68.2
	High School	14	31.1	31.8	100.0
	Total	44	97.8	100.0	
Missing	System	1	2.2		
Total		45	100.0		

Institution Location-Suburban-Urban

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Suburban	34	75.6	77.3	77.3
	Urban	10	22.2	22.7	100.0
	Total	44	97.8	100.0	
Missing	System	1	2.2		
Total		45	100.0		

Years of Experience as a Principal

Years of principals' experience ranged from 2 to 28, with an average of 9.42 years.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Years of experience as a Principal (DO NOT include years as AP)	45	2	28	9.42	6.373
Total years Teaching Experience	45	5	34	13.60	7.515
Age	45	12	45	31.82	8.386
ELA Axchieve	45	-2.24	1.74	-.0875	.89175
Math Achieve	45	-1.71	1.40	-.2706	.87036
Valid N (listwise)	45				

Level of Principals' Education

The principals' level of education was reported as 6 (13.3%) Doctoral Degrees, 22 (48.9%) Masters Degrees,13 (28.9%) reported as Specialist Degree, and the remaining 4 (8.9%) as other.

Principal's Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Master`s Degree	22	48.9	48.9	48.9
	Specialist Degree	13	28.9	28.9	77.8
	Doctoral Degree	6	13.3	13.3	91.1
	Other, please specify	4	8.9	8.9	100.0
	Total	45	100.0	100.0	

Institutional Level

Institution Type-Elem-Middle-HighSchool

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary School	20	44.4	45.5	45.5
	Middle or Junior High School	10	22.2	22.7	68.2
	High School	14	31.1	31.8	100.0
	Total	44	97.8	100.0	
Missing	System	1	2.2		
Total		45	100.0		

DISCUSSION

In this article, the current focus of accountability and performance of educational leaders has been presented as a major topic of concern in our society. Managerial comparisons to business leaders in private industry have also spurred much discussion among managerial and educational leadership theorists. For example, Hess (2007) has focused specifically on comparative managerial attributes of educational leaders. His concern is whether today's principals are taught the fundamentals of management. Most instructional institutions are taught the criteria for school curriculum, and teacher development, but they are not taught with considerable attention; managing with data, hiring, recruiting, assessing personnel performance, and exposing future principals to the vigorous responsibilities of organizational management. In addition, change strategies need to be implemented to meet the demands of strategic plans set forth by bureaucratic officials along with the increase in the public's educational awareness and expectations of student performance. Theorists such as Fullan (2008) have devoted research studies that define the constructs of the change strategy framework.

School performance and student achievement have been the driving force for researchers to take a closer assessment of the managerial practices and leadership practices of educational leaders. The expectations of today's educational leaders are comparative to the similar tasks practiced by business managers in the private sector. With the current focus on student achievement, through assessment testing and also increased demand for accountability within the sector's industry, managerial attributes such as leadership styles have become a significant topic within the educational industry.

Educational leadership researchers, such as Leithwood and Hallinger, have all subscribed to a transformational leadership framework that can ultimately change and elevate individual performance beyond expectations. Michael Fullan (2005) reminds us that the status quo is not acceptable, and only through a change orientation can leaders realize true effective results.

The small study of 45 principals presented in this paper supports the notion that the majority of those surveyed relied upon a transformational leadership style. In this context the principal will collaborate with followers to raise performance beyond what is expected. However, the study did not present comparisons of performance due to leadership attributes in comparison to private and educational sectors. Future research must assess the differences in performance constructs between the educational sector and other segments of private industry.

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SOCIAL SECURITY COVERAGE AND TEACHER PENSION BENEFITS

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ABSTRACT

This article uses data from the Public Fund Survey and the Survey and Analysis of Teacher Salary Trends done by the American Federation of Teachers to examine pension benefits for teachers who work in a position not covered by Social Security relative to teachers whose entire career has been in covered positions.

INTRODUCTION

Social Security is a government entitlement program covering 96 percent of all U.S. workers. It is designed to ensure that retired employees are able to maintain a certain minimum standard of living after they complete their wage earning years. To accomplish this goal, Social Security benefits are calculated based upon the average monthly earnings of the employee over the entirety of their careers. Generally speaking, Social Security allows lower-income retirees to receive a much higher percentage of their working incomes than higher-income retirees. The rationale behind this is that higher income workers are not in need of the safety net that Social Security supplies – in effect, Social Security's primary purpose is to ensure that retired workers have a comfortable, but not extravagant, lifestyle upon retirement.

While most workers contribute to Social Security during their career and receive a monthly benefit from Social Security upon retirement, some jobs do not participate in Social Security. These include federal employment prior to 1984, railroad workers, some public employees in 12 states and municipalities, or employment in foreign countries. Those states where some public employees (often teachers) are uncovered by Social Security are Alaska, California, Colorado, Connecticut, Illinois, Louisiana, Maine, Massachusetts, Missouri, Nevada, Ohio, and Texas. Certain municipalities in these states may participate in Social Security while other municipalities in some other states and Washington D.C. may have also opted out of Social Security.

This lack of Social Security coverage may affect teacher salaries, pension plans, and retention. Even though these teachers do not contribute to Social Security, they may be eligible for benefits based on other jobs or surviving spouse benefits. Margenau (2007) explains two little known, but important, provisions that may affect these people's benefits. The first provision is the Government Pension Offset (GPO). Under the GPO, Social Security benefits are lowered for those individuals receiving Social Security survivor benefits based upon their spouse's coverage.

The second provision is the Windfall Elimination Provision (WEP). If a worker has had both a job that pays into Social Security and a job that does not pay into Social Security, then he/she may be subject to the WEP.

This paper looks at the retirement plans offered to teachers who are covered by Social Security relative to the plans offered to teachers subject to the WEP and the GPO. Total retirement benefits based on salary levels and years of service are then evaluated under both situations.

RETIREMENT PLANS FOR TEACHERS

Hansen (2010) provides an overview and history of teacher retirement plans. Almost all teachers participate in, or have access to, some type of defined benefit (DB) plan. In a defined benefit plan, the employee and/or the employer makes contributions from their salary during their working years into the retirement plan. If an employee stops working or changes jobs before being vested in the plan, they may have the option of withdrawing their contributions. At retirement, employees receive a fixed benefit based on their salary and years of service. Often times, they are given the choice to receive the full benefit until they die or to receive a lower benefit amount that continues to pay a spouse in case of the employees death. Under DB plans, the employee does not have to make investment decisions and their benefit is not affected by the return on the plans investments. The benefit amount is almost always calculated as Average Final Salary * Years of Service * Retirement Factor. The key variable in this formula is the retirement factor and there is wide variation among states.

Costrell and Podgursky (2009) discuss the nonlinearities regarding retirement timing that result from many DB plans. Many plans have rules that say employees are eligible for retirement at a certain age, after a certain number of years of service, or some combination of the above. For instance, a worker may not be able to take retirement until age 60 or 30 years of service. Thus a worker who begins working on their 25^{th} birthday and stops on their 54^{th} birthday is not eligible to receive benefits for another 6 years. However, if they retire at age 55, then they are eligible immediately. Thus, that additional year of employment has a huge benefit. Another common plan follows the Rule of 80 where participants are eligible for benefits when their age and years of service add up to 80. Also, employees may not be allowed to keep working if they take retirement. Thus, each additional year of employment results in one less year of benefits.

Another effect of defined benefit plans discussed in Costrell and Podgursky (2010) is the effect of defined benefit plans on mobile teachers. These types of plans tend to benefit teachers who remain in one system over their entire career and hurt mobile teachers who move between systems or change careers. They find that a mobile teacher may lose almost half of their benefits. This characteristic is true of all defined benefit plans and is one reason why private employers have moved towards defined contribution plans such as 401(k)s.

In a defined contribution (DC) plan, employees and/or employers make contributions into individual worker accounts. The employee then has the option to allocate the funds to different types of investments. If an employee stops working or changes jobs prior to retirement, they can rollover the account (or at least their contributions) into an IRA or a plan at their new employer. The amount available at retirement depends on the size of the contributions and the investment returns. At retirement, the employee can start making withdrawals from this account. However, the retiree may outlive their account if they withdraw too much in which case they have nothing left. In the case of death, the remaining amount in the fund is part of the estate and would go to the employee's heirs.

Defined Contribution plans are more likely to attract mobile employees who do not expect to be at a single employer for their entire career. Many young teachers, or potential teachers, fall into this category and Podgursky (2006) suggests the addition of a defined contribution plan option may improve teacher recruitment. In addition to young teachers, DC plans may also be attractive to people who are considering teaching as a second career.

Social Security is similar to a defined benefit plan, but the formula for calculating benefits is very different. Employees pay 6.2% of their salary into Social Security and the employer also pays 6.2%. When a beneficiary is ready to retire, the Social Security Administration will first calculate their Indexed Monthly Earnings (IME) by indexing their wages for wage growth. The Average IME (AIME) takes their highest 35 years of indexed wages and divides by 420 (35 years *12 months per year) in order to find a monthly average. Note that if the employee works for fewer than 35 years, then their AIME will be less than their IME. If an employee works for more than 35 years, the lowest earning years will not be counted.

Once the AIME is determined, a Primary Insurance Amount (PIA) is calculated based on bend points. For a worker born in 1944 (i.e. a worker who turns 62, and thus becomes eligible for retirement in 2006 and eligible for full retirement in 2010), the bend points are $656 and $3,955. A beneficiary's PIA would be 90% of their AIME up to the $656 bend point plus 32% of their AIME from $656 to $3,955 plus 15% of their AIME above $3,955. Finally, the PIA can be reduced or increased depending on whether or not the beneficiary retired before or after their normal retirement age. The bend points are adjusted each year, but the 90%, 32%, and 15% multipliers are fixed.

EFFECTS OF SOCIAL SECURITY COVERAGE

Since some people are covered by Social Security while others are not, it would be expected that there might be differences in salary and benefit packages. The American Federation of Teachers (2008) reports information on teacher salaries and trends broken down by state. Brainard (2007) provides information about pension plan benefits and contributions for each state. Table 1 compares teacher beginning and average salaries and pension contribution and benefits for covered teachers versus non-covered teachers. While teachers in non-covered

positions have slightly higher salaries, there is no discernable difference in salaries after adjusting for median household income in the state. However, employee pension contributions and benefits are higher in states that are not covered by Social Security. Teachers covered by Social Security have a return factor of 1.9% for each year employed and contribute an average of 5.3% of their salary to their pension plan. Taking a simple ratio of these two numbers gives you a result of 35.85%. Teachers not covered by Social Security have a return factor of 2.3% and contribute an average of 8.2% resulting in a ratio of 28.05%.

Table 1: Differences in States Covered and Not Covered by Social Security		
	SS Average	No SS Average
Beginning Salary	$33,400	$36,440
Average Salary	$47,343	$51,275
State Median Household Income	$49,945	$53,644
Employee Pension Contribution	5.3%	8.2%
Pension Benefit Retirement Factor	1.9%	2.3%
Benefits to Contributions	35.85%	28.05%

The inclusion of Social Security contributions and benefits changes the situation. Covered teachers now contribute a total of 11.5% towards their retirements in exchange for the 1.9% per year pension benefit plus their Social Security benefit. Now the ratio of their pension benefit relative to their contributions depends on their salary and the number of years worked. Table 2 calculates the retirement benefit, including Social Security under the assumptions outlined earlier, divided by the contribution. Due to the progressive nature of Social Security benefits, this ratio declines as teachers earn higher salaries and have longer careers.

Table 2: Ratio of Annual Benefits to Total Contributions								
	Years Employed							
Salary	5	10	15	20	25	30	35	40
18,000	0.165	0.389	0.389	0.355	0.333	0.318	0.308	0.290
30,000	0.165	0.377	0.333	0.311	0.298	0.289	0.283	0.268
42,000	0.165	0.339	0.308	0.292	0.283	0.276	0.272	0.258
54,000	0.165	0.318	0.294	0.282	0.274	0.269	0.261	0.249
66,000	0.165	0.305	0.285	0.275	0.269	0.258	0.250	0.239
78,000	0.165	0.296	0.279	0.270	0.259	0.249	0.243	0.233
90,000	0.165	0.289	0.274	0.264	0.251	0.243	0.237	0.228
Non SS Avg	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281

While teachers who expect to have long careers or higher salaries may be better served by working in a state that does not participate in Social Security, this is most likely not an overriding factor in their decision of where to work. It may, however, affect how long they work and whether they remain in their current position for their entire career. Assuming that a teacher continues to work until they retire and start collecting benefits, then each additional year worked

will increase the annual benefit due to the retirement factor and also due to salary growth. However, it also reduces the number of years that the benefit is received assuming the same life expectancy. It is possible to calculate the present value of pension benefits and thus the point which maximizes the present value of those future benefits. If only pension benefits are considered, then the optimal retirement age will depend on the rate of salary growth (retire later if salary growth is high), life expectancy (retire later if you expect to live longer), and the discount factor assumed in the present value calculations (retire later if the discount factor is high). The retirement factor and the contribution rate will affect the present value of retirement benefits, but it will not affect the age at which they are maximized.

Tables 3 and 4 look at the look at the hypothetical Present Values of employee retirement benefits, their net value after subtracting out the value of their contributions, and the ratio of increased benefits to their contributions from working an additional year. These values are estimated for a worker who starts working at age 25 and is eligible for retirement at age 60 or after 30 years of service. For both tables, a salary growth of 3% is assumed, a discount rate of 5% is used for present value calculations of benefits and contributions, and the employee has a life expectancy of 80.

Table 3: Pension Benefits and Returns for Employees Covered by Social Security

Age	Benefits	Present Value	Net Value	Marginal Return
51	52,962	374,062	105,368	5.339
52	56,318	418,286	127,874	5.727
53	59,813	467,147	153,683	4.018
54	63,452	502,460	164,534	30.099
55	67,241	774,905	411,032	4.376
56	71,187	815,702	424,312	4.312
57	75,296	857,115	436,552	4.237
58	79,574	899,027	447,545	4.150
59	84,028	941,305	457,062	4.049
60	88,665	983,796	464,847	3.294
61	92,682	1,019,394	463,690	3.101
62	96,873	1,053,915	459,293	2.888
63	101,244	1,087,034	451,215	2.655
64	105,804	1,118,386	438,966	2.398
65	110,559	1,147,561	422,005	-0.328

Table 3 is for employees covered by Social Security with a starting salary of $33,400, who contribute a total of 11.5% of their salary each year to Social Security and their pension, and have an annual pension benefit of 1.9% for every year of service. For instance, someone who retired at age 54 after 29 years would receive $63,452 per year starting at age 60. This results in a PV of $502,460. If they work for an additional year, they will receive $67,241 per year starting immediately. Even though the PV of their benefits continues to rise until age 67, the net value (after contributions) peaks at age 60 and the marginal returns to another year of employment

spikes if the employee works at age 54 and then drops beyond that point and even going negative if the employee keeps working past age 64.

Table 4 is for employees not covered by Social Security with a starting salary of $36,440 that contributes 8.2% to their pension and receives a benefit of 2.3% per year of service. The pattern is similar, but with an even more dramatic spike at age 54 and a decline beyond. While the annual and present values of the benefits are lower, the net value is higher due to the lower contribution levels. Also, there are greater marginal returns to continued work until age 57.

Table 4: Pension Benefits and Returns for Employees Not Covered by Social Security

Age	Benefits	Present Value	Net Value	Marginal Return
51	45,626	366,523	157,495	7.001
52	48,802	411,641	185,717	7.539
53	52,128	461,678	217,821	8.112
54	55,609	517,137	254,250	45.155
55	59,253	835,102	552,029	4.840
56	63,064	870,204	565,725	4.582
57	67,052	904,433	577,259	4.296
58	71,222	937,489	586,262	3.981
59	75,581	969,038	592,324	3.634
60	80,138	998,700	594,987	3.253
61	84,901	1,026,053	593,747	2.837
62	89,877	1,050,624	588,042	2.383
63	95,075	1,071,884	577,253	1.890
64	100,504	1,089,244	560,694	1.353
65	106,174	1,102,049	537,608	0.772

The optimal retirement age for Social Security benefits will also depend on the person's age and their year of birth. The Primary Insurance Amount benefit calculated earlier assumes that the benefits start at the applicants normal retirement age. Early retirement is possible, but at a lower amount and delayed retirement receives a higher benefit. However, there are reasons to believe that Social Security will lower the optimal retirement age when combined with a pension. First is the progressive nature of Social Security. Additional years of employment are usually at higher wage rates which provide less of a return than do lower wage rates. Thus, each additional year worked adds less and less to Social Security benefits. Second, Social Security only considers the top 35 years of indexed employment so that working more than 35 years may add nothing to the benefit even though contributions are still being made.

While this suggests that teachers in non-covered states should have longer careers, it is not known whether or not they actually do have longer careers. Comparing the average years of service at retirement for teachers would provide insight into this question. Unfortunately, this information was not available in either the AFT survey or the Public Fund survey, but it would be informative if this information were included in future surveys.

EFFECTS OF THE WINDFALL ELIMINATION PROVISION

The WEP was passed in Congress in 1983 in an attempt to reduce the effect of dual pensions that occur when an employee has had a job that is not covered by Social Security as well as a job that is covered by Social Security. After (or before or during) a career in a non-covered position, workers would participate in Social Security for a reduced period of time. Social Security benefits are relatively higher for workers with lower incomes or shorter careers. When an employee works for a non-covered employer, the Social Security Administration assigns that employee's monthly earnings for that time as zero. However, the zeroes earned during these months are used to calculate the retiree's average monthly earnings. This has the effect of greatly underestimating the actual earning power of the retiree. Consequently, these workers ended up receiving relatively higher benefits than they would have had their entire career been covered by social security. The windfall that the WEP eliminates is this erroneous assumption that the retiree should be paid as a lower-income employee when in fact the employee may be a middle-income or even high-income retiree.

If an employee is subject to the WEP, then the formula discussed earlier is modified. If the employee has fewer than twenty years of substantial earnings covered by Social Security, then the PIA would only include 40% of their AIME up to the first bend point instead of the 90% if there were not any non-covered earnings. If you have thirty or more years of substantial earnings, then your Social Security is not reduced. A sliding scale is used to calculate the reduction if you have between twenty and thirty years of substantial earnings. Note that the reduction does not usually depend on the size of your non-covered earnings or pension, although there is an exception that the reduction in your Social Security can not be greater than half of your non-covered pension.

The WEP would affect teachers in non-covered positions who also had covered employment. If an employee starts off in a covered position, then they have two optimal times to switch to a non-covered position. Social Security benefits cannot be collected unless you have ten years worth of contributions. However, once you have ten years worth of covered work, there is a steady decline in returns for each year you continue to work in a covered position. Employees may also consider switching careers after remaining in a covered position for 30 years. At that point, they have enough sufficient earnings to not be affected by the WEP, but they still face the decreasing returns from their SS contributions.

The WEP may also be an important factor in trying to attract teachers, especially those who are considering going into teaching as a second career after working in a covered position. Given the shorter duration of their non-covered position, these potential employees would be hurt by a pension system that rewards longer careers. Additionally, the benefits that these employees have already earned in their covered position may be reduced by the WEP. Dillon (2007) testified that the WEP and the GPO restricted California's ability to attract these potential second career teachers.

EFFECTS OF THE GOVERNMENT PENSION OFFSET

While the WEP affects employees who have employment in both covered and non covered positions, the GPO affects surviving spouses who were employees in non-covered positions who receive benefits based on their spouses employment in covered positions. When a worker covered by Social Security dies, their spouse and minor children may receive benefits. Surviving spouses can collect 100% of the deceased spouse's benefits if they do not start collecting until full retirement age. They can receive a smaller percentage if they start collecting earlier or are disabled. If the surviving spouse collects Social Security based on their own employment, then they can receive the greater of the two benefit amounts, but not both. Minor children can collect 75% of the benefits and dependent parents may also be eligible for benefits.

However, if the surviving spouse was employed in a non-covered position and the deceased spouse was in a covered position, then the surviving spouse's Social Security benefit based on their spouse's income is cut by two-thirds of the survivor's pension benefit based on their own employment. If the surviving spouse was employed in a covered position while the deceased spouse was in a non-covered position, then the surviving spouse will continue to receive benefits based on their own employment contributions.

Calculating the effects of the GPO requires knowledge of both spouse's employment and pension benefit. Suppose both workers work for 40 years with an ending salary of $50,000. The non-covered spouse would be eligible for an annual pension benefit of $46,000 based on their retirement factor of 2.3%. The covered spouse would have Social Security benefits of $20,133.96 plus a pension of $38,000. If the covered spouse were to die, then the surviving spouse would receive the covered spouse's Social Security benefit less the offset amount. In this case, two-thirds of $46,000 is greater than the benefit and the survivor would receive no benefits.

For couples where one spouse is potentially affected by the GPO, a key decision to be made is when the covered spouse should take retirement and this decision largely depends on which spouse is likely to be the surviving spouse. If the spouse in the covered position is likely to be the surviving spouse, then they should delay retirement. By delaying the start of Social Security beyond the normal retirement age, the individual can increase their retirement benefits and these benefits will not be affected by the GPO when their non-covered spouse passes. However, if the spouse in the non-covered position is likely to be the surviving spouse, then they are more likely to be better off if the covered spouse retires early even though the survivor benefits will be reduced due to the GPO. As a general rule, the lower your life expectancy, the earlier you should take retirement under Social Security since the increase in the number of years the benefit is received should compensate for the reduced benefit. However, if the surviving spouse is likely to be widowed for a long time and the size of the non-covered pension is small, then the doomed, covered spouse may choose to delay retirement.

CONCLUSION

Potential teachers in states that do not participate in Social Security must take special care in their employment decision. Switching careers from a non-covered position to a covered position, or vice versa, will subject them to the WEP. They may also be subject to the GPO if they have a spouse in a covered position and this may affect the couple's retirement decisions. Several states have lobbied for congress to repeal these provisions so that they can attract potential career changers, but the Government Accounting Office estimates that repeal could cost the Treasury $40 billion per year. States may also consider adding a defined contribution plan option to their retirement benefits to attract mobile teachers, although this is true whether a state participates in Social Security or not.

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DETERMINANTS OF MAJOR FIELD TEST (MFT) SCORE FOR GRADUATING SENIORS OF A BUSINESS SCHOOL IN A SMALL MID-WESTERN UNIVERSITY

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ABSTRACT

A relatively small mid-western university uses Major Field Test (MFT) in Business as a direct external assessment tool for undergraduate majors in the School of Business and as a graduation requirement. This test is conducted by the Educational Testing Service (ETS). This study shows MFT scores can be predicted by a common factor (gender) for all cohorts over different semesters, but other variables, such as ESU (Emporia State University) GPA and ACT score, varied from cohort to cohort. For some cohorts the variation in MFT scores was mostly affected by ESU GPA, followed by gender and ACT scores, and for other cohorts ACT's predictive ability was higher than ESU GPA followed by gender. Since overall GPA and ESU GPA were highly correlated, we used ESU GPA as a predictor of MFT as it had stronger correlation with and higher predictive ability for MFT than that of overall GPA.

INTRODUCTION

The Major Field Test (MFT) in Business is conducted by the Educational Testing Service (ETS) for both the Bachelor's degree and the Master's degree. The MFT for the Bachelor's degree is designed to measure a student's knowledge on concepts, principles, theories, and application in nine subject areas (Accounting, Economics, Management, Quantitative Business Analysis, Finance, Marketing, Legal and Social Environment, Information Systems, and International issues). The test contains 120 multiple-choice questions and is worth 200 points. MFT is dynamic in the sense that the test changes every three to four years. All questions are not equally weighted. Some business schools use this test as an external relative measure and as a tool for direct assessment of student learning. The benchmark for the MFT varies from school to school. Even though a student cannot prepare for the test, a school's degree program is expected to cover the concepts, theories, and applications of the test and a student is supposed to retain that knowledge.

Results of the Major Field Test include scores from other institutions for comparison purposes, thus enabling a school to gain insight into their students' knowledge relative to students at other institutions (Marchandani et al, 2001). A downside of using a standardized test is the possibility that factors such as students' grade point average (GPA) or ACT (which covers English, Mathematics, science reasoning and optional writing) score are indicative of performance on the test. In that case, institutions with open admissions policies are at a disadvantage when comparing student performance with those of institutions with higher admissions requirements because their students are less likely to perform at the same level as these other institutions.

Rather than focusing on comparisons with other institutions, a school might concern itself with evaluating test results over time at its own institution. Using a standardized test for improvement of student learning can be enhanced by identifying controllable factors that will result in improved performance (Marchandani et al, 2001). An advantage of identifying these factors is to control for explanatory variables of test results so that changes in test scores can more easily be attributable to changes in curriculum. If ACT scores, for example, are a predictor of MFT test scores, and a cohort of students with a higher than normal average ACT score also scores higher than normal on the MFT, a conclusion is that the higher MFT score was due to the better than average cohort (as judged by ACT score) rather than any changes made to the curriculum to improve student learning.

One of the unanswered questions regarding predictors of MFT scores is the consistency of the various predictor variables over time and different cohorts of students. Characteristics of student cohorts may vary. If the predictors are consistent over time and cohort, test results might be examined in light of attempts to improve student learning of the content areas. However, if they are not consistent in predictive ability, then variations in MFT would be examined in light of characteristics of each cohort, instead of assuming that changes in the curriculum improved test scores.

The purpose of this study is to examine the consistency of predictor variables over different cohorts of students on the scores of the MFT. This test is a graduation requirement in the School of Business at Emporia State University (ESU). ESU's School of Business uses a raw score of 135 as its benchmark. The school uses MFT results for assessment purposes because it helps the institution compare itself with other MFT exam participating institutions. This study examines explanatory variables found in previous studies to explain variation in MFT scores over four cohorts.

LITERATURE REVIEW

One of the issues in the use of standardized tests is validity. Content validity exists when the test covers topics consistent with the school's curriculum (Black and Duhon, 2003) and therefore is specific to the school. Criterion-related validity concerns the association of

standardized test scores and other variables related to test performance (Black and Duhon, 2003). Much of the literature on the MFT concerns the latter in which associations between students' ability to take standardized tests and retain knowledge are examined along with their performance on the MFT (see below). Allen and Bycio (1997) and Bycio and Allen (2007) address both the content validity and criterion-related validity of the MFT and conclude the test functions as intended. Black and Duhon (2003) concluded that the MFT has criterion validity.

Bielinska-Kwapisz et al (2012a) point out that ETS data do not take into account characteristics of the institution or student cohorts. They develop a prediction equation based on student cognitive intelligence (ACT score) and performance in university courses (GPA) to establish goals for different subcohorts of students. Student major area of study was used to differentiate the subcohorts. They added a variable for motivation (extra credit in a course) in the last two years of data. When Bielinska-Kwapisz et al (2012b) estimated the production function for different majors, the explanatory power of the models varied among the majors.

As Buckless et al (1991) indicates, replication in social sciences is warranted due to the lack of experimental control. Bielinska-Kwapisz et al (2012a) also point out the need for additional studies at other universities to enhance the validity of their prediction model and the understanding of the benefits of the use of the MFT as an assessment tool.

This study contributes to the literature by addressing the validity issue in the comparison of different cohorts at the same institution. The cohorts examined here are from different semesters to examine the sustainability of the results over time. Variables used in the analysis are those considered to be predictive of the variation in MFT scores and some of these variables matches with previous studies.

Scores from the ACT, SAT, or SAT converted to ACT are highly correlated to and explain much of the variation in MFT scores. Several studies report that ACT or SAT scores had the highest association relative to other variables examined (Allen And Bycio, 1997; Marchandani et al, 2001; Bean and Bernardi, 2002; Black and Duhon, 2003; Bycio and Allen, 2007; Bielinska-Kwapisz et al, 2012a; Bielinska-Kwapisz et al, 2012b).

With the exception of transfer GPA (the GPA transferred from another school) which was not found significant in any study (Marchandani et al, 2001; Bagamery et al, 2005; Terry et al, 2008), GPA in its many forms is also a significant predictor of MFT performance. The GPA of the major (Allen And Bycio, 1997; Bycio and Allen, 2007), the GPA of business core courses (Allen And Bycio, 1997; Black and Duhon, 2003; Bagamery et al, 2005; Bycio and Allen, 2007; Rook and Tanyel, 2009) and overall GPA (Allen And Bycio, 1997; Marchandani et al, 2001; Bycio and Allen, 2007; Terry et al, 2008; Zeis et al, 2009; Bielinska-Kwapisz et al, 2012a; Bielinska-Kwapisz et al, 2012b) have all been significant variables in explaining the variation in MFT scores. Rook and Tanyel (2009) also found GPA of business core courses was a better predictor of MFT performance than upper-level GPA. The GPA of business core courses was expected to be the best GPA predictor but researchers found that was not always the case (Allen And Bycio, 1997; Bycio and Allen, 2007).

Studies examining the predictive ability of gender result from ETS data which consistently reports higher MFT scores for male students. Research reports mixed results, either supporting the hypothesis that male students perform better on the MFT (Marchandani et al, 2001; Bean and Bernardi, 2002; Black and Duhon, 2003; Bagamery et al, 2005; Zeis et al, 2009; Bielinska-Kwapisz et al, 2012b) or showing no effect due to gender (Allen And Bycio, 1997; Bycio and Allen, 2007; Terry et al, 2008). However more robust analyses suggest a gender effect does exist (Bielinska-Kwapisz et al, 2012b).

Research shows some support for differences in MFT performance based on the major of the students in the sample but results are mixed. Some evidence suggests students in more quantitative majors, such as accounting and finance, perform better on the MFT (Allen And Bycio, 1997; Marchandani et al, 2001; Bycio and Allen, 2007; Bielinska-Kwapisz et al, 2012b). Other studies report lower scores by management and marketing majors (Black and Duhon, 2003; Bielinska-Kwapisz et al, 2012b). Still other studies show little or no predictive ability on the part of student's major (Bagamery et al, 2005).

CURRENT INVESTIGATION

This study investigates three hypotheses: (a) University GPA will have a positive significant impact on MFT scores; (b) gender has an impact on MFT score; and (c) American College Testing (ACT) score has a positive impact on MFT scores. Unlike Bycio and Allen (2007) where three highly correlated predictors (GPA-BUS, GPA MAJOR, and GPA-U) were used in the same model without considering the multi-collinearity problem, only one predictor variable for GPA is tested in this study.

DATA DESCRIPTION

The variables included in this study are MFT scores, ACT scores, Overall GPA, gender, discipline specific variables (Business Administration, Management, Marketing, Accounting, and Information Systems) and ESU GPA. The data was collected from four cohorts who took the MFT during fall 2006, spring and fall 2007, and fall 2010. The corresponding number of students with available ACT scores who took this test was 73, 85, 45, and 46.

Fall 2006

A total of 92 students took the MFT during fall 2006 and ACT scores were available for 73 students. The average score of 73 students who took the MFT during fall 2006 was 156.4 and their corresponding average ACT, average ESU GPA, and average overall GPA were 21.7, 2.991, and 3.09, respectively. The student sample consisted of 40 male students and 23 female

students, 23 accounting majors (ACC), 18 business administration majors (BUA), 10 marketing majors (MKT), 19 management majors (MGT), and 3 information systems majors (IS). Nineteen other students who took the MFT but whose ACT scores were not available scored an average of 156.2 in the MFT. Generally, students without an ACT score are those who transferred from another institution that does not require the ACT for admission. The data description for this cohort is displayed in Table 1.

Table 1: Descriptive Statistics for Fall 2006 Cohort			
Sample size (Fall 2006)	With ACT scores available	Without ACT	Overall
n	73 (ACC-23, BUA-18, MKT-10, MGT-19, IS-3)	19	92
nm (# of males)	40	9	
nf (# of females)	23	10	
MFT average	156.4	156.2	156.2
ESU GPA average	2.991	2.914	2.953
ACT average	21.7		
Overall GPA average	3.09	2.997	3.013

Spring 2007

The average score of 105 students who took the MFT during spring 2007 was 152.96 and the cohort's average overall GPA and average ESU GPA were 3.08 and 3.02, respectively. ACT scores were available for 85 out of the 105 students, therefore, these 85 observations were used to find the determinants of MFT. The description of data is shown in Table 2. Of those 85 students, 36 were males and 49 were females. The average MFT, average ESU GPA, and average ACT scores for those 85 students were 154.55, 2.95, and 21.41, respectively.

Table 2: Descriptive Statistics for Spring 2007 Cohort			
Sample size (Spring 2007)	With ACT scores available	Without ACT	Overall
n	85 (ACC-21, BUA-26, MKT-12, MGT-17, IS-9)	20	105
nm (#of males)	36	9	
nf (#of females)	49	11	
MFT average	154.55	151.38	152.96
ESU GPA average	2.95	3.09	3.02
ACT average	21.41		
Overall GPA average	3.01	3.14	3.08

Fall 2007

The average score of 57 students who took the MFT during Fall 2007 was 158.3 and the cohort's average overall GPA, and average ESU GPA were 3.07 and 3.11, respectively. ACT scores were available for 45 students out of the 57 students and these 45 observations were used to find the determinants of MFT. The description of data is shown in Table 3.

Table 3: Descriptive Statistics for Fall 2007 Cohort

Sample size (Fall 2007)	With ACT scores available	Without ACT	Overall
n	45 (ACC-20, BUA-12, MKT-3, MGT-5, IS-5)	12	57
nm (# of males)	23	5	
nf (# of females)	22	7	
MFT average	161.27	155.33	158.3
ESU GPA average	3.20	3.019	3.11
ACT average	23.378		
Overall GPA average	3.2069	2.9458	3.07

Fall 2010

The cohort who took the MFT in fall 2010 had 69 students with an MFT average of 155.49 with an average ESU GPA of 3.027. The ACT was available for 46 students, 24 males and 22 females. The data description is presented in Table 4. The MFT scores of the 46 students whose ACT scores were available were analyzed. This group had a combined average MFT of 158.1, ACT average of 22.52 and ESU GPA average of 3.09. ACT scores were not available for twenty-three students and that group had an average MFT score of 149.04 with average ESU GPA of 2.88.

Table 4: Descriptive Statistics for Fall 2010 Cohort

Sample size (Fall 2010)	With ACT scores available	Without ACT	Overall
n	46 (ACC-14, BUA-14, MKT-3, MGT-7, IS-6, FIN-1)	23	69
nm (# of males)	24	15	
nf (# of females)	22	8	
MFT average	158.71	149.04	155.49
ESU GPA average	3.09	2.88	3.027
ACT average	22.52		
Overall GPA average	3.12	2.91	3.051

ANALYSIS AND RESULTS

Expectation

Multiple regression models were used for the analysis where MFT scores were a function of ACT, overall GPA, Gender, Majors, and ESU GPA. We expected overall GPA and ESU GPA would be highly positively correlated and we may have to drop one of these variables to avoid a multi-collinearity problem. We also expected to have a relatively moderate or strong correlation between ACT and ESU GPA or overall GPA. MFT scores are expected to have positive correlation with ACT and GPA, but the direction and strength between MFT and Gender or MFT and majors could not be pre-determined. Since the contents of the MFT are relatively unknown and the students cannot be prepared directly for the test, we expected to have a weak to moderate correlation between MFT and ESU GPA. We also expected to have positive association between ACT and overall GPA and the degree of association to be moderate to relatively strong.

CORRELATION AND REGRESSION ANALYSIS

Correlation: Fall 2006 cohort.

The data used for analysis had 73 observations. The correlation matrix is represented in Table 5. The correlation between MFT and ACT was moderate with a value of 0.68. The linear correlation between MFT and Overall GPA was 0.59 while the correlation between MFT and ESU GPA was 0.62. The correlation between ACT and overall GPA was positive with a value of 0.44. Consistent with some previous MFT studies, the students in the accounting major had positive impact on MFT and positive correlation with ACT scores and GPAs. ESU GPA and overall GPA showed relatively strong positive correlation as expected and had a value of 0.93.

Table 5: Correlation Coefficients for Fall 2006 Cohort

Fall 2006	MFT	Overall GPA	ACT Score	Gender	ESU GPA	ACC
MFT	1					
Overall GPA	0.597454	1				
ACT Score	0.683683	0.444137	1			
Gender	0.087367	-0.21488	0.00791	1		
ESU GPA	0.624606	0.932528	0.459831	-0.11053	1	
ACC	0.356194	0.367801	0.320826	-0.33196	0.280664	1

Regression analysis: Fall 2006 cohort.

A linear model with MFT as the dependent variable was used for the analysis and 8 independent variables (ACT, overall GPA, Gender, BUA, MGT, MKT, ACC, and IS) were considered. The model was significant with explanatory power of 0.67. Among the eight independent variables, ACT, ESU GPA, gender, ACC (accounting), and BUA (business administration) were statistically significant at 5% level. The model was revised with only five independent variables, ACT, ESU GPA, gender, ACC, and BUA, and the regression results are presented by table 6. The revised model as a whole was statistically significant and also each of the individual sample coefficients became significant. ACT, overall GPA and gender showed positive impact on MFT. The coefficients of ACT, ESU GPA, and gender were 1.54, 8.97, and 4.48 respectively. University GPA had the largest impact on MFT followed by gender and ACT. The explanatory power of the model had a value of 0.64. The residual plots against ACT and overall GPA did not show any pattern or trend. The normal probability plot of MFT appeared linear which indicated MFT scores were normally distributed.

Table 6: Regression Statistics for Fall 2006 Cohort

R Square	0.647865					
Standard Error	7.719998					
Observations	73					
F (5, 67)	24.65363	*Significance F*	5.37E-14			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Critical value (t 0.05, 67d.f.)*	*Significant*(s)
Intercept	90.61539	6.438344	14.07433	1.09E-21	1.996	s
ACT Score	1.542962	0.287822	5.360827	1.1E-06	1.996	s
Gender	4.483345	1.94676	2.302978	0.024392	1.996	s
ESU GPA	8.977808	1.872234	4.795238	9.42E-06	1.996	s
ACC	5.913028	2.342535	2.5242	0.013972	1.996	s
BUA	4.637632	2.27801	2.035826	0.045725	1.996	s

Correlation: Spring 2007 cohort.

The correlation between MFT and ACT was moderately high with a value of 0.62. The data had 85 observations. The linear correlation between MFT and Overall GPA was 0.31 while the correlation between MFT and ESU GPA was 0.38. The correlation between Overall GPA and ESU GPA was relatively strong with a value of 0.94. The strength of linear relationship between ACT and Overall GPA or ESU GPA was in the range of 0.29 to 0.35.

Table 7: Correlation Coefficients for Spring 2007 Cohort							
Spring 2007	MFT Score	ACT	Cum GPA	Gender	BUA	ACC	ESU GPA
MFT score	1						
ACT	0.628602	1					
Cum GPA	0.316826	0.294484	1				
Gender	0.230183	0.160844	-0.35574	1			
BUA	-0.02551	-0.01169	0.047617	-0.2073	1		
ACC	0.151834	0.134328	0.184728	-0.10456	-0.38026	1	
ESU GPA	0.387193	0.35794	0.940057	-0.2991	0.018163	0.136699	1

Table 8: Regression Statistics for Spring 2007 Cohort						
R Square	0.471425					
Observations	85					
F	24.08078	*Significance F*	3.08E-11			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Critical value (t0.05, 81 df)*	*Significant (s)*
Intercept	103.147	6.376812	16.17532	4.32E-27	1.99	s
ACT	1.495772	0.277179	5.396417	6.6E-07	1.99	s
Gender	5.438098	2.045728	2.65827	0.009461	1.99	s
ESU GPA	5.783516	1.920485	3.011488	0.003467	1.99	s

Regression analysis: Spring 2007 cohort.

Because Overall GPA and ESU GPA are highly correlated (r = 0.94), a linear model with MFT as the dependent variable was used with eight independent variables (ACT, overall GPA, Gender, BUA, MGT, MKT, ACC, and IS), excluding ESU GPA for possible multi-collinearty. he model was statistically significant with explanatory power of 0.69 (see Table 8). Among the coefficients of eight independent variables, the sample coefficients of only three variables (ACT, Overall GPA, and Gender) were statistically significant. The model was refined further with only three explanatory variables (ACT, Overall GPA, and Gender) and all three independent variables became statistically significant and the overall model became highly significant with an F-value of 22.82 and a p-value of 8.29E-11.

Correlation: Fall 2007 cohort.

The data included 45 observations (see Table 9). The correlation between MFT and ACT was only 0.28, MFT and Overall GPA was 0.24 while the correlation between Overall GPA and ACT was 0.39. There was a strong positive linear correlation between overall GPA and ESU GPA, indicated by the coefficient of correlation of 0.85.

Table 9: Correlation Coefficients for Fall 2007 Cohort

Fall 2007	MFT score	ACT Score	Cum. GPA	ESU GPA	ACC	IS	Gender
MFT score	1						
ACT Score	0.284965	1					
Cum. GPA	0.242269	0.395717	1				
ESU GPA	0.313231	0.334436	0.849674	1			
ACC	0.237659	0.243754	0.287548	0.236918	1		
Gender	0.375618	0.240798	0.301017	0.108904	0.159049	-0.07859	1

Regression analysis: Fall 2007 cohort.

A linear model with three independent variables (ACT, ESU GPA, and Gender) was estimated and the model as a whole was significant (see Table 10). The individual coefficients associated with ACT and ESU GPA were not significant, but Gender became significant. Twenty-three percent of the variation of MFT was explained by ESU GPA, Gender, and ACT.

Table 10: Regression Statistics for Fall 2007 Cohort

R Square	0.230334					
Standard Error	10.31949					
Observations	45					
F(3, 41)	4.089945	*Significance F*	0.012505			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Critical value (t 0.05, 41 df)*	*Significant (s)*
Intercept	130.4556	12.40703	10.51465	3.3E-13	2.02	s
ACT	0.369673	0.425127	0.86956	0.389603	2.02	ns
Gender	7.160841	3.17226	2.257331	0.029379	2.02	s
ESU GPA	5.770029	3.568517	1.616926	0.113564	2.02	ns

Correlation: Fall 2010 cohort.

ACT scores had a moderate positive correlation (0.50) with MFT score as expected (see Table 11). Gender and ACT had a very weak positive correlation. MFT and ESU GPA indicated a weak positive association. Gender showed positive relationship with MFT. Accounting majors indicated positive relationships with MFT, ACT, ESU GPA, and overall GPA. University GPA and overall GPA indicated strong positive correlation.

Table 11: Correlation Coefficients for Fall 2010 Cohort

Fall 2010	MFT Total Score	ACT Score	ESU GPA	Gender	Cum. GPA
MFT Total Score	1				
ACT Score	0.500828	1			
ESU GPA	0.259179	0.435414	1		
Gender	0.41605	0.090596	0.025021	1	
Cum. GPA	0.261734	0.498617	0.929299	-0.02369	1
ACC	0.239393	0.435655	0.32743	-0.12337	0.452177

Regression analysis: Fall 2010 cohort.

As before, a linear model with MFT score as a function of ACT, ESU GPA, and Gender was estimated (see Table 12). The model as a whole was significant and all independent variables (ACT, Gender) were significant except ESU GPA. The model explained 39 percent of the variation of MFT. The normal probability plot indicated the fulfillment of the assumption of normality of MFT scores.

Table 12: Regression Statistics for Fall 2010 Cohort

R Square	0.392036					
Standard Error	10.13874					
Observations	46					
F(3,42)	*9.02769*	*Significance F*	9.86E-05			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Critical value t0.05, 42 df*	*Significant (s)*
Intercept	109.177	12.61585	8.653951	6.98E-11	2.018	s
ACT Score	1.764339	0.535706	3.293481	0.002014	2.018	s
ESU GPA	1.595654	3.715937	0.429408	0.669821	2.018	ns
Gender	9.316982	3.005327	3.100156	0.003448	2.018	s

LIMITATIONS

A significant proportion of International students from different parts of the world are in the degree program and whose second language is English. The performance on the MFT varies to a great extent and may depend on the student's region of the world.

CONCLUSION

The MFT is an external relative performance measure of student learning to compare students of one institution with other students of participating institutions. Broadly speaking, it is used as an assessment tool and can be used in many different ways. For example, syllabi and coverage of topics can be modified toward more common topics covered by other institutions. The MFT can be used to identify strengths to retain and weaknesses to improve.

The findings of this study support earlier studies in that GPA is a predictor of MFT, but it does not always have significant impact on MFT. We investigated four cohorts over four semesters. For every cohort gender appeared to have significant influence on MFT performance with the analysis indicating males performed better than females. ACT and university GPA can predict MFT. These variables are statistically significant, but the results vary from cohort to cohort.

The consistency of the various predictor variables over time and different cohorts of students is not validated by the results of this study. Characteristics of student cohorts varied, as did their MFT scores, but the predictors did not fully explain the results. While those cohorts with higher GPA and ACT scores did score higher on the MFT in a relative sense, the relationship was not supported statistically. One of the implications of this study is the recognition that student performance on the MFT cannot be fully explained by the variables examined in this study. A school attempting to improve student performance on the MFT by manipulating these predictors may find that their attempt to do so may fail.

FUTURE RESEARCH

Future research in this area could investigate other explanatory variables with a more robust research design. Questions to address might include the following:

1. Investigation on the impact of each major on MFT; similarities or differences, if any.
2. Why does gender make a difference? Can it be linked with ACT?
3. Inclusion of other meaningful variables to explain MFT score (motivation, review of materials).
4. Impact of transfer/non transfer students.

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GRADE EXPECTATIONS: EVIDENCE OF COGNITIVE BIASES IN STUDENTS' ACADEMIC SELF-ASSESSMENT IN THE INTRODUCTORY FINANCE COURSE

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ABSTRACT

Student grade expectations are an important consideration in student satisfaction with college programs. Given the level of debate concerning the issue of grading and grade inflation, there is naturally growing interest in studying factors that affect student retention. This study examines how students in the introductory finance course actually perform relative to their own expectations concerning performance. The study specifically examines students in the introductory finance course. The data suggest that students in this course exhibited common cognitive biases in their formation of grade expectations and in their interpretation of deviations between expected grades and actual grades.

INTRODUCTION

What does a grade in a course represent? Alternatively stated, what information is conveyed by a specific grade in a course? Disagreement concerning the meaning of grades can be a frequent source of student and faculty conflict. Even though faculty may explicitly state in the course syllabus the course requirements, instructional/learning objectives, and grading system, students are often disappointed and upset with their final course grade. Some of the angst may be due to a disagreement as to what is important or appropriate in evaluating student performance. In addition to differing from faculty in their preferences concerning grading (and grades), not all students are likely to have the same preferences for grading strategies. These possible differences between faculty and students may explain much of the dissatisfaction students express when they receive grades lower than they had expected.

It is also likely that students are subject to cognitive biases in their formation of expectations concerning grading and in their understanding of why they earn the grades they do. The field of Behavioral Finance has emerged as a response to the realization that common cognitive biases have an impact on financial decision-making in the context of investment management and corporate finance. The awareness of the existence of cognitive biases has changed the way financial researchers examine and explain various phenomena. It is likely that

the consideration of cognitive biases may aid in understanding finance students' grade expectations as well.

Shefrin (2007) discusses several known cognitive biases and discusses their impact on the formation of expectations and decision-making. Two biases that seem appropriate to student grade satisfaction are 1) *Overconfidence Bias* and 2) *Self-attribution Bias***.** Overconfidence bias describes the tendency for individuals to "make mistakes more frequently than they believe and view themselves as better than average." (Shefrin, 6). Self-attribution bias describes the tendency for individuals "to take credit for positive outcomes and to blame others or bad luck for negative outcomes." (Shefrin, 131).

If students suffer from overconfidence bias, they will expect a higher than average grade because they may believe they are better than average. Clearly, not all students can be better than average.[1] Also, the overconfidence bias would tend to cause students to believe that they had performed better than they actually had in both exam preparation and in exam performance. If students suffer from self-attribution bias, then they will tend to take credit for good grades they receive and attribute any poor grades they receive as arising from the shortcomings of others, such as the instructor, the author of the textbook, or even other students.

At least two trends in higher education may also contribute to the difference in expectations between professors and students. First, years of grade inflation in secondary and post-secondary schools may have established an expectation that class attendance and a "good faith effort" should be sufficient to generate a good grade. Second, if institutions, students, and parents regard universities as the provider of a service and students/parents as consumers, then the consumers reasonably want to be satisfied with their purchase. In this instance, faculty must concern themselves with customer complaints. Dissatisfaction with a course grade may lead to student retention concerns, unsatisfactory course evaluations, and deficient recruiting of new majors.

Chonko, Tanner, and Davis (2002) note that in the student-as-consumer model "too many students appear to desire to do as little as possible to earn an acceptable grade, without considering learning. In other words, learning has been subordinated to the grade" (Chonko, et al., 277). One of the conclusions drawn in that study is:

> *Expectations that revolve around feelings of entitlement are dangerous and certainly not in the long-term interests of the students. Students who define success as a grade take a very short-term perspective. Good grades are assumed to indicate that something has been learned; however, learning refers to either knowledge of facts repeated on objective testing or understanding of materials as illustrated through papers or projects that require synthesis and analysis. Good grades without learning will undermine long-term success, in spite of the students' expectations that good grades will help them become gainfully employed. (Chonko, et al., 278)*

There is growing interest in studying factors that affect student satisfaction and retention in business courses, especially those courses that are required. The objective of this study is to investigate how students in the introductory finance course prefer to be graded, their expected grade in the course, and the grade they actually received in the course. Specifically, this study examines the relationship between a student's expected grade in the introductory finance course and the actual grade received in the course.

The remainder of the paper is structured in the following manner. The next section provides a brief review of the literature on student expectations, performance, and satisfaction. Section 2 reviews the methodology and describes the survey questionnaire used in this study. Section 3 summarizes the responses and analyzes the results. The final section of the paper offers concluding remarks concerning students' expectations in the introductory finance course and actual performance.

ASSOCIATED LITERATURE MATERIAL

Although numerous studies have examined the determinants of success in the introductory finance course [Sen, Joyce, Farrell, and Toutant (1997), Didia and Hasnat (1998), Borde, Byrd, and Madani (1998), Krishnan, Bathala, Bhattacharya, and Ritchey (1999), Pritchard, Romeo, and Saccucci (2000), Marcal and Roberts (2001), Johnson, Joyce, and Sen (2002), and Terry (2002)], only three studies in business journals were found that addressed the grade expected by students. Montondon and Eikner (1997) focused on the relative performance of transfer students from two-year institutions and "native" students in the intermediate accounting I class. Montondon and Eikner observed "Two-thirds of the transfers expected to earn an A in intermediate accounting I, while slightly less than half of the native students were so optimistic" (Montondon and Eikner, 30) and "transfer students may have based their expectations on their higher GPAs and lack of forewarning about the intermediate course. However, both groups were more optimistic than their past performance warranted" (Montondon and Eikner, 35). The authors found that once academic and demographic factors were incorporated into the analysis, transfer students and native students had the same success rate in the course. Christensen, Fogarty, and Wallace (2002) examined how students assessed their success in the cost accounting class during the semester and the manner in which the students modified their behavior during the term. Immediately after completing their first examination in the course, students were asked to predict their score for the examination. The authors found that when the predicted examination score was below the actual examination score, students responded by performing better in the subsequent examination. However, the authors also found that when the predicted examination score was above the actual examination score, students did not do relatively as well in the subsequent examination. Chan, Lung, and Shum (2005) applied the Christensen et al. methodology to a senior-level portfolio management course. Chan et al. used ordinary least squares techniques to examine the relation between the student's expected

score on examination two and the student's actual score on examination two. The authors then used an ordered logit model to examine the student's final course grade. The findings of Chan et al. are consistent with the findings of the Christensen et al. study. Chan et al. note "poor-performing students miscalculate, misgauge, and misread their own performance although various cues might exist" (Chan, et al., 27).[2]

SURVEY INSTRUMENT

The survey instrument[3] was designed to address a number of issues (and questions) raised in previous studies. The survey instrument was pilot-tested during a summer term when it was administered to students in two sections of the introductory finance class. The survey was rewritten reflecting recommendations and suggestions made by students and other faculty. The survey was administered during the second week of the semester to all five sections of the introductory finance course. The instructions at the top of the survey were: "The purpose of this brief survey is to help faculty better understand the opinion of students regarding course grades. This survey is NOT a statement regarding the grading policy of your instructor in this course."

The survey instrument had three sections. The first section of the survey requested demographic data from the individual respondent. Specific questions pertained to the respondent's gender, age, employment status while attending classes, ethnicity, and major field of study.

The second section of the survey contained 26 questions, with the majority of questions being in a multiple choice format although a small number of open-ended questions also appeared. Some questions addressed the same topic or issue and these questions were placed with similar ones. For example, three sets of three questions asked students for the source of their confusion when they do not understand the material in the course (Questions 15, 16, and 17), three questions asked students what was the reason they received a good grade in a course (Questions 19, 20, and 21), and three questions asked students what was the reason for a poor performance in a course (Questions 23, 24, and 25). Five questions (Questions 10 through 14, inclusive) asked students to allocate 100 points across five different areas as to how he/she feels a course grade *should be* determined (for example, class attendance, mastery of the material as demonstrated by examination scores, class participation, effort, and out-of-class project or paper).

The third section of the survey contained six questions. A set of five questions (Questions 27 through 31, inclusive) asked students to provide the percentage of students in the course who should receive each of the letter grades "A", "B", "C", "D", and "F". The final question on the survey was "What grade do you expect to receive in this course?"

SURVEY RESULTS

The first part of the survey instrument requested demographic information. All 175 students enrolled in the five sections of the introductory finance course during the semester completed and returned the survey. Almost 62 percent (108 of 175) of the respondents identified themselves as male. Over 83 percent (146) of the respondents identified themselves as Caucasian/White and almost 13 percent (22) identified themselves as African-American/Black. Only four respondents identified themselves as Hispanic (Latino or Latina). Because of the low absolute and relative number of Hispanic respondents, these participants were grouped for analytical reasons with three international students. The age of the respondents ranged from 19 to 45, with almost 92 percent (160) of the respondents self-reported as under the age of 25. Management and Marketing were the two most common majors, with 35 percent (62) and 25 percent (44) of the respondents, respectively.

The second section of the survey contained 26 questions related to the respondent's course performance relative to past expectations and factors that might shape a student's expectations in a course. Table 1 summarizes the responses in two panels. Some of the 26 questions posed in this section were in a multiple-choice format. Hence, Panel A of Table 1 reports the percentage for each response for these questions. Respondents reported they preferred examinations that were dominated by multiple-choice questions, with almost 79 percent expressing a preference for examinations with either only multiple-choice questions or primarily multiple choice questions with some numerical problems. Respondents were strongly opposed to a "strict curve," preferring either predetermined values for grades or a "modified curve" that is based on "natural breaks" in the grade distribution. Although 85 percent of the respondents indicated they usually received the final grade expected, when a student is surprised by his/her final grade, about one-out-of-four indicated the grade received was usually lower than expected and one-out-of-three indicated the grade received was usually higher than expected.

Three different scenarios were presented to the students with three questions each. For each scenario there were a total of three responses. However, only two responses were presented at a time. The student had to select the better of the two responses presented. Questions 15, 16, and 17 (Table 1, Panel A) comprised the first scenario that pertained to the student's inability to understand the material in a course. The three responses that were sequenced were: "The instructor or text did not explain the material well"; "I did not try very hard to understand the material"; and "It is difficult for me to learn certain things". The students appeared to be consistent across their pair-wise comparisons and concluded (of course) that the reason why they did not understand the material in the course was because the instructor (or text) did not explain the material well. Assuming competent instruction, this strong tendency in the data could be seen as evidence of *self-attribution bias*. The responses that would attribute the grade result to the students' own actions were significantly underrepresented.

Table 1: Response Summary to Selected Questions

Panel A: Multiple Choice Format Questions

Number	Question and Responses	Percentage
1	Course examinations should be composed of:	
	• Only numerical problems	2.9
	• Only multiple choice questions	38.9
	• Mostly numerical problems with some multiple choice questions	5.7
	• Mostly multiple choice questions with some numerical problems	40.0
	• An equal mix of multiple choice questions and numerical problems	11.4
	• Did not respond	1.1
2	The final grade for the course should be determined by:	
	• Predetermined values used no matter how the class does (A"=90%, "B"=80%, etc.)	36.6
	• Grading on "strict curve" (equal number of "A" grades and "F" grades, "B" and "D", etc.)	3.4
	• Grading on "modified curve" (looking for "natural grade breaks")	57.7
	• Did not respond	2.3
3	Do you usually receive the course grade you expected?	
	• I usually receive the grade I expected	85.1
	• I am often surprised by the grade I receive	14.9
4	When I am surprised by the final course grade I receive, it is because:	
	• Usually, the grade is higher than I expected	25.1
	• Usually the grade is lower than I expected	32.6
	• About one-half the time the grade is higher and about one-half the time the grade is lower	42.3
5	When the course grade received is lower than expected, the primary reason I am surprised is that the grade did not seem to reflect:	
	• My class participation	6.9
	• The effort I put into the class	57.1
	• My performance on examinations	28.0
	• My class attendance	8.0
15	When I do not understand the material in a course, it is usually because:	
	• The instructor or text did not explain the material well	64.0
	• I did not try very hard to understand the material	35.4
	• Did not respond	0.6
16	When I do not understand the material in a course, it is usually because:	
	• I did not try very hard to understand the material	40.0
	• It is difficult for me to learn certain things	59.4
	• Did not respond	0.6
17	When I do not understand the material in a course, it is usually because:	
	• It is difficult for me to learn certain things	27.4
	• The instructor or text did not explain the material well	72.0
	• Did not respond	0.6
19	When I receive a good grade in a course, it is usually because:	
	• I worked very hard in the course	88.6
	• The instructor was very easy	10.9
	• Did not respond	0.6
20	When I receive a good grade in a course, it is usually because:	
	• The instructor was very easy	6.9
	• The examinations reflected the lecture material	92.6
	• Did not respond	0.6
21	When I receive a good grade in a course, it is usually because:	
	• The examinations reflected the lecture material	55.4
	• I worked very hard in the course	44.0
	• Did not respond	0.6

Table 1: Response Summary to Selected Questions

Panel A: Multiple Choice Format Questions

Number	Question and Responses	Percentage
22	If a student has taken all the examinations during the term and is satisfied with his/her course grade, do you prefer the final examination be required or optional for the course?	
	• A comprehensive final examination should be **required** of the student	4.0
	• A comprehensive final examination should be **optional** for the student	95.4
	• Did not respond	0.6
23	When I perform poorly in a course, it is usually because:	
	• I did not try hard enough in the course	41.1
	• The instructor was very difficult	58.3
	• Did not respond	0.6
24	When I perform poorly in a course, it is usually because:	
	• The instructor was very difficult	28.0
	• The examinations did not reflect the lecture material	71.4
	• Did not respond	0.6
25	When I perform poorly in a course, it is usually because:	
	• The examinations did not reflect the lecture material	70.3
	• I did not try hard enough in the course	29.1
	• Did not respond	0.6

Table 1 Response Summary to Selected Questions (continued)

Panel B: Open-Ended Format Questions

Number	Question	Characteristics:			
		Mean	Median	Min	Max
10	I feel _____ percent of a course grade should reflect **my mastery of the material as demonstrated by examination score**s.	41.6	40	2	95
11	I feel _____ percent of a course grade should reflect **my effort** put forth into the course.	20.1	20	0	90
12	I feel _____ percent of a course grade should reflect **my class attendance**.	10.8	10	0	50
13	I feel _____ percent of a course grade should reflect **my performance or an out-of-class project or paper.**	9.4	20	0	50
14	I feel _____ percent of a course grade should reflect **my class participation**.	7.7	10	0	35
18	**Not** including the final examination, I prefer to have ____ examinations during the term.	3.8	4	1	8
27	**In this course**, ____ percent of the students should receive a grade of "A"	25.9	20	5	100
28	**In this course**, ____ percent of the students should receive a grade of "B".	23.7	30	0	70
29	**In this course**, ____ percent of the students should receive a grade of "C".	21.9	30	0	70
30	**In this course**, ____ percent of the students should receive a grade of "D".	11.2	10	0	45
31	**In this course**, ____ percent of the students should receive a grade of "F".	5.5	5	0	20

The second scenario consisted of Questions 19, 20, and 21 (Table 1, Panel A) and pertained to the student receiving a good grade in a course. The students were consistent across their pair-wise comparisons and stated that when they receive a good grade in a course that either the examinations reflected the lecture material or they worked very hard to understand the material. The third scenario consisted of Questions 23, 24, and 25 (Table 1, Panel A) and pertained to the reason why the student performed poorly in a course. Again, the students appeared to be consistent across their pair-wise comparisons and concluded that the examinations did not reflect the lecture material. Again, this tendency would be consistent with a *self-attribution bias*.

Some of the questions posed in this section were of an open-ended nature. Panel B of Table 1 reports descriptive statistics (mean, median, minimum, maximum) for these questions. Five questions (Questions 10 through 14, inclusive, in Table 1, Panel B) asked students to allocate 100 points across five different areas as to how he/she feels the course grade *should be* determined (for example, class attendance, mastery of the material as demonstrated by examination scores, class participation, effort, and out-of-class project or paper). If course grade content was composed by students, the result would be: 41.6 percent for examination scores; 20.1 percent for personal effort; 10.8 percent for class attendance; 9.4 percent for out-of-class project or paper; and 7.7 percent for class participation. In this arrangement, approximately 38 percent of a course grade would be determined by "just showing up in class and talking."

Another set of five questions (Questions 27 through 31, inclusive, in Table 1, Panel B) asked students to provide the percentage of students in the course who should receive each of the letter grades "A", "B", "C", "D", and "F". The responses for these five questions were inputted to the data set and then a short computer algorithm scanned each of the responses for each individual to monitor that the student used all 100 percent. One student responded that 100 percent of the students should receive an "A" for the course. Consequently, this meant that the minimum value of the other four possibilities would be zero. Students indicated the mean values for each grade should be: 25.9 percent "A"; 23.7 percent "B"; 21.19 percent "C"; 11.2 percent "D"; and 5.5 percent "F". Although the responses for each student were reviewed, these values do not sum to 100 percent. The reason for that is that the mean is influenced by extreme values (either very small or very large) and some students apparently had relatively low percentage values for grades of "A", "D", and "F".

Survey Questions 5, 11, and 26 referenced students' views on effort. For Question 5 (Table 1, Panel A), over 57 percent of the respondents indicated that the primary reason that the grade they received in a course was lower than the grade expected was that the professor did not consider the effort the student put into the course. Question 11 (Table 1, Panel B) asked the student to indicate what percentage of a course grade should be based on effort. The values recorded ranged from zero percent to 90 percent, with the average being 20.1 percent. However, Question 26 posed the question: "How accurately can a professor determine a student's effort in a class?" The responses provided were a five-point Likert scale, with the anchors being "1"

representing "cannot determine accurately" and "5" representing "can determine with great accuracy." The average value was 3.16. The responses to these three questions present a dilemma in that students feel that effort should be part of the course grade but professors are not able to assess effort with a great degree of accuracy.

The final question on the survey was "What grade do you expect to receive in this course?" Table 2 and Table 3 provide the grades expected by students. Table 2 is a cross-tabulation analysis of the grade expected and the final course grade. No student indicated his/her expected grade was less than a "C". Seven students withdrew from the course by the designated date. Over 42 percent of the students expected a grade of "A" for the course and over 50 percent expected a grade in the "B-range" (either "B" or "B+"). In fact, the average expected grade for the original respondents was 3.52 while the actual course grade (for the 168 respondents who completed the course) was 2.65. A Chi-Square test of significance was performed on the data contained in Table 2 and the resulting χ^2 statistic of 64.2408 generated a p-value of 0.0001. This optimism in grade expectations is consistent with *over confidence bias* on the part of the students.

Table 2: Cross-Tabulation Analysis Of Expected Grade* And Final Grade (number and percent)

		Expected Grade*					
		A	B+	B	C+	C	Total
Final Grade	A	25 14.3%	5 2.9%	0 0.0%	0 0.0%	0 0.0%	30 17.14%
	B+	6 3.4%	4 2.3%	2 1.1%	0 0.0%	0 0.0%	12 6.86%
	B	18 10.3%	18 10.3%	14 8.0%	1 0.6%	0 0.0%	51 29.14%
	C+	7 4.0%	1 0.6%	3 1.7%	1 0.6%	0 0.0%	12 6.86%
	C	16 9.1%	9 5.1%	12 6.9%	4 2.3%	2 1.1%	43 24.57%
	D+	0 0.0%	2 1.1%	3 1.7%	0 0.0%	1 0.6%	6 3.43%
	D	1 0.6%	0 0.0%	4 2.3%	0 0.0%	1 0.6%	6 3.43%
	F	0 0.0%	4 2.3%	3 1.7%	1 0.6%	0 0.0%	8 4.57%.
	Withdraw	1 0.6%	0 0.0%	4 2.3%	2 1.1%	0 0.0%	7 4.0%
	Total	74 42.29%	43 24.57%	45 25.71%	9 5.14%	4 2.29%	175 100.0%
	Chi-Square = 64.2408 with df = 28 and p-value = 0.0001. * No student indicated his/her expected grade would be less than a "C".						

Table 3: Cross-Tabulation Analysis of Expected Grade and Final Grade, by Gender and Ethnicity (number and percent)

Panel A: By Gender

Expected Grade

	A	B+	B	C+	C	Total
Female	29 16.6%	13 7.4%	19 10.9%	4 2.3%	2 1.1%	67 38.29%
Male	44 25.7%	30 17.1%	26 14.9%	5 2.9%	2 1.1%	108 61.71%
Total	73 42.29%	43 24.57%	45 25.71%	9 5.14%	4 2.29%	175 100.0%

Final Grade

	A	B+	B	C+	C	D+	D	F	Withdraw	Total
Female	16 9.1%	6 3.4%	18 10.3%	3 1.7%	15 8.6%	3 1.7%	4 2.3%	1 0.6%	1 0.6%	67 38.29%
Male	14 8.0%	6 3.4%	33 18.9%	9 5.1%	28 16.0%	3 1.7%	2 1.1%	7 4.0%	6 3.4%	108 61.71%
Total	30 17.14%	12 6.86%	51 29.14%	12 6.86%	43 24.57%	6 3.43%	6 3.43%	8 4.57%	7 4.0%	175 100.0%

Panel B: By Ethnicity

Expected Grade

	A	B+	B	C+	C	Total
Af-Am/ Black	11 6.3%	7 4.0%	2 1.1%	0 0.0%	2 1.1%	22 12.57%
Caucasian/ White	60 34.3%	34 19.4%	41 23.4%	9 5.1%	2 1.1%	146 83.43%
Other	3 1.7%	2 1.1%	2 1.1%	0 0.0%	0 0.0%	7 4.00%
Total	73 42.29%	43 24.57%	41 25.71%	7 5.14%	4 2.29%	175 100.0

Final Grade

	A	B+	B	C+	C	D+	D	F	Withdraw	Total
AF-Am/ Black	1 0.6%	1 0.6%	7 4.0%	1 0.6%	9 5.14%	1 0.6%	1 0.6%	0 0.0%	1 0.6%	22 12.57%
Caucasian/ White	27 15.4%	11 6.3%	41 23.4%	11 6.3%	33 18.9%	5 2.9%	4 2.3%	8 4.6%	6 3.4%	146 83.43%
Other	2 1.2%	0 0.0%	3 1.8%	0 0.0%	1 0.6%	0 0.0%	1 0.6%	0 0.0%	0 0.0%	7 4.00%
Total	30 17.14%	12 6.86%	51 29.14%	12 6.86%	43 24.57%	6 3.43%	6 3.43%	8 4.57%	7 4.00%	175 100.0%

Table 3 provides a further analysis of the students' expected grade and final course grade. Panel A of Table 3 presents both the expected grade and the final course grade along gender lines. However, the Chi-Square test of significance generated a χ^2 value of 2.9782 for the

expected grade and a χ^2 value of 9.3574 for the final course grade, neither of which is statistically significant at any generally acceptable level for the appropriate degrees of freedom. Panel B of Table 3 presents both the expected grade and the final course grade along ethnic lines. Again, the Chi-Square test of significance generated a χ^2 value of 9.4954 for the expected grade and a χ^2 value of 12.1198 for the final course grade, neither of which is statistically significant at any generally acceptable level for the appropriate degrees of freedom.

CONCLUSIONS

Understanding student expectations is an important first step in managing student expectations in the current academic environment in which the potentially conflicting goals of maintaining academic rigor, maximizing student retention, and maintaining student satisfaction are advanced. If student's expectations are overly optimistic, then student satisfaction will only occur if grade inflation is permitted or student expectations are modified. Clearly, grade inflation is not sustainable in the long run for various societal reasons. The alternative is to attempt to better understand the formation of student expectations in the hopes of being able to modify expectations to a more reasonable level.

This paper has examined the grade expectations formation and explanation of outcomes reported by students in multiple sections of the introductory finance course. The data clearly indicates that the students form impossibly optimistic expectations of grading outcomes. This tendency is consistent with *overconfidence bias*. Further, the data strongly suggest that students attribute poor grades to factors that do not include those under the student's own control. Specifically, the students in the study explain poor grades they receive as being caused by poor instruction, low correlation between class material and exam topics, and poorly written textbooks. Alternative explanations such as low student effort and low student capability are significantly underreported. This tendency in the data is consistent with *self-attribution* bias.

While it is interesting to find evidence that students in the introductory class exhibit biases common in investment managers and corporate financial managers, the real benefit of the findings is in providing a basis upon which professors can begin to systematically manage student expectations. As discussed earlier in the paper, grade expectations management techniques such as exceedingly rigorous first exams can be useful in moderating student expectations. However, there are likely numerous existing techniques for educating decision makers concerning the impact of cognitive biases that would be useful in this setting. However, a full examination of the potential for managing student expectations through correcting student cognitive biases is left for future research.

The current societal debate concerning the role and nature of grading academic performance is unlikely to disappear soon. It is hoped that this study has provided insights that will be useful to the business academic faced with the issue.

ENDNOTES

[1] One of the authors has repeatedly demonstrated this bias by asking a classroom of students to indicate if they feel they are a better than average driver by raising their hands. Invariably, the vast majority of students in the class raise their hands – despite the low likelihood that the classroom is indeed filled with above average drivers.

[2] These observations might be seen as suggesting both overconfidence bias and self-attribution bias.

[3] For a copy of the survey, please contact the lead author of the article at jmarcis@coastal.edu before January 1, 2014.

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COGNITIVE STYLE DIFFERENCES AND STUDENT COPING BEHAVIOR.

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ABSTRACT

Cognitive style research may be classroom specific based on the findings of this study, as each class provided evidence of cognitive style gap having relationships with different coping techniques. These findings have provided evidence that there may be other intervening variables that determine the applicability of AI theory in these undergraduate courses. Friedel and Rudd (2009) found the same when examining dissimilar cognitive style and student engagement; in which they speculated that this intervening variable may be the instructor's ability to motivate students to bridge the cognitive style gap for the purpose of learning. Likewise, the researchers in this study found that in some classes, there was an association with larger cognitive style gaps associated with additional coping.

INTRODUCTION

A number have researchers (Geisler, Wiedig-Allison and Weber, 2009; Friedel and Rudd, 2009; Samms and Friedel, (in press); Samuel and Kohun, 2010; Struthers, Perry and Menec, 2000), have attested to direct, indirect and even inverse relationships between cognitive style or coping and other factors. However, research has not documented existing relationships between the cognitive gap and coping behavior. This study, a continuation of a larger project, examined how dissimilarities in cognitive style between a college instructor and his or her undergraduate students may be associated with other variables believed to be salient to the teaching and learning process. The primary aim of this study therefore, was to find out if there were significant correlations between use of coping behavior as measured by the Coping Orientation of Problem Experience (COPE; Carver, Scheier & Weintraub, 1989) and cognitive style gap, measured utilizing Kirton's Adaption-innovation Inventory (KAI; Kirton, 1976), which provided a gap score between students and their instructors at [State University].

The objectives of this study were to:

1. Determine the cognitive style of faculty participants and cognitive style of student participants for the purpose of calculating cognitive-style gap utilizing the KAI.

2. Determine the use of coping strategies of undergraduate students as measured by the COPE
3. Examine the relationships between cognitive-style gap and undergraduate students' use of coping behavior.

THEORETICAL FOUNDATION

The theory underlying this study – Kirton's Adaption-Innovation (AI) Theory - posited that when incongruence existed in cognitive styles between student and instructor, academic stress is generated (Kirton, 2003) and possibly negative emotion (Brown, Westbrook & Chagalla, 2005). This incongruence is a gap between styles of thinking; some more adaptive while others more innovative. A more adaptive person may solve problems by intently defining the problem and seeking solutions that may prove to be reliable and time-tested in improving efficiency with keen regard to the systems associated with the situation (Kirton, 2003). The more innovative person, however, may solve problems with a broad approach to defining the problem and developing many atypical solutions that tend to discard the conventional systems associated with the problem at hand (Kirton, 2003). A large gap of more than twenty points (as measured by the KAI) may lead to hindered communication between the student and the teacher, which has been found to cause stress for the individual trying to act in a cognitive style more congruent with the other person (Kirton, 2003). These preferences of thinking have been found to be innate and stable, as well as distinct from cognitive level, and the problem solving process (Kirton, 2003).

In the classroom, students may exert effort to cope with instructors having dissimilar cognitive styles, which can be stressful for the student. Motivation of the student drives coping behavior, which may be maintained with dependence on the length of time he/she was willing to cope (duration) and the degree of cognitive style dissimilarity to which the individual acts outside of the preferred behavior (intensity). In alignment with Kirton's (2003) theory, coping may be maintained for an amount of duration and intensity – whereas if motivation was lacking, a student may return to his or her preferred behavior. That is, unless coping behavior was implemented to bridge this cognitive-style gap, a student may continually experience academic stress from inhibited communication while interacting with his/her instructor.

Cognitive styles, as discussed, are preferences and often first response *approaches* to thinking. As such, it is agreeable that individuals could function outside his/her style preference (Kirton, 2003; McKeachie, 1995). Despite individual cognitive styles, students may learn or be taught strategies that would be useful to them in a situation where the teaching methods do not reconcile with their cognitive preference. McKeachie (1995) recommended:

> *that a given student … be best taught by one method early in learning and by another after the student has gained some competence. For example, anxious students need a good deal of structure when they first encounter a new instructor and new material. But if they are to overcome their anxiety, they later need challenges that they can successfully overcome (McKeachie, 1995).*

While the authors of this paper are not advocating teaching to every learning style, this foundation that McKeachie (1995) recommended may be a fitting recommendation to the student whose cognitive style is dissimilar to his or her professors'. Furthermore, as Zhang (2001) concluded , an instructor's choice of teaching methods may be influenced by his or her preferred style; therefore the very structure which is implemented to assist that student may still cause anxiety. Based on Kirton's theory, however, the more adaptive student may find the structure a welcomed treat. The more innovative student who is likely to benefit from this structure, may not embrace it readily because he or she prefers to learn by breaking structural confines. Could the instructional techniques be causing students stress?

Kirton (2003) stipulated that even though motive did not influence one's preferred style of operation; it however, influenced the "direction in which effort is expended, the duration of the effort, and the extent to which importance is attached to the achievement of a current aim" (p. 95). Kirton used the term motivation to relate exclusively to problem solving, which in this study was facilitated by teaching and learning.

Kirton (2003) further asserted that motivation was contingent upon effort and time and was a psychological burden. As the dissimilarity in styles widened overtime, the effort needed to cope became more difficult for the individual and the further the distance the more motivation was needed. In relation to the expectancy value theory, the voluntary decision to cope took priority when it was determined to be the behavior which would generate the most success or when the motivation was high. If this was the case, then the effort expended to cope was easier than if it were low or the perceived value was not an important one. When motive was not engaged, or when an individual did not see the benefits outweighing the cost of coping then a person would return to his or her preferred mode.

Coping

The seminal work of Lazarus (1966) brought wide acceptance to the idea of coping, according to Tennen, et al. (2000) and as a result coping scales and other measures were developed (e.g., Billings & Moos 1981; Folkman & Lazarus 1988; Pearlin & Schooler, 1978). In the 1980's, empirical and theoretical inquiries were undertaken resulting in what is today a vast number of published studies spanning close to fifty years of work (Somerfield & McCrae, 2000).

Coping behaviors have been applied to varied areas, for example, economics, education, politics and business; however based on the literature it was extensively discussed in psychology and dominated issues relating to mental care and how individuals dealt with stress, pressure, and anxiety.

In psychology, coping was initially suggested to be a defense mechanism, however, after the contribution of Haan (1977) and Vailliant (1977) the concept was likened to a trait or style. This trait/style factor focused on personality dispositions and as Folkman, Lazarus, Dunkel-Schetter, DeLongis and Gruen (1986) illustrated in their contribution, the difference between trait orientations and process orientations is determined by the attention given to the "psychological and environmental" (p. 992) contexts in which the coping occurred. Context was essential because coping was evaluated as a reaction to the psychological and environmental burdens of particular stressful episodes (Folkman, et al., 1986). Folkman and her colleagues

insinuated that for the trait oriented approach, the stressful event was secondary to the individual. In other words, the stressful episodes did not matter much. When compared to the process oriented style, it was the psychological and environmental circumstances which had greater weight. The opposite appeared to be more factual regarding the rating allocated to coping based on the process oriented approach. For Folkman, et al. (1986) coping stemmed from behaviors and thoughts. The behavioral aspects and thought processes concerned with coping were found to be dynamic activities. The individual had to almost force himself or herself to respond to a burden which surpassed his or her ability to effectively handle. This meant that additional resources which further helped to alleviate the burden were needed; hence her definition of coping being "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141).

The literature surrounding coping seemed to be incompatible concerning the way in which the constructs were conceptualized (Rohde, Lewinsohn, Tilson & Seeley, 1990). Many of the models supporting coping behavior were derived from the landmark model developed by Lazarus (1966). Lazarus and his colleagues defined coping as one's thought processes and behavioral efforts which were repeatedly being modified or *constantly changing* so that the individual could maintain specific external and/or internal demands that were appraised as *taxing* or exceeding the resources of the person. There were a number of factors however, which may have controlled the sometimes stressful interactions caused by the difference in learning styles between professors and students in the classroom or learning environment. Carver, Sheier & Weintraub (1989) and Carver and Scheier (1994) suggested that coping was one such factor. An analysis of coping as a concept signified coverage by a number of disciplines, especially in the area of psychology.

The COPE by Carver, Sheier & Weintraub (1989) was founded on the model of behavioral self-regulation and addressed individual differences in the coping process. Carver and Sheier (1994) suggested that coping behaviors were habitual ways of responding to stress. While stress can be a positive phenomenon, it may be an experience of negative emotion (Lazarus, 1991). Lazarus contended that when an individual experienced this kind of destructive emotion, it *elicits* [elicited] mental and action-oriented efforts in order to lessen the *noxious influences*, thus dispelling the circumstance which provoked them in the first place.

Kirton's (2003) definition of coping behavior has been strongly supported by Folkman's (1991); the coping strategy required reaction, and it required a costly effort. This definition aligned with that of Lazarus (1966) and Carver and Scheier (1994). Though coping strategies have been classified into various groups, the literature on coping behaviors also indicated that a grand strategy did not exist concerning coping styles (Carver & Scheier, 1994; Kirton, 2003; McCrae, 1984; Steed, 1998) which meant that there was no one way to cope, there were hardly categories of coping which truly existed and people's reactions varied (Carver & Schier, 1994). It however maintained that most learners were behaviorally flexible particularly when they were motivated.

Do students attempt coping techniques in an effort to reduce stress? Since they cannot change their style, do they change their behavior by applying coping techniques for learning so that they can maximize their strengths in a given course and minimize their limitations regarding

their courses? As the scholars have suggested, cognitive styles are fixed (Kirton, 2003) and neither student nor teacher could make their style flexible. However, they may modify their behavior through learned coping techniques, and in essence, perform in a style outside of one's preference. Coping behaviors enabled learners to use their strengths and limitations of their styles in an optimal manner (Riding & Sadler-Smith, 1997).

The area of coping behaviors appear to be complex and research has not made clear demarcations concerning the terms coping behavior, coping technique, coping style, coping reaction and coping response. In this study they carry the same meaning and for the purpose of this study, the terms will be used interchangeably.

Academic Stress

There are many factors which have caused undergraduate students to feel stressed. These include: peer pressure, family disputes and future career choices (Alumran and Punamaki, 2008). However, if one should approach a number of college students and ask them to relate classroom instances where they experienced stress, a multiplicity of reasons and explanations may be generated: lack of time management techniques and poor time management practices such as cramming and last minute studying (Gall, 1988; Longman & Atkinson, 1988; Walter & Siebert, 1981). These confessions, among many others, should indicate that college students sometimes found their experience in academia stressful (Carver & Scheier, 1994; Folkman & Lazarus, 1988; Swick, 1987). The perspective that students took on the stressful challenges that threatened their academic pursuits may lead to outcomes which may not positively support their initial expectations of themselves.

Putwain (2007) in his assessment of the literature claimed that the concept of stress had been studied extensively in the field of psychology and that the literature has expanded in terms of *antecedents, mediators and outcomes of stress*. Nevertheless, the concept was not unified and similar to some of the other variables in this study, the definitions were not uniformed. There were various definitions for general stress. For example, it was the condition that existed when something was interfering with movement towards desired goals (or away from the anti-goals). The definition of academic stress did not exist without the general definition of stress. Stress in general can be defined as "the situation which occurs when a human being faces events perceived by them as dangerous, physically and psychologically" (Atkinson, Atkinson, Smith, Bem, & Nolen-Hoeksema, 1996). Another useful definition of stress was "when the physical and psychological limit of the organism is coerced and threatened" (Baltas & Baltas, 1996 as cited by Deniz, 2006). Altuntas (2003 as cited by Deniz, 2006) defined stress as frustrations brought about as the result of physical, mental and emotional burdens. Based on the meaning of stress, in general, academic stress occurred when individuals encountered situations in which they felt threatened physically and psychologically (Atkinson, et al. 1996). For this study, academic stress was defined as the physical and psychological threats generated from the student-instructor interaction (Gianakos, 2000).

Though studies in the area of coping in response to academic stressors have expanded dramatically, research questions were still unanswered as Friedel & Rudd (2009) observed when they examined the relationship between coping and student engagement. Similarly, Kirton

(2003) pointed out that there were problems in the field of education which were still untested. Friedel (2006) found in his study that though there were wide cognitive gap differences between student and faculty in one of his experimental groups, students reported lower levels of stress associated with higher cognitive gap differences. This result did not support Kirton's theory in full without answering another question: Could student use of coping strategies provide means to cope and diminish academic stress associated with dissimilar cognitive style? As this question presents fertile ground for further research, this study aimed at identifying relationships between dissimilar cognitive styles and coping behaviors in undergraduate students.

METHODS

Instrumentation

Both the COPE and the KAI were administered to students, while only the KAI was administered to faculty members who taught the participants of the study for the purpose of determining cognitive-style gap. Both instruments are discussed in detail as follows:

Kirton Adaption-innovation Inventory (KAI)

The preferential and distinctive difference in a person's cognitive style, which was innate and highly resistant to change (Kirton, 2003) was measured by the KAI, which is a self-report psychometric inventory. Introduced in 1976, the KAI made up of 32 statements, where subjects indicated *how easy* or *how difficult* it would be for them to behave consistently over time. A score was calculated and represented on a continuum where scores were expected to vary and as such, no individual should be characterized as purely innovative or purely adaptive; rather more innovative or more adaptive. The KAI measures, three related subscales have offered further understanding of cognitive style. These subscales are: efficiency, rule/group conformity and sufficiency of originality. *Efficiency* has been defined as one's inclination to be systematic, precise, orderly, disciplined and structured. The definition for *rule/group conformity* described risk aversion, certainty, adherence to rules and norms. The last subscale of *originality* was explained by the introduction of novel ideas and functioning outside of the established framework. The reliability estimates of the KAI indicated some strong associations: sufficiency of originality ($\alpha = .83$), efficiency ($\alpha = .76$), rule/group conformity (($\alpha = .83$) and total KAI ($\alpha = .88$), The use of the instrument was supervised by a certified practitioner.

The COPE Inventory

Carver, Scheier and Weintraub (1989), published a theoretical study, and subsequently developed the COPE inventory in which they measured different ways people responded to stress. The researchers developed five scales, each consisting of four items and which assessed specific dimensions of problem focused coping and venting of emotions. The *problem focused scales* included: active coping (taking deliberate steps to eliminate the problem), planning (creating action steps to be implemented), suppression of competing activities (individual's focus

is solely on the problem), restraint coping (individual waits on the right moment to act (Litman & Lunsford, 2009), seeking of instrumental support (demonstrated when the individual undergoing stress seeks advice from others (Litman & Lunsford, 2009)). *Emotion focused scales* included: seeking of emotional support where individuals enlist others to provide them sympathy. Rationalizing stress with more optimism is termed positive reinterpretation, When individuals acknowledge that they are having a stressful encounter, they are applying acceptance as a coping behavior. An individual in denial refuses to believe that the problem is real (Litman & Lunsford, 2009). Some persons may turn to religion or depend on their faith or religious belief to moderate the stress experienced. The last set of scales were ungrouped and included: focus on venting of emotions (expressing one's feelings), behavioral disengagement (individual gives up trying to deal with the problem), and mental disengagement (shifting focus from the issue generating the stress).

The COPE Inventory had been designed to measure a wide variety of potential responses to stressors and to differentiate between coping qualities (Carver & Scheier, 1994). It has three formats. The trait like version is used to measure an individual's dispositions or habitual reactions: the way they usually do the items listed, when that individual is stressed. Where respondents were asked to indicate the degree to which they actually experienced a response at a specific time period in the past, the situational version was used. A third version, also time limited, asked respondents to state the extent to which they had been experiencing each reaction during a period up to the present. The formats were identifiable by the verb tense used in each: present tense for the dispositional format, past tense for the situational and present tense progressive (I am trying…) or present perfect (I have been trying…) for the third version (Carver, n.d.). An additional version called the ―Brief *COPE* (Carver, n.d.), a shorter version of the *COPE* was developed basically to cater to subjects' time constraints, primarily resulting from its length. The research identified general versus situation specific scales, giving these researchers a choice between a scale that could measure a wide variety of people in a number of situations and a scale that measured specific people in a specific context. The dispositional version of the COPE, which included the updates made to the 1989 scale, was used for this study.

Sampling

Instructors were first selected and their selection was based on them satisfying the criteria for the study. Six faculty members were chosen to participate out of 21 professors at [State University] who met the researchers' criteria for the study. The inclusion criteria were set *a priori* and included the following: taught in a designated college, labeled as a 4000-level or lower course, included 25 to 50 students per class who met in a traditional classroom, and had problem-solving activities as evidenced from collected syllabi.

The first six faculty members who had the most extreme scores on both the adaptive and innovative end of the continuum were selected. Faculty members with extreme KAI scores were preferred to allow for more variance across the continuum of adaption and innovation. The student population for this study comprised all undergraduates enrolled in the previously selected classes taught by these faculty members. The accessible sample of six classes totaling 159 students represented the undergraduate sample needed for the study.

Limitations

Participation in the study was voluntary and was limited to a total of 159 undergraduate students. Though a larger sample size may have yielded more significant results, the study comprised students who were registered for undergraduate courses in the Fall 2009 semester in a specific college in the university. The university is one of the largest research-intensive public universities in the southern United States; however, only one college was represented, therefore generalizability of the results to other universities should only be within similar colleges at similar universities. Also, the COPE and the KAI, may elicit answers based on the respondent's desire to be socially acceptable in their self-reported assessments.

RESULTS AND FINDINGS

Faculty Cognitive Styles

Based on the AI continuum, instructors or students who had a lower were grouped as more adaptive (adaptors) and those with a higher score were grouped as more innovative (innovators). Therefore, professors who taught Class One, Class Three and Class Five were considered *more adaptive* and the remaining instructors who taught Class Two, Class Four and Class Six were considered *more innovative.* These classifications may foster ease of understanding in data analysis when faculty and student data are compared. Table 1 outlines the cognitive style scores of the faculty participants as determined by the KAI and tabulated by their class coding.

Table 1: Class Listing of Faculty Participants Total Cognitive Style Score (N = 6)

Constructs	Total Cognitive Style Score	Sufficiency of Originality	Efficiency	Rule/Group Conformity
Class One	64	33	14	26
Class Two	110	52	19	39
Class Three	87	50	8	29
Class Four	102	51	11	40
Class Five	73	37	13	23
Class Six	107	52	19	36
All Faculty (Mean)	91	45.83	14	32.17

Note. Table also printed in Samms and Friedel (in press). Relationship between dissimilar cognitive styles and use of learning strategies. *Academy of Educational Leadership Journal*.

Students Cognitive Styles

The total mean cognitive style for Class One student respondents was more adaptive (M = 88.65, SD = 11.43, n = 20). However, this mean deviated with a 6.35 point difference from the standardized mean of 95 (Kirton, 2003). The most adaptive students in Class One scored a 72 on the KAI and the most innovative student scored a 110. The mean for the total cognitive style indicated that the scores marginally exceeded Kirton's average of 95 (M = 97.96, SD = 10.29, n = 24) which meant that Class Two was more innovative than Kirton's standardized population by

2.96 points; the most adaptive students score 77 on the KAI, while the most innovative scored 119. The mean for Class Three (M = 94.50, SD = 12.55, n = 22) was similar to Kirton's standardized mean of 95 points; the most adaptive student scoring 72 and the most innovative scoring 119 points. The mean for Class Four was 99.25 (SD = 13.30, n = 20), which, in comparison to the Kirton's standardized average, was more innovative by 4.25 points. A score of 72 was reported for the most adaptive respondent and 123 for the most innovative student. From the students in Class Five, who completed the KAI, the mean of 90.79 (SD = 10.83, n = 24), indicated that the class was more adaptive than the general population by 4.21 points. The most adaptive student scored 70 and the most innovative student scored 110. The total cognitive style mean of 104.45 (SD = 14.56, n = 22) indicated that Class Six was, on average, more innovative by 9.45 points than the established mean of 95 points for the general population (Kirton, 2003). As tabulated in Table 2, the most innovative person in Class Six scored 135 on the KAI; while the most adaptive had had a score of 74 points.

Table 2: All Student Mean Scores of Cognitive Style Constructs by Course (n = 132)

Courses	Constructs	Mean	SD	Min	Max
Class One	Total Cognitive Style	88.65	11.43	72	110
(n = 20)	Sufficiency of Originality	39.55	5.86	29	56
	Efficiency	17.25	4.31	7	24
	Rule/Group Conformity	31.85	5.10	11	40
Class Two	Total cognitive style	97.96	10.29	77	119
(n = 24)	Sufficiency of originality	43.08	6.52	32	54
	Efficiency	19.00	5.08	10	26
	Rule/Group conformity	35.88	5.76	22	47
Class Three	Total cognitive style	94.50	12.55	72	119
(n = 22)	Sufficiency of originality	42.91	7.30	27	55
	Efficiency	17.59	3.54	9	26
	Rule/Group conformity	34.00	7.65	19	49
Class Four	Total cognitive style	99.25	13.30	72	123
(n = 20)	Sufficiency of originality	42.75	7.34	29	60
	Efficiency	19.90	3.93	14	27
	Rule/Group conformity	36.60	8.35	19	52
Class Five	Total cognitive style	90.79	10.83	70	110
(n = 24)	Sufficiency of originality	41.79	6.22	29	53
	Efficiency	17.58	4.43	10	25
	Rule/Group conformity	31.42	7.61	20	44
Class Six	Total cognitive style	104.45	14.56	74	135
(n = 22)	Sufficiency of originality	45.95	5.76	36	57
	Efficiency	19.14	4.37	11	26
	Rule/Group conformity	39.36	7.76	26	55
Class All	Total cognitive style	95.95	13.07	70	135
(n = 132)	Sufficiency of originality	42.71	6.68	27	60
	Efficiency	18.40	4.35	7	27
	Rule/Group conformity	34.83	7.75	19	55

Note. Cognitive style gap scores were calculated by subtracting students' cognitive style scores on the KAI from an individual instructor's score on the same instrument. Lower scores signified more adaptive and higher scores signified more innovative. Table also printed in Samms and Friedel (in press). Relationship between dissimilar cognitive styles and use of learning strategies. *Academy of Educational Leadership Journal*.

The mean cognitive styles gap for all students was 14.93 (SD = 10.36). This meant that from the combination of the six classes (n = 132) that were studied in a college of agriculture at a

state university in southern [State University] the average student had a 14.93 point cognitive style gap with his or her instructor. See Table 2 for findings specific to student cognitive styles.

Cognitive Style Gap

A simple computation was done to determine the cognitive-style gap between students and the faculty member who taught them. The cognitive style score of the faculty (F) was subtracted from the student (S) score (Gap = S – F). The difference in score, which was represented by a numerical value, defined the gap width, while the negative or positive accompanying sign symbolized the direction of the gap. For example, if the number were negative, this meant that the student was more adaptive than the instructor and if the number were positive, it indicated that the student was more innovative than the instructor.

Class One had the largest average style gap (M = 24.65; SD = 11.43) which implied that on average, students were 24.65 points more innovative than the faculty member who taught them. There was an eight point difference between the more adaptive student in this class and the instructor style score, while the more innovative student scored 110 which equaled a 46-point difference with the instructor's score. Cognitive style gaps of 20 points or higher between individuals' scores, Kirton (1999) noted, may result in communication and collaboration challenges. Differences are proportionate to the gap and for this class, the larger the difference, the wider the gap and the more effort and tolerance needed (Kirton, 2003) by the student to cope with the stressful encounter. Seventy-five percent of the class (n = 15, 75%) returned a style gap at or above 20 points.

The smallest average cognitive-style gap was seen in Class Six (M = -2.55; SD = 14.56). This meant that the average student in Class Six was 2.55 points more adaptive than the faculty member who taught him/her. The lowest total cognitive style gap score which belonged to a more adaptive student in the class was 74 points. Eighteen percent of students in this class had a gap score of 20 or more points compared to the faculty member's score. See Table 3.

Table 3:
All Student Mean Scores of Cognitive Style Gap Constructs by Course (n = 132)

Courses	Mean	SD	Min	Max
Class One	24.65	11.43	8	46
Class Two	-12.04	10.29	-33	9
Class Three	7.50	12.55	-15	32
Class Four	-2.75	13.30	-30	21
Class Five	17.79	10.83	-3	37
Class Six	-2.55	14.56	-33	28

Note. Table also printed in Samms and Friedel (in press). Relationship between dissimilar cognitive styles and use of learning strategies. *Academy of Educational Leadership Journal*.

Use of Coping Behavior

Regarding the coping behaviors exhibited by these undergraduate students, the possible range for the COPE instrument was 4 to 16 for each construct (Carver, Scheier & Weintraub,

1989). The higher scores in the range represented greater use of the coping strategy and the lower scores were equivalent to minimal use of the strategy. Thus for this Class One, the average student used *positive reinterpretation* (M = 11.61, SD = 3.06) in addition to *planning* which had the highest mean of 12.07 and standard deviation of 2.22, which was within that established by Carver, et al., making it the most used coping style. Other coping techniques which were most applied when students experienced great stress were: *active coping* (M = 11.15, SD = 1.82) *seeking instrumental social support* (M = 10.61, SD = 2.91) and *emotional social support* (M = 10.15, SD = 3.78). The mean for *planning* for Class One was lower by 0.51 points compared to the representative sample on the dispositional COPE for Carver, et al. (1989). On average students who least used *planning* as a coping strategy had a total score of eight points and those who exercised greater use of this response recorded a score of 16 points. See Table 4 for reported findings of coping behaviors for Class One and all other classes.

Table 4: All Students Mean Scores of Most Frequently Used Coping Behaviors by Course (n = 132)

Courses	Constructs	Mean	SD	Min	Max
Class One	Planning	12.07	2.22	8.00	16.00
n = 27	Positive reinterpretation	11.61	3.06	4.00	16.00
	Active coping	11.15	1.82	9.00	16.00
	Seeking instrumental social support	10.61	2.91	6.00	16.00
	Religious coping	10.03	4.64	4.00	16.00
	Suppression of competing activities	9.57	1.98	5.00	13.00
	Mental disengagement	9.57	2.81	4.00	15.00
	Restraint coping	9.46	1.74	6.00	14.00
	Venting of emotions	9.00	3.39	4.00	16.00
	Humor	8.84	2.85	5.00	16.00
	Behavioral disengagement	5.53	1.52	4.00	8.00
	Denial	5.46	1.67	4.00	9.00
	Alcohol/Drug/Substance abuse	4.96	2.55	4.00	16.00
Class Two	Acceptance	12.00	2.44	5.00	16.00
n = 27	Positive reinterpretation	11.61	3.06	4.00	16.00
	Humor	11.38	2.54	7.00	16.00
	Planning	11.34	2.05	7.00	15.00
	Active coping	11.03	2.18	6.00	14.00
	Seeking instrumental social support	10.53	2.84	4.00	15.00
	Seeking emotional social support	10.03	4.26	4.00	16.00
	Restraint coping	9.96	2.82	5.00	16.00
	Mental disengagement	9.57	2.81	4.00	15.00
	Suppression of competing activities	9.57	1.67	5.00	13.00
	Venting of emotions	8.96	2.97	4.00	16.00
	Religious coping	8.92	4.14	4.00	16.00
	Behavioral disengagement	6.96	1.50	4.00	10.00
	Alcohol/Drug/Substance abuse	6.88	3.01	4.00	15.00
	Denial	5.80	2.03	4.00	11.00
Class Three	Positive reinterpretation	12.40	2.72	7.00	16.00
n = 32	Planning	12.00	2.22	8.00	16.00
	Religious coping	11.81	4.61	4.00	16.00
	Active coping	11.40	2.19	4.00	16.00
	Acceptance	11.37	2.22	6.00	12.00
	Seeking instrumental social support	10.37	2.88	4.00	16.00
	Seeking Emotional social support	10.06	3.18	4.00	16.00
	Restraint coping	9.96	2.70	4.00	15.00
	Mental disengagement	9.68	2.52	7.00	16.00
	Suppression of competing activities	9.37	1.60	4.00	16.00
	Venting of emotions	9.21	3.29	4.00	16.00
	Humor	8.87	3.20	4.00	16.00
	Behavioral disengagement	6.15	2.34	4.00	16.00
	Denial	5.68	2.52	4.00	15.00

Table 4: All Students Mean Scores of Most Frequently Used Coping Behaviors by Course (*n* = 132)					
Courses	Constructs	Mean	SD	Min	Max
	Alcohol/Drug/Substance abuse	4.40	3.16	4.00	16.00
Courses	Constructs	Mean	SD	Min	Max
Class Four	Positive reinterpretation	12.86	1.69	9.00	15.00
n = 22	Acceptance	12.09	1.99	8.00	15.00
	Planning	11.77	2.09	8.00	16.00
	Actie coping	11.40	1.79	8.00	16.00
	Humor	11.09	2.85	5.00	16.00
	Seeking instrumental social support	10.77	2.97	6.00	16.00
	Mental disengagement	10.50	2.57	6.00	15.00
	Restraint coping	10.18	2.44	7.00	15.00
	Seeking emotional social support	10.04	3.24	4.00	15.00
	Suppression of competing activities	9.40	1.46	7.00	12.00
	Venting of emotions	8.40	3.22	4.00	16.00
	Religious coping	7.63	4.00	4.22	15.00
	Behavioral Disengagement	6.54	1.92	4.00	11.00
	Alcohol/Drug/Substance abuse	6.04	2.83	4.00	16.00
	Denial	5.45	1.89	4.00	9.00
Class Five	Positive reinterpretation	13.11	1.76	9.00	16.00
n = 27	Planning	12.18	1.98	8.00	16.00
	Seeking instrumental social support	12.14	2.91	4.00	16.00
	Religious coping	12.00	4.21	4.00	16.00
	Seeking emotional social support	11.92	2.98	5.00	16.00
	Active coping	11.48	2.10	9.00	16.00
	Acceptance	11.37	2.67	6.00	16.00
	Suppression of competing activities	10.40	1.98	6.00	15.00
	Mental disengagement	10.29	2.43	6.00	16.00
	Venting of emotions	10.22	3.28	4.00	16.00
	Restraint coping	10.14	2.98	4.00	16.00
	Humor	8.66	3.25	4.00	16.00
	Behavioral Disengagement	6.18	1.49	4.00	10.00
	Denial	5.96	1.67	4.00	9.00
	Alcohol/Drug/Substance abuse	4.62	1.77	4.00	12.00
Class Six	Positive reinterpretation	12.91	2.22	8	16
n = 27	Planning	12.04	2.74	5	16
	Acceptance	11.37	2.41	7	16
	Active coping	11.04	2.29	6	15
	Seeking instrumental social support	10.91	3.17	6	16
	Humor	10.33	2.82	6	16
	Restraint coping	10.33	2.47	6	15
	Seeking social emotional support	10.25	3.17	5	16
	Mental disengagement	9.91	2.14	5	14
	Religious coping	9.37	4.73	4	16
	Suppression of competing activities	9.08	2.43	5	14
	Venting of emotions	9.04	2.95	4	16
	Alcohol/Drug/Substance abuse	6.66	3.53	1	16
	Behavioral disengagement	5.91	1.52	4	9
	Denial	5.29	1.87	4	11

Note. Coping behavior was measured with the COPE using 60 items with standardized constructs. Possible range: All constructs (4-16). Coded: higher scores are equivalent to greater use of coping strategies and lower scores are equivalent to lesser or minimal use of coping behaviors.

Of the 27 students in Class Two who took part in the study, an aggregate of 26 students specified that *acceptance* (M = 12.00, SD = 2.44) was the strategy which they used to cope with the effects of a stressor. The average student in Class Three implemented *positive reinterpretation* (M = 12.40, SD = 2.72) as the preferred coping strategy when he or she were faced with a stressful occurrence. A*lcohol, drug, and substance abuse* (M = 4.40) was least used by this class of students, when they exercised coping behaviors. Of the 22 students in Class Four, students respondents (M = 12.86, SD = 1.69) specified that *positive reinterpretation* was the

behavioral strategy which he or she used to cope with the effects of a stressor. *Denial* was least used by the students of Class Four.

Class Five students on average, mostly implemented *positive reinterpretation* (M = 13.11, SD = 1.76) as the preferred coping strategy in an effort to inhibit the stress experienced in the course. Though the mean for *planning* reflected that most students used it to absorb the effects of a stressful situation, the data also suggested that seeking *instrumental social support* (M = 12.14, SD = 2.91) was a strategy used by a large number of students in Class Five. The least used coping technique was *alcohol/drug/substance abuse*. *Positive reinterpretation* (M = 12.91, SD = 2.22) was the preferred coping strategy applied for the students in Class Six, when faced with a stressful occurrence. Though *positive reinterpretation* reflected the highest mean of 12.91 (SD = 2.22), *planning* (M = 12.04, SD = 2.74) was found to be another strategy which most students used.

Cognitive –Style Gap and Coping Behavior

Correlations among the variables were explained using the Davis Convention (Davis, 1971). This guide for interpreting the strength of the correlation suggested a .10 to a .29 was a low association, a .30 to a .49 was a moderate association, a .50 to a .69 was a substantial association, and above a .70 or higher was a very strong association. The correlations that have been discussed subsequently were those which are of a moderate association with another variable and where Pearson r was equal to .30 or greater.

For Class One, moderate relationships were found between total cognitive style gap and constructs of coping, for example *restraint* ($r = .32$, $p > .05$) and *denial* ($r = .34$, $p > .05$). Though none of these correlations were significant, noteworthy are the negative correlations between *total gap* and *instrumental social support* ($r = -.42$, $p > .05$) and *total gap* and *emotional social support* ($r = .42$, $p > .05$). As gap increased *instrumental social support* and *emotional support* decreased. The findings for Class Two suggested a number of insignificant correlations ($p > .05$) that ranged from 0 to .35 (*behavioral disengagement* ($r = .32$), *restraint* ($r = -.31$) and *acceptance* ($r = .35$)) indicating a low to moderate relationship; except for one case where the data pointed to an inverse, significant relationship ($r = -.45$, $p < .05$) between total gap and the coping behavior, *planning*.

Significant relationships were in found in Class Three with total gap and the construct of *substance abuse including alcohol and drug abuse.* For this relationship, there was a .44 ($p < .05$) correlation. The other positive and significant relationships that were found with total cognitive style gap included *positive reinterpretation ($r = .44$, $p < .05$), active coping ($r = .54$, $p < .05$), religious coping ($r = .47$, $p < .05$)* and *help seeking ($r = .48$, $p < .05$).* All were moderate. A positive, substantive and significant correlation ($r = .53$, $p < .05$) existed between *total cognitive style gap* and *substance abuse* in Class Four. The association between p*lanning* ($r = .52$, $p < .05$) and cognitive gap was also substantial according to Davis (1971). Other correlates of cognitive style gap and which demonstrated moderate relationships with coping, though insignificant, were *positive reinterpretation* ($r = .35$, $p > .05$), *mental disengagement* ($r = -.42$, $p > .05$) and *denial* ($r = .34$, $p > .05$). Total cognitive gap correlated significantly, moderately but

negatively with *religious coping* (r = -.40, p < .05) for Class Five. Total cognitive style gap correlated significantly and moderately with *restraint* (r = -.41, p < .05).

Table 5: Correlations Between Cognitive Style Gap and Coping Strategies (N = 129)

Coping Techniques	Class One n=16	Class Two n=23	Class Three n=22	Class Four n=20	Class Five n=24	Class Six n=24
Positive Reinterpretation	0.29	-0.10	0.44*	0.35*	0.27	0.03
Mental Disengagement	-0.12	-0.05	0.10	0.42*	-0.27	0.03
Venting	-0.19	-0.10	0.01	0.06	-0.12	0.10
Instrumental Social Support	-0.47	-0.21	0.22	0.09	-0.05	-0.16
Active Coping	0.06	-0.21	0.54*	0.26	0.02	-0.20
Denial	0.34	0.15	-0.25	-0.34*	0.20	0.02
Religious Coping	0.13	0.01	0.47*	-0.07	-0.40*	-0.15
Humor	-0.04	0.13	0.07	0.00	-0.08	-0.12
Behavioral Disengagement	-0.03	0.32*	-0.01	-0.07	0.00	0.33*
Restraint	0.32	-0.31*	0.28	0.19	-0.12	-0.41*
Emotional Social Support	-0.42	-0.09	0.21	-0.13	-0.11	-0.21
Substance Abuse	0.06	-0.19	0.44*	0.53*	-0.18	-0.01
Acceptance	-0.29	0.35	0.05	0.29	-0.07	0.02
Suppression of Competing Activities	0.05	0.06	0.25	0.04	0.13	-0.18
Planning	0.07	-0.45*	0.28	0.52*	0.04	-0.16

Note. * $p < .05$

CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

Stressful encounters resulting from cognitive-style gap was not indicative of students not doing well academically. Student performance related to learning was beyond the scope of this study, but finding from this study may provide insight for researchers interested in investigating student achievement oriented variables. Because of the numerous factors which influence student learning, like response to varied teaching methods, motivation, attitude towards learning, ability or disability and learning environments, educators and researchers should not interpret causation from these findings. Additional research and higher level statistical analysis would be needed to produce evidence of this.

Kirton (2003) claimed that as individuals encountered problems, prior experience caused them to respond with the solutions they have used before. That meant that the technique with which they responded was stored and recalled for future utilization. When individuals experienced the process of applying various learned techniques of coping, they may be positioning themselves to be more tolerant individuals, overtime. Because coping is learned behavior, a person may not have to stop to think which strategy to implement, but automatically react. If the same rationale were applied to enduring a learning environment where the instructor‘s learning style differed from the student‘s, every new situation may trigger the desire to learn a new way of coping. Each novel situation may call for a new coping behavior and overtime the student may be building his or her knowledge and ability to solve problems

regardless of the cognitive gap. The cognitive resource could be expanded and the student would benefit because he or she has learned how to learn and can operate in other environments where dissimilarities were present.

With the negative correlations which were found in Class One between *total gap* and *seeking instrumental social support*, as well as *total gap* and seeking *emotional social support*, It can be inferred that the more innovative students were less likely to be associated with both *seeking instrumental social* and *seeking emotional social support*. This also meant that the more adaptive student were associated with more *social* and *emotional support* of this adaptive teacher. The evidence suggested that the more innovative students in Class One were exhibiting emotional coping mechanisms, and not problem solving mechanisms to cope with the more adaptive instructor.

For Class Two as total cognitive gap increased for the more adaptive student, *planning* decreased, based on the negative, significant relationship ($r = -.45$, $p < .05$) between *total gap* and the coping behavior *planning*. It may be inferred from this inverse relationship that the instructor may have been organizing for these students, which may have included outlines and guidelines in answering questions; the instructor may have structured the course for them and they did not have to exhibit too much coping behavior.

For Class Three students, as the cognitive gap increased for both the more adaptive and the more innovative students, there was an association with *active coping*, a problem-based coping strategy, as well as *substance abuse* and *religious coping*, emotional based coping strategies. In Class Four, the data suggested that as students became more adaptive, there was an association with more *substance abuse,* and *planning.* For this class, for both the more adaptive and the more innovative, a larger cognitive style gap was associated with more coping. These relationships indicated that students in this class may have bridged the cognitive style gap through coping techniques.

In Class Five, as cognitive gap widened for both the more adaptive and the more innovative, associations were found with less *religious coping.* Students may have been using less *religious coping*; but nevertheless may have been bridging the gap by rationalizing it in a more constructive sense (*positive reinterpretation*). Findings from Class Six indicated that the larger gap for the more adaptive and the more innovative was associated with less *restraint* utilized by the students, but more *behavioral disengagement*. That is, students may not have been bridging the cognitive style gap through the use of coping techniques; but may have been less engaged in learning or given up on the course, owing to this larger cognitive style gap. Instead of focusing on learning the course material and applying ways of overcoming the cognitive gap, students in Class Six may have been exhibiting higher tolerance level and at the same time passing the time until they could withdraw from, or drop the course.

Cognitive style research may be classroom specific based on the findings of this study as each class provided evidence of cognitive style gap having relationships with coping techniques. The findings have provided evidence that there may be other intervening variables that determine the applicability of AI theory in these undergraduate courses. Friedel and Rudd (2009) found the same when examining dissimilar cognitive style and student engagement; in which they speculated that this intervening variable may be the instructor's ability to motivate students to bridge the cognitive style gap for the purpose of learning. Likewise, the researchers in this study

found that in some classes, there was an association with larger cognitive style gaps and with more coping.

Cook and Heppner (1997) indicated that research literature oversimplified the definition of coping reactions by limiting them to problem-focused and emotional-focused responses. Although the items noted on the questionnaires appear broad, a qualitative study could investigate other and more specific coping behaviors and address the how and why these coping behaviors are employed.

Research as well as anecdotal evidence suggested that as human beings we have encountered stressful situations whether or not we knew that these situations were occurring. The information presented in this paper, although not generalizable to other classes, may present knowledge to various level of schools, colleges and universities as well as the world of work.

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CULTURAL IMPACTS ON SAUDI STUDENTS AT A MID-WESTERN AMERICAN UNIVERSITY

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ABSTRACT

The number of Saudi students studying in the United States quintupled from 3,035 students in 2005 to 15,810 students in 2010 due to a fully funded Saudi government scholarship (Open Doors, 2010). As students originating in a cultural background differing from the prevailing principles of their higher education institutions, Saudi students face several challenges. The cultural challenges are one of the most frequently apparent among these challenges (Constantine, Okazaki, & Utsey, 2004; Miller, 2002). Building upon the relationship between the cultural beliefs and student academic achievement, this study aimed at examining the cultural aspects of the increased presence of Saudi students enrolled in the various academic programs at a Mid-Western research university, Riverside State University, a pseudonym. The study followed the qualitative method for data collection and analysis. After conducting initial site observations and document reviews, primary data were collected from open ended interviews with students, administrators, and professors at the university. Study findings revealed various cultural implications arising from the continuous increase of Saudi students on American higher education campuses. The cultural construct was shown to have several subsequent aspects including: transition, academic life, and social life. University support systems were explored to demonstrate a replicable model that can be adopted to ease the cultural adjustment of these students. Recommendations demonstrate how various techniques can be utilized to increase Saudi students' engagement for academic success.

INTRODUCTION

The increased presence of a unique group of international students enrolled in the various master programs in the college of education attracted our academic and professional attention. Although the literature available at the time did not address the phenomenon, a quick review of the 2007 media reports and national statistics of international enrollment revealed a surge in the numbers of Saudi students enrolled at American institutions due to a fully-funded Saudi government scholarship that sends students to American universities to obtain graduate or undergraduate degrees (Institute of International Education, 2007). This confirmed the value of informed and structured research. We conducted an exploratory case study involving two Saudi

students, one administrator, and one faculty member. The study revealed that different aspects of the cultural construct are central to this group of students while studying in the United States.

RATIONALE OF THE STUDY

American higher learning institutions have witnessed an increasing influx of Saudi students since 2005 as compared to their numbers in previous decades (Institute of International Education, 2007). The academic year 2009-2010 has been a peak year for international students' enrollment in the United States with Saudi Arabia ranking tenth among the countries of origin of international students for the first time with 12,661 students (Open Doors, 2009). The presence of this growing student group on American campuses has significant implications for student affairs professionals, college professors and university administrators. Saudi students are experiencing circumstances different from other international students due to distinctive economic, academic, psychological, social, cultural, religious, and political factors (Miller, 2002). At RSU, Saudi students represent one fourth of the international population on campus comparable to Chinese and Indian students (Office of International Programs, 2009). In this article we explore one aspect of this phenomenon at RSU concerning the cultural construct of a sample of these students and its influence on their academic and social performance.

Scholars have addressed social, economic, and academic issues related to international students. Recently, researchers began investigating international students' adjustment patterns, linguistic problems, campus involvement, and academic achievement (McClure, 2007; Poyrazli & Grahame, 2007; Wang, 2004). Though not fully comprehensive, a limited number of studies examined the cultural aspects regarding international students (Constantine, Okazaki, & Utsey, 2004; Wang, 2004). The current study, therefore, comes as a logical step considering the scarcity of studies of cultural constructs and the increasing Saudi student presence as part of the international student body on American campuses. Findings of the study reveal several essential aspects that can be helpful to stake holders of higher education in accommodating Saudi students.

PURPOSE AND RESEARCH QUESTIONS

As cultural constructs impact student success in colleges, this study explores cultural constructs of a group of Saudi students studying for a college degree in the United States in an effort to explore the multifaceted dimensions of their cultural background and the measures that can address their adjustment challenges to maximize success and benefits from their college experience. The study also offers a deeper understanding of the psychological alienation created by their presence outside their zones of comfort. Related to academic achievement, the patterns of cultural behaviors influencing these students while pursuing their degrees will also reveal rarely visited areas unique to the Saudi case. The research aimed to discover: 1) what Saudi

students expect when applying to RSU and the extent to which they perceive their expectations were met, 2) what perceived challenges faced these students, and 3) the effectiveness of support systems employed by RSU with respect to easing the adjustment of these students and providing them with necessary college survival skills.

LITERATURE REVIEW

Student affairs divisions at American higher education institutions have been successful in accommodating diverse categories of students and helping them succeed in their quest for knowledge and learning (Thelin, 2004). The Saudi students' situation adds several constructs to the situation. Notwithstanding being Muslims and from the Middle East, they are raised in a highly collectivistic society known for its strict rules and close adherence to its traditions (Prokop, 2005). The religious values present in various life aspects in Saudi Arabia are strongly challenged with the absence of the religious role in the American educational setting (Thani, 1987).

Student Affairs and Internationalization

Aware of challenges that face international students, college administrators and academic departments often initiate support systems to help these students adjust to their new context and achieve their desired educational goals (Hayes & Lin, 1994). On the classroom level, the instructors' understanding and encouragement together with the application of cooperative learning strategies were found to help ease adjustment problems (Wang, 2004). Departmental awareness of the problems facing international students was examined to help in the academic and social adaptation of international students (Jochems, Snippe, Smid, & Verweij, 1996). On the institutional level, a system of mentors providing intensive coaching for international students during their first year ,together with programming that targets the inclusion of international students and improves their interpersonal relationships with domestic students was helpful (Hechanova-Alampay, Beehr, Christiansen, & Van Horn, 2002; Lacina, 2002; Lee & Rice, 2007). Institutions also should articulate the guidelines concerning working with international students in a way that raises the awareness of all persons involved in the educational setting (Misra, Crist, & Burant, 2003). Increasing the effectiveness of orientation programs to address the variety of the aforementioned challenges was suggested as one possible technique to help these students cope with the new environment.

Engagement and Inclusion

The friendliness of campus climate and the welcoming gestures to all students with the elimination of fear, oppression and stereotype threats have been established as an important

factor in easing student adjustment and consequently supporting optimal student development and positive college outcomes (Upcraft & Schuh, 1996). Keup (2006) also concluded that student affairs professionals should endeavor to create a campus environment that is loaded with meaningful as well as inspirational content in the curriculum. Keup (2006) also argued for dedicating resources to improve students' satisfaction, setting high expectations of student performances, initiating structures that help students study, and encouraging their collaboration and discussion of academic knowledge outside of the classroom. Among the factors that influence students' satisfaction are classroom experiences, friendships, and social activities which increase students' sense of belonging and willingness to persist in college (Strauss & Volkwein, 2004). Gloria and Ho (2003) argued that the strength of the social support elements like comfort in the college environment, social relationships, peer support, and students' self-beliefs are predictors of student success, college satisfaction, and academic persistence.

Collectivistic and Individualistic Cultures

Culture refers to a group of shared beliefs, attitudes, values, and practices that bring to life shared meanings and the frame of references of a certain human group. Different cultures were often classified on the collectivistic or the individualistic continuum (Triandis, 1994). This continuum was often used to conduct cross-cultural studies focusing on individual perceptions of self, roles in society, importance of goals, individual and collective identity, measures of success, and individual gains (Hofstede & Bond, 1984; Hui & Triandis, 1986; Waterman, 1984). Triandis (1994) defined collectivism as a group of conceptions, beliefs, attitudes, behaviors and values tied toward one's own specific group of people linking one's bonds to a range of social concerns specific to that group. Interdependence and concerns of other group members' needs and interests ensures the presence of a strong social support and intensify senses of belonging (Ma & Schoeneman, 1997). An excess of the sense of sameness and similarity fortify the boundaries collectivists set between themselves as a group and members of other groups as well as increase the in-group bonding (Caldwell-Harris & Aycicegi, 2006; Hui & Triandis, 1986). Individualistic cultures emphasize personal autonomy, independence, self-realization, individual initiative, privacy, and individual decision making (Darwish & Huber, 2003). Therefore, individuals in individualistic cultures are motivated by their personal goals and gains (Ma & Schoeneman, 1997). Their interactions with others are governed by clear exchange relationships that are built on equity and allow emotional detachment (Waterman, 1984).

Due to the amount of behavioral pattern restrictions which the society places on its individuals, the learning styles of college students differ according to their culture of origin (Ma & Schoeneman, 1997). In collectivistic societies, the students should receive knowledge from the teachers who embody the role of potential sages (Pak & Sands, 1996) while students' individual insights are not valued because learning and teaching is a responsibility for the good of the collective (Pak & Sands, 1996). On the other hand, students in individualistic societies are

responsible for their own learning where some instructors act as guides to knowledge rather than experts in the discipline. Institutions in individualistic cultures provide the learning environment where students can self initiate learning and get personally engaged in a self directed quest (Ma & Schoeneman, 1997). When placed in a culture that is on the far end of the individualistic-collectivistic continuum as opposed to their culture of origin, college students with collectivistic characteristics showed depression, anxiety, obsessive–compulsive disorder and dependent personality traits (Youn, 2000).

Challenges for International and Saudi Students

When placed in their foreign educational institution, international students usually face challenges due to transition. These include: 1) finding accommodations and day to day life necessities, 2) acquiring academic skills and learning techniques, and 3) familiarizing and engaging themselves with college social aspects (Choi, 2006; Constantine, Anderson, Berkel, Caldwell, & Utsey, 2005; Kagan & Cohen, 1990). Experiencing greater difficulties than their American domestic peers, international students need tailored academic help and face specific social and psychological distress while settling in the United States for the first time (Barratt & Huba, 1994; Hayes & Lin, 1994; Poyrazli & Grahame, 2007). Linguistic difficulties have been highlighted by various scholars as important factor influencing the adjustment of international students during their early years (Channell, 1990; Elsey, 1990; Hechanova-Alampay, et al., 2002).

Saudi Arabia ranks high in the collectivistic category because countries that demonstrate a high degree of clinging to traditional customs and social values are considered collectivistic (Long, 2005). Therefore, Saudi students are expected to demonstrate high collectivistic behaviors that shape their conceptualization of the relationship with others both within their own group and outside of their group (Caldwell-Harris & Aycicegi, 2006). Such conceptualization influences their understanding, feelings, and reactions towards their situation in the United States as highly collectivist individuals placed in a very individualistic society. Possessing an orientation that is incongruent with societal values may represent a risk factor for individuals (Caldwell-Harris & Aycicegi, 2006). Differences between the individuals' type and the society in which they live can produce various influences on those individuals with dependent personalities, especially their behaviors like social anxiety, obsessive–compulsive disorder and various types of depression (Darwish & Huber, 2003). Moreover, students from collectivistic cultures lack the requisite skills to make new friends outside of their group (Pak & Sands, 1996). Therefore, the case of Saudi students coming from a highly Middle Eastern collectivistic culture presents several constructs that add to the complexity of the case, the challenges they face, and the necessity for institutions to address these challenges to ease these students' adjustment and increase the possibilities of their success.

METHODS

We utilized qualitative research tools to explore the cultural beliefs of degree pursuing Saudi students at RSU and how they influence students' academic achievements, college engagement and social acculturation. Document reviews, field observations, and in-depth interviews were utilized. Three sampling strategies increased the objectivity of research findings: typical case, snowball, and information rich case (Paton, 2001). International students at RSU account for almost four percent of its total student population which provides a variety of circumstances enriching the case studied.

Participants

Participants included two college professors, two college administrators, and five male and three female Saudi students. The students were recruited through the professor and administrators recommendations as active and reflective students. Except for the eight Saudi students, other participants were involved directly in teaching or coordinating educational services targeting Saudi students. All Saudi participants spent more than a year in the United States and had to start with English language courses to get full admission into their academic programs. Their ages ranged between 20 to 27 years old. Various categories of Saudi students were represented in the study. Salwa studied for a master degree in educational instructional technology. Feras began the course work for the masters in civil engineering. Jehad was an undergraduate student of business administration. Zeyad was a junior majoring in communication technology. Ahmed was a sophomore majoring in technology. Hanan was a freshman majoring in information technology. Rabie was a doctoral political science student. Fadila, unscarfed, was a graduate student pursuing a master in public administration. John, a full professor in the Department of Communication, taught cross cultural communication techniques. MaryAnn taught three Saudi students at the College of Education last year. Theresa, a university administrator, was very involved with programming, coordination and advising for international students. Richard worked as the English Language Institute director.

Data Collection and Analysis

After obtaining the Institutional Review Board approval, we conducted field observations of activities targeting international students and reviewed relevant documents issued from the Office of International Programs. The primary data source for this study was the 12 one-hour open-ended individual interviews conducted during the fall of 2009 with the twelve participants. Participants responded to a topical interview protocol eliciting their feelings, emotions, and experiences at RSU during the fall, spring, and summer semesters of 2008/2009. The several components of cultural constructs explored by the interview questions included influence of the

culture of origin, cultural challenges, transition, social life, and support systems available at RSU. After transcribing the responses, the data were coded and categorized within an emergent framework of relevant themes.

During the data collection, coding, and analysis, trustworthiness was ensured through triangulation and long-term observation. Triangulation was achieved through varying the data collection tools including document reviews, observations and interviews. Done over three consecutive semesters, long-term observation ensured the study's thoroughness covering a calendar year range of activities that coincided with different occasions and seasons. Open and fair solicitation of participants and an understanding of their cultural beliefs, roles, and reactions to the case at RSU ensured the authenticity of data. Member checking and participants' feedback also asserted that the data are dependable and reflective of the real dimensions of the case.

FINDINGS

Saudi students in the U.S. come from a society that praises the collective aspects of individuals. This is why "administrators at RSU try to involve Saudi students in several activities", says Theresa. Other than the academic services for international students like international academic advising and Student Success Seminar, RSU offers various social and cultural programs that target international students in general like Around the World Party; International Education Week Showcase with dance, food, and culture; Cross Cultural Dialogue; Conversation Partner Program; Conversation Group for International Women; and Summit International Friendship with the First Weeker Program, Host Family Program, and International Speakers Service. Other programs also target Saudi students either specifically or as part of the larger Muslim students on campus like Saudi Arabia days, collective dinner (*Ramadan Iftar*), Eid (Feast) Party, and swimming for Muslim women.

Culture

As collectivist individuals, Saudi students look carefully at what the entire student body, professors, and professionals at RSU think about them. They do not view it on a personal basis but as something that will speak about their group in the United States, their country, and their religion. Ahmed says, "… I care a lot about how Americans would look at me. We have the responsibility for our country and religion. If I do something wrong, they will say Saudi are bad or Muslims are not good. I think we represent Islam while we are here". Mary Ann sensed that feeling while advising some of her female students. "I felt so much pressure from their culture and religion. Not imposed on them… but I felt that they chose this pressure. They always feel they are the ambassadors of their country and religion," she says.

When it comes to offering help to other group members, Saudi students think of their responsibility to serve and support as something that is essential in their lives. It is not something

that is imposed on them as a Saudi or as Muslims, but rather an inherent characteristic in which they believe since the early years of their lives. "I tried to help any Saudi students and I asked the secretary of the ELI to give my name and phone number to any other Saudi student that she thinks might need help," says Ahmed. "I also try to help other Saudi women in the program by passing my notes from the previous semester to them. Sometimes, these notes are helpful," says Salwa. While these responsibilities appear as extra pressure on Saudi students while studying in a foreign country, they are valuable because they insure a strong support system that is always there for any group member who might need help. "And you know, sometimes another person will help me as well," says Salwa. Some students stated that they actually enjoy these responsibilities and take pride in helping others as something encouraged by their religious values.

The collectivistic thinking of Saudi students gets them to think of themselves as a group rather than a number of individuals. Such consideration, though positive in nature, fortifies the boundaries between the Saudi students as a group and the rest of the student body at RSU. Ahmed states,

> If I hang with other students, they are usually Saudi. They are a lot here now. I did not expect to see many of them and they were not as much when I arrived. I feel more comfortable with them than with American friends. We speak the same language and talk about the same things.

Another difficulty that Saudi students experience is making new friends with American students. The degree of connectedness of Saudi students sometimes hinders their ability to socialize and build new social relationships outside of their group.

The same collectivistic culture of Saudi students has a great influence on their reactions to the educational system at RSU. It also shapes the process of their decision making when trying to find the correct path through their college experience. Salwa says, "We ... have to read on our own and even choose topics to study by ourselves. There so much responsibility placed on us. I did not have this experience before." Saudi students often voice that fact in their advising appointments or in discussions with American peers. Mary Ann discovered that and says, "It is very interesting how these students as graduate students cannot choose for themselves when it comes to choice of classes, assignment topic choices, or roles in a group project. They usually want somebody else to choose for them which is not expected at that level, these are graduate students."

Although the placement of Saudi students as collectivists in a highly individualistic society like the United States seems very challenging and presenting difficult obstacles for these students, some students find it beneficial. They enjoy the freedom it provides them. Salwa reflects,

> I haven't seen anything that can upset me [here]. I feel more freedom here than in Saudi Arabia. Yes, I live a better life with servants and drivers but here I can … I have been driving since the second month I came here. There is no obligation for me to wear my veil.

Challenges and Support Systems

Saudi students at the American institution face different challenges connected with their transition from their original educational system to the new educational environment. Such transition challenges are always coupled with the difficulties they encounter in participating in the social life inside and outside the institution. However, many more challenges face them while participating in the academic life with all its related educational activities. In facing these challenges, Saudi students may develop strategies to cope with different psychological influences they experience while in their new situation to achieve their goals. At the American institution, various support systems are offered to Saudi students from many levels to help them achieve their educational goals.

Transition

Saudi students expressed a large number of transitional experiences connected with their study in an American institution. The degree to which this transition experience may influence the performance, adaptation, and success varied from a student to another. "I was totally frightened from what may come my way in America. You know the wars are still going on in the Middle East and things happen," says Ahmed. Salwa says the same, "when I finished the first class, I went to my husband and I was strongly shaking. I said this was not my imagination about the American students. It was a fear to the extent that I said I am done. I will go back." But positive transition experiences are also there. "I still cannot forget the advisor's welcoming words during orientation. I was afraid as a male coming from Saudi Arabia. But her words made me assured that I can be safe as long as I mean no harm. I felt even more than welcome as if I was a guest not a student studying in a foreign country," says Ahmed. Gender, as one of the most influential factors, is included among the various elements responsible for these differences where Ahmed's reaction differs from Salwa's reaction to the same situation.

Academic and Social Life

Saudi students are not always underprepared academically for their program of study at RSU. In fact, the Saudi higher education system offers them a good opportunity to master their field of study during their early college years when they start taking classes in their specialization from the first year of college. Mary Ann says, "If you look at the amount of

achievement in their writing, these students definitely got the fact and the knowledge, I mean the book knowledge. But with better communicative skills preparation, they would show exemplary practices. They would really be outstanding students." However, their academic preparedness is always questioned by their professors. One reason is their language proficiency. At RSU, like any other American institutions, Saudi students encounter text books that are written in English, which is also the language of classroom instruction. If their language proficiency level is low, then it is expected that their academic performance will be influenced. Mary Ann understood this fact quickly based on previous experiences with Saudi students.

The opinion of Saudi students themselves varied concerning their academic preparedness for their study at RSU. Some of them thought that the amount of English language training should be extended for more than two semesters to better prepare them for their academic study and especially the amount of reading required for each class session. "I usually have nothing to do after classes. I am at home reading with the dictionary in my hands. I understand the reading but it is difficult for me to report it again in English. ... I always have a problem when completing the reading before classes," says Ahmed. It is also indicated that their ability to engage in class discussions hinders the amount of active participation in the classroom. Mary Ann says, "Once I started getting their written assignment, I reconsidered their participation grades because I understood that they might have a problem as a group in participating orally in the class. From the quality of their written assignments you can say that they have the content perfectly well but they lack the oral or the social skills."

Social Life

Saudi students' participation in the American social life is very limited due to different reasons. Among these reasons, religion, alienation, gender, and dietary restrictions are the most prominent. "I cannot go to any place without my husband or brother. …I cannot usually accept social invitations … because I do not know what might be happening there. I do not drink too. It is against my religion," says Salwa.

CONCLUSION AND IMPLICATION

Culturally, Saudi students in the study might need to better understand the mechanisms in place at American colleges and in the American society in general. Consequently, their performance and resentment to participate in college life may be positively influenced. Saudi students in the study showed a perceived responsibility as representatives of their religion, region, and country. Understanding that their actions are interpreted as representing them as individuals rather than their collective group, Saudi students should reconsider the idea that they are representative of their whole country, religion, or region. In this respect, multicultural seminars, workshops, and classes may be helpful if integrated as part of their college programs.

Saudi students in the study needed the encouragement to engage outside their group as a way to increase their immersion in the American college life as well as maximizing their learning. Programs such as the Intercultural Dialogues and Conversation Partner should be duly introduced with full publicity to be known to Saudi students who should be highly encouraged to participate for their own benefits.

Saudi students in the study demonstrated little understanding of the rules and regulations governing student conduct, social interactions, and communication norms (Kher, Juneau, & Molstad, 2003). Saudi students' perceptions about their ability to choose between alternatives should be targeted during activities of the Freshman Seminars. Such activities can focus on developing their decision making techniques and improving their critical thinking skills. The freedom which American lifestyle offers to Saudi students may be utilized as a motivating factor for them to excel in college and persist toward degree attainment at the American institution.

Like other international students, Saudi students face different challenges while studying at the American institution due to transition, the difference in academic practices, and the unfamiliar social life (Choi, 2006; Constantine, et al., 2005; Kagan & Cohen, 1990). Their transition faces social, political, cultural, academic, and linguistic barriers. College administrators and academic departments usually initiate support systems to help these students adjust to their new context and achieve their desired educational goals as well (Hayes & Lin, 1994). Advisors and orientation leaders can play an essential role in easing these transitional obstacles. Several social and community groups can also be supportive of these students when they first arrive at the American institution. Because collectivistic individuals share the feelings and concerns of the group and care for the needs of other in-group members, utilizing other Saudi students is another successful mechanism that can be effective building on the fact that they like to offer help to other group members (Iyengar, Lepper, & Ross, 1999).

Difficulties with classroom participation are major factors in the academic experience of international students (Wang, 2004). Academic responsibilities and assignment are sometimes challenging especially when Saudi students in the study lacked the needed linguistic mastery. Increasing group and pair work in the classes is one technique for increasing both linguistic and academic levels. Programs that encourage collaborative and cooperative learning strategies can help them acquire such skills and maximize their learning experiences. Therefore, initiating learning communities and study groups may be other beneficial techniques that can help Saudi students through getting them to practice their language within the jargon of their academic topic because linguistic difficulties represent an important factor influencing the adjustment of international students during their early years (Channell, 1990; Elsey, 1990; Hechanova-Alampay, et al., 2002).

Because many international students come from largely collectivist cultures, the loss of connectedness to important family members and the lack of community support increase their psychological or social distress (Ladd & Ruby, 1999; Wang, 2004). Saudi students in the study were usually away from participating in social events because of misconceptions about dietary

and ethical aspects about American social life. Activating the role of community organizations may change these misconceptions through introducing programs like the First Weeker program, International Speakers Services, and the Host Family program.

Support mechanisms for international students fall into three levels, classroom, departmental, and institutional. On the classroom level, the instructors' understanding and encouragement together with the application of cooperative learning strategies have been found to help in easing adjustment problems (Wang, 2004). Typical of the case of Saudi students in the study, adopting active learning strategies and cooperative classroom techniques showed progress in supporting their learning achievements. Departmental awareness of the problems facing international students is another level of support (Jochems, et al., 1996). Such departmental awareness can be achieved through initiating faculty dialogues about the case of these students and the best instructional practices suitable for them. On the institutional level, a system of mentors providing intensive coaching for international students during their first year would be helpful together with programming that targets the inclusion of international students and improve their interpersonal relationships with domestic students (Hechanova-Alampay, et al., 2002; Lacina, 2002; Lee & Rice, 2007). Therefore, increasing the effectiveness of orientation programs to address the variety of the aforementioned challenges together with introducing activities that pair Saudi students with other American students or provide them with the opportunity to mix with them in a relaxed environment can help these students cope with the new environment.

To conclude, the increasing presence of Saudi students in American colleges and universities warrants consideration beyond the usual issues of linguistic difficulties and adjustment problems to include issues of engagement and academic achievement. Student affairs administrators bear responsibility to provide co-curricular and social opportunities structured to help orient Saudi students to their new learning environment. More realistic orientation programs and information sessions may help to positively influence Saudi students' choice of actions and engagement patterns. Social activities should be organized in ways to promote student interaction and foster connections with students outside of the Saudi community. It is important for faculty and academic departments to consider the cultural beliefs held by these students. Departments could provide training to educate faculty and staff about the characteristics Saudi students possess.

Programs that encourage collaborative and cooperative learning strategies can help them acquire needed learning skills and maximize their learning experiences. Creating academic activities within classes which apply critical thinking and encourage setting and achieving goals can provide opportunities for students to appreciate and further develop their personal abilities. Interactive learning environments and utilizing peer modeling may help students be more engaged with their peers. Further, faculty can structure learning activities that provide opportunities for students to build on success and gain confidence in their academic abilities.

LIMITATIONS AND FUTURE RESEARCH

The present study had three limitations that restricted its findings. First: the small number of study participants limited the generalization of findings. Therefore, findings can only be taken into consideration with caution when looking at other institutions. Second, the geographic location of RSU may have had its influence on the case. In other words, Saudi students may behave, perform, and react differently if they are at an institution located in another region where the student bodies are more diverse. Third, information about the study participants obtained through this study, though revealing in-depth rich aspects of the case, is very specific to the case studied and cannot be utilized to speak about the whole group of Saudi students even at RSU. However, readers may find similarities between the case studied and some of the Saudi students at their institutions which may make the implications applicable.

Previous studies which dealt with cultural beliefs of foreign students usually focused on international students as a group or some specific nationalities. Although the results of these studies cannot be neglected, the case of the noticeable increase of Saudi students in the United States deserved a more focused attention. This study showed that cultural beliefs as an agreed upon construct of student academic achievement can be addressed to improve the satisfaction level of Saudi students at American higher education institutions. Such increase can be the result from orientation programs, college success seminars, freshman year programs, student life programs, and multicultural events. An informed decision making process should guide the design of the aforementioned activities. These should be based on engaging activities and socializing opportunities (Wang, 2004). Engaging Saudi students in planning such activities would maximize the benefits. Academically, an awareness of the Saudi students' case and providing engagement opportunities on and off campus may enhance their cultural adjustment. Future studies may target a larger sample size of Saudi students to produce more generalizable results. A quantitative approach may be a suitable technique to study the characteristics of a larger number of Saudi students. A multi institutional study would reveal valuable findings about Saudi students as a fast growing group on American campuses.

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DIGITAL NATIVES OR DIGITAL NEOPHYTES: BUSINESS STUDENT PERSPECTIVES ON COURSE-BASED WEB 2.0 APPLICATIONS

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ABSTRACT

The increasing incorporation of Web 2.0 in business education has been, in part, based on the notion that it is expected by a new generation of millennial learners who possess innate technology knowledge and abilities far superior to their predecessors. While there is evidence that the millennial student possesses characteristics somewhat different than those of previous generations of students, there is yet no compelling empirically based evidence that they, as a cohort, use technology in a universally common way, or that their exposure and experience with various technologies can or should translate to an academic environment. The purpose of this study was to examine business students' knowledge and usage of the myriad of Web 2.0 applications, as well as the perceived effectiveness of these tools in improving their learning experience in courses. Although the students who participated in the study were well-versed in the most widely known Web 2.0 applications such as social networking and video sharing, their lack of familiarity and usage of many of the current crop of Web 2.0 tools was surprising. Additionally students have had little exposure to Web 2.0 in their college courses and generally perceived traditional educational approaches as more effective mechanisms for improving course learning. For Web 2.0 or any technological innovation to achieve success in enhancing learning, it is imperative that faculty emphasize the pedagogical benefits enjoyed by engaging students with the application rather than focusing on the tool itself.

INTRODUCTION

The impact of the Internet and more recently, Web 2.0, has dramatically altered the way in which individuals, companies and organizations communicate and interact both online and offline. While there are a myriad of definitions of Web 2.0, the common threads throughout all is that Web 2.0 provides the ability for individuals to create and share content on the web. The approaches for creating and sharing this content vary (and are continually evolving) including sharing photos and videos (through such applications as Flickr and YouTube), the blogosphere (including traditional weblogs and microblogs such as Twitter), developing collaborative

information stores such as wikis (e.g. Wikipedia), social bookmarking, and, the most pervasive, the creation of personal and professional online communities or social networks (e.g. Facebook and LinkedIn). Amer-Yahia, Halevy, Alonso, Kossman, Markl, Doan & Weikum (2008) succinctly noted that "Web 2.0 offers an architecture of participation and democracy that encourages users to add value to the application as they use it" (p. 49).

Although there has been a great deal of hype around Web 2.0 applications and tools in industry, Web 2.0 also offers possibilities for new approaches to enhance student engagement and learning (Lawton, 2007). Web 2.0 changed the nature of the web from primarily a source of information and content to a new tool for fostering the development of communities, creating information and knowledge, and sharing ideas; this shift presents both challenges and potential benefits for higher education (Maloney, 2007). These possibilities have only recently begun to be explored by educators and academic research has focused little on the impact of these approaches for both faculty and students in the business education realm.

WEB 2.0 IN BUSINESS EDUCATION

There have been two primary research streams in the business education literature on the application of Web 2.0 technologies to enhance learning. Some research has described the use of a Web 2.0 application in a specific course setting, while other studies have focused primarily on discussions of how the tools *could* be applied to promote student engagement and experiential learning.

Applications of Web 2.0 in Business Courses

The majority of business education research conducted to date has discussed specific faculty applications of a Web 2.0 tool within a given course. Not surprisingly, the majority of the studies published have incorporated the most widely known tools including blogs (course blogs, individual student or student group blogs), microblogs (e.g. Twitter), wikis, social networks, and virtual world applications (e.g. SecondLife). Other Web 2.0 tools that have been incorporated in business courses to a lesser degree include, podcasting, Really Simple Syndication (RSS), screen capture, and social bookmarking.

The most commonly reported business education application of Web 2.0 has been blogs. Faculty who have experimented with this tool often do so because they believe blogs provide students with an easy to use mechanism for self expression and communication, a social network of course peers who can share knowledge and information, an effective way to receive feedback from both peers and the instructor, and a student a means for self-assessment by comparing their posts to others (Du and Wagner 2007). However, the results of studies using blogs in business education have been contradictory. Studies that have praised the use of blogs typically note that the tool provides students with the ability to delve into course topics more deeply (Huang &

Behara, 2007), become more engaged in the course (Lin et al., 2006), enhance subject matter knowledge (Du & Wagner, 2007), promote experiential learning (Huang & Behara, 2007; Kaplan, Piskin & Bol, 2010), promote student collaboration (Lu & Yeh, 2008), enhance creativity, self-expression, and communication skills (Huffaker, 2005) and improve students' soft skills (Kaplan, Piskin & Bol, 2010). Other studies' findings were not as enthusiastic about the use of blogs as an enhancement to business education. Divitini, Haugaløkken, & Morken (2005) reported that blogs failed in motivating students to become engaged in course content. Kim (2008) places the blame on the ineffectiveness of blogs in a course on the faculty member claiming that it is the responsibility of the professor to provide clearly defined instructions and structure to a blog project. One of the studies that reported positive outcomes also cautioned that the use of Web 2.0 tools such as blogs come at the cost of increased workload on the part of the instructor and advised faculty that they must become fully versed in any tool selected so they can easily understand and handle problems as they arise (Huang & Behara, 2007).

More recently, faculty have begun experimenting with the use of microblogs, specifically Twitter, in courses. Some believe that Twitter is a tool that can be used effectively within the confines of an online course to enhance its social presence (Dunlap & Lowenthal, 2009). Junco, Heibergert and Loken (2010) found that Twitter significantly enhanced not only student engagement but also resulted in faculty who were more actively involved with their students.

Several researchers have explored the use of class wikis with primarily positive findings. Wikis have been cited as improving students' collaboration skills (Cronin, 2009; Workman, 2008), helping students work more effectively in team (Minocha & Thomas, 2007), providing students the ability to create knowledge (Watson et al., 2008), creating an environment that enhances learning (Mindel & Verma, 2006), and helping students improve their negotiation and technology skills (Hazari, North & Moreland, 2009). Faculty interested in incorporating wikis in their courses, however, have also noted that there can be challenges in setting up and hosting a wiki project (Workman, 2008), and grading wiki contributions can be initially problematic (Cronin, 2009).

Although social networks are the most commonly used Web 2.0 application, reports of their use in business education have been limited. Business faculty have shied away from using social networks on which students are likely to have a presence, such as Facebook, to eliminate privacy concerns on the parts of both students and faculty. Instead, Ning.com has been used to create course specific social networks designed to enhance student-to-student and faculty-to-student communication (Boostrom, Kurthakoti & Summey, 2009; Levy & Hadar, 2010). Using social networks in a class setting have had mixed results. While students typically thought that the course-based social network improved communication and coordination (Boostrom, Kurthakoti & Summey, 2009), they also complained about being forced to participate in a social network (Levy & Hadar, 2010). Additionally, some students encountered some difficulties in using the specific features of Ning.com and commented that much of the course communication could have been more easily accomplished via email (Boostrom, Kurthakoti & Summey, 2009).

More recently, studies have reported faculty experimenting with the use of virtual worlds in their classes. The most widely known virtual world, SecondLife, has been used in all of the studies reported to date. SecondLife allows realistic scenarios to be created that provide students and instructors with the ability to work together and brainstorm solutions to challenges, as well as create solutions and test them within a virtual-world economy (Harris & Rea, 2009). Instructors can also use SecondLife to provide a relatively risk-free environment for role-playing, simulations, exploration, and experimentation (Graves, 2008). Faculty who have used SecondLife have generally reported that virtual world projects have helped foster team collaboration and enhanced student learning (De Lucia, Passero, Francese & Tortora, 2008; Schiller, 2009; Tuten, 2009).

Other Web 2.0 applications that have been employed in business courses have generally been positively reviewed by the faculty incorporating them in their classes. Podcasting, for example, has been described by some faculty as a means to transform the way students are engaged in learning (Beldarrain, 2006). Zahay and Fredricks (2009) reported that podcasts in their Internet Marketing course were positively received by students and allowed class time to be more focused on the application of topics rather than lecture. Podcasts have also been shown to provide students with a mechanism to revisit topics discussed in class on their own (Lonn & Teasley, 2009; Zahay & Fredricks, 2009). Some students did note, however, that podcasts do not necessarily improve the quality of an instructor's teaching (Lonn & Teasley, 2009). Really Simple Syndication (RSS) has been reported as an advantageous mechanism for providing students with course announcements and assignment information (Cong and Du, 2008), while screen capture has been cited as allowing students to easily review steps in a process (Watkins and Hufnagel, 2007).

The Potential of Web 2.0 Tools in Business Education

While much of the research on the use of Web 2.0 in business education has focused on direct experiences with specific applications, studies have also been published discussing the potential, possibilities, and considerations of embracing these technologies. Bohley (2010), for example, provided descriptions of the most commonly used Web 2.0 tools in an educational setting and provided guidelines to help business faculty determine if one or any of these tools could be a beneficial addition to a course. Similarly, Wankel (2009) provided an overview of the most commonly used social media to include Facebook, blogs, YouTube, Twitter, and SecondLife as well as examples of how each could be used to foster student collaboration in management education.

Singh, Mangalaraj and Taneja (2010) discussed how various Web 2.0 technologies can be used to enhance online courses. They suggested that an instructor wishing to use a Web 2.0 application needs to carefully select the tool that is the best fit to meet the specific learning outcomes for their course. Additionally, the authors noted that it is critically important for

instructors to evaluate the trade-offs between the costs of developing such course components and the potential educational benefits. More recently, Granitz and Koernig (2011) described how Web 2.0 can be leveraged to improve student learning and engagement and provided specific examples integrating Web 2.0 into the marketing curriculum. They recognized that in order for Web 2.0 technologies to be more fully embraced by faculty, departments must have champions who are technology innovators as the benefits of using Web 2.0 must be "sold", and there must be support at the upper levels of university administration.

Aijan and Hartshorne (2008) conducted a study to determine the thoughts of faculty members about using Web 2.0 technologies in the classroom. They found that although faculty believed Web 2.0 technologies could enhance student learning, increase interaction among students, and improve student writing ability, most faculty did not currently incorporate Web 2.0 applications in their courses, had no plans for doing so in the near term, and were not active users of social media. This is not surprising since studies by Educause found that the greatest barriers to technology use in the classroom are the perceived extra workload on the faculty, applications do not run as expected or do not work properly, and the lack of institutional technical support Kvavik, Caruso & Morgan, 2004; Smith, Salaway & Caruso, 2009).

TODAY'S STUDENTS: THE DIGITAL NATIVES?

Faculty are saying that they are now finding a student body substantially different from that of just a decade ago and, for most, much different than they remember about their own generation when attending college. This new generation goes by various names including millennials (Howe and Strauss, 2000), digital natives (Prensky, 2001), generation next, echo boomers, and net generation (Tapscott, 1998); but, regardless of name, they have characteristics that set them apart from earlier student and faculty cohorts. As a generation, they have both positive and negative characteristics impacting their behaviors, aspirations, and learning styles. The millennials are said to be collaborative learners, proficient in multitasking, possess a sense of entitlement, believe in a Burger King consumer world of having things "their way," wanting to share their opinions and having them heard by others, dependent on communications technologies for accessing information, and being connected to family and friends (see for instance, Oblinger, 2003; Coornes & DeBard, 2004; Gose, 1998; Levine & Cureton, 1998; Newton, 2000; Frand, 2000; Oblinger & Oblinger, 2005; Prensky, 2001; Tapscott, 1999; Taylor, 2005; Twenge 2006). They often have friends across the country and even globally whom they have only met and gotten to know by being digitally connected. Faculty often say millennials "just can't pay attention," but Prensky (2001) asks, or do they [digital natives] just choose not to?"

The millennials even believe they have a unique and distinctive identity; but according to a 2010 Pew Research Center Report "roughly two-thirds of Silents, nearly six in ten Boomers and about half of Xers feel the same way about their generation. However,

millennials more than any other group say it's because of their use of technology that sets them apart from earlier generations" (p. 5).

There are many descriptors of the digital native (see for instance Selwyn & Facer, 2009), e.g., the digital native student "grew up bathed in bits" (Tapscott & Williams, 2008, p. 47), are a new breed of "homo-zappiens" (Veen & Vrakking, 2006), are "net savvy" (Levin & Arafeh, 2002), lived "digital childhoods" (Vandewater, Rideout, Wartella, Huang, Lee & Shim, 2007), and have "media families" (Rideout and Hammel, 2006). Today's college students, the digital natives, have never known a world without it; they were "born digital" (Palfrey and Gasser, 2008). They exhibit an air of confidence and a great understanding in using technology in their everyday lives, going throughout the day plugged into portable, personalized devices such as cell phones and mp3 players. While all generations may now be extensive users of technology, most of us have had to go about learning about digital technology. Today's faculty are digital immigrants (Prensky, 2001). "The importance of the distinction is this: As Digital Immigrants learn – like all immigrants, some better than others – to adapt to their environment, they always retain, to some degree, their 'accent,' that is, their foot in the past," (Prensky, 2001, p. 2), and this fact sets today's faculty apart from the generation of the students they teach.

Some believe that this new generation of learners has innate technical knowledge, skills, and abilities as well as daily technology activities and experiences which have resulted in a perceived friction between traditional pedagogies and emerging student expectations and preferences. As stated by Prensky (2001, p. 2), "The single biggest problem facing education today is that our Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language."

Today's student body of digital natives represents the learners of a new millennium (Pedro´, 2007) shaping the views of higher education administrators, faculty, governing boards, and funding agencies. Traditional lecture based pedagogies are being viewed as less effective in producing desired academic outcomes (Taylor 2010; Bok 2006; Shulman 2005; Tagg 2004; U.S. Department of Education, 2006). Some educators are urging expansive educational reforms while admonishing faculty to adapt pedagogies to the learning styles of the millennial student; a sense of impending crisis pervades this debate (Bennett, Maton & Kervin, 2008). However, there is little empirical evidence to support the "urgent" need for reform.

The overarching and untested assumption is that the technology usage of the digital native in their everyday lives should be used in similar ways within an academic setting, i.e., can it be stated with any degree of confidence that students' general information-seeking behavior can be adapted to educational tasks requiring synthesis and critical analysis. Might there be in some irreconcilable differences in the informal usage of technology by the digital natives and that required in an academic learning environment? While there is evidence that the millennial student possesses characteristics somewhat different than those of previous generations of students, there is yet no compelling empirically based evidence that they, as a cohort, use technology in a universally common way, or that their exposure and experience with various technologies can

translate to an academic environment in ways that will enhance engagement and learning outcomes. What has been missing is the connection between hyperbole and reality; between what is assumed and what is actually evidenced in the behavior of the millennial student. More research is needed to identify how and why the digital native student chooses to use technology and what value they place on technology in different environments, including their educational environment.

PURPOSE OF THE STUDY

Although the majority of business faculty who have incorporated Web 2.0 into their courses have typically concluded that these instructional innovations have been received positively by students and enhanced their learning, much of the evidence provided has been, at best, anecdotal. Rather than formally assessing the impact of the application on learning, faculty have typically reported success based on student feedback (both qualitative and quantitative), frequency of student usage of the Web 2.0 application (e.g. the number of blog postings, number of wiki contributions, etc.), and self-perceptions of comparing the students using the Web 2.0 tool to students taught prior to the introduction of the innovation. The studies often have no longitudinal fortitude as they are based on the first, and possibly only, time the instructor used the application. Additionally, the sample sizes reported in most cases are quite small making the results difficult to generalize. What all of the previous research on using Web 2.0 presumes is that today's students, the digital natives, are all technologically adept, well-versed in all aspects of social media, and believe that technically-advanced approaches to learning are superior to traditional methods. Does this mean that the millennial students of the net generation expect faculty to incorporate Web 2.0 into their courses? Is this even desired by students? What is unwritten in the literature but seemingly presumed by faculty, administrators, and governing boards is that today's students expect the latest technological innovations to be used in their college courses. Yet, no evidence was found where students were asked about their usage of Web 2.0 applications and perceptions of incorporating these technologies in the classroom. The purpose of this study is to examine business students' knowledge and usage of the myriad of Web 2.0 applications, as well as the perceived effectiveness of these tools in improving their learning experience in courses. Specifically, the major research questions of interest are:

1. To what extent are Web 2.0 applications and tools used by students? How frequently are these used?

2. Which Web 2.0 applications and tools have students used in their university courses?

3. To what extent do students perceive the effectiveness of commonly employed Web 2.0 approaches to enhancing learning compared to more traditional pedagogical approaches?

METHODOLOGY AND PROFILE OF THE SURVEY RESPONDENTS

A survey was developed to measure business students' usage and perceptions of various Web 2.0 tools. The survey instrument included questions about awareness and usage of various Web 2.0 applications, experience with Web 2.0 tools in college-level classes, the effectiveness of various pedagogical approaches (both traditional and Web 2.0), as well as preferred communication methods for courses, professors and fellow students. Undergraduate students majoring in business from a mid-size, public university in the southeastern U.S. participated in the study. Participants were sent an email with a link to the questionnaire that could be accessed online. Of the 350 students who agreed to participate in the study, 318 surveys were deemed usable for analysis.

Slightly more than one-half of the survey respondents, 51.7%, were female. In terms of class standing, 46.1% of the respondents classified themselves as seniors, 25.7% were juniors, 17.6% were sophomores, and 10.7% were freshmen. Four-fifths of those who participated in the study, 80.4%, began their studies at the university as freshmen while the remaining 19.6% transferred from a community college or another 4-year institution. The majority of participants, 82.3% indicated that they were enrolled in 12 – 16 credit hours during the semester the survey was conducted. An additional 11.7% said they were taking more than 16 credit hours, while the remaining 6% were taking fewer than 12 credit hours. Two-thirds of the survey respondents reported that their overall grade point average (GPA) was either 2.50 – 2.99 (33.6%) or 3.00 – 3.49 (33.3%). An additional 19.2% reported a GPA of 3.50 or higher, while 13.8% said their GPA was lower than 2.50. While virtually all of the student respondents said they had Internet access at their residence (97.5%), less than two-thirds (61.5%) indicated that they currently owned a mobile device that connects to the Internet.

RESULTS

Students' awareness and usage of various Web 2.0 applications are shown in Table 1. Not surprisingly, all of the respondents were aware of social network applications and the overwhelming majority said they used social networks (such as Facebook, MySpace, and Ning) on a daily basis (77.6%) or more than once per week (13.6%). Almost four-fifth of the students, 79.8%, also said they used video sharing applications such as YouTube at least once per month (28.1% every day; 34.7% more than once per week; 17% 1 – 4 times per month).

Table 1: Awareness and Usage of Web 2.0 Tools/Applications									
			in valid percent						
	N	Median	Never Heard of It	Heard of but Not Used	Tried - Do Not Use Regularly	Use Less Than Once per Month	Use 1 - 4 Times per Month	Use More Than Once per Week	Use Every Day
Social Networks (e.g. Facebook, MySpace, Ning)	317	Use every day	0.0	1.6	3.2	2.2	1.9	13.6	77.6
Video Sharing (e.g. YouTube)	317	Use several times per week	1.3	3.2	5.7	10.1	17.0	34.7	28.1
Wikis (e.g. Wikipedia)	315	Use 1 - 4 times per month	0.0	4.1	9.5	12.0	30.7	32.3	11.4
Cloud Applications (e.g. Google Maps, Google Earth)	317	Use less than once per month	6.6	6.6	20.2	23.7	22.4	11.4	9.1
Skype	318	Tried but do not use regularly	2.8	36.2	18.9	15.4	14.5	8.2	4.1
RSS/Feed Reader (e.g. Google Reader, Bloglines)	315	Heard of it but not used	34.0	32.4	8.3	5.4	4.4	4.1	11.4
Personal Dashboard (e.g. iGoogle)	316	Heard of it but not used	32.3	38.3	11.4	5.7	2.8	2.2	6.3
Microblogs (e.g. Twitter)	315	Heard of it but not used	6.3	59.4	16.2	5.1	2.2	4.8	6.0
Blogs	316	Heard of it but not used	2.8	53.5	18.7	10.1	5.7	4.4	4.7
Online Collaboration Tools (e.g. Google Docs)	317	Heard of it but not used	37.9	30.6	13.6	5.7	4.7	3.2	4.4
Social Notes (e.g. Evernote, Google Notes)	318	Heard of it but not used	46.2	34.6	9.7	3.1	2.2	2.2	1.9
Online Scheduling (e.g. Doodle)	316	Heard of it but not used	47.8	33.2	9.8	3.5	2.5	1.3	1.9
Photo Sharing (e.g. Flickr)	317	Heard of it but not used	11.0	45.7	17.0	13.2	7.9	3.5	1.6
Podcasting	316	Heard of it but not used	12.7	56.3	18.0	7.3	2.8	1.6	1.3
Social News (e.g. Digg)	310	Heard of it but not used	43.2	34.2	8.1	6.1	5.5	1.6	1.3
Presentation Sharing Tools (e.g. Slideshare, VoiceThread)	316	Heard of it but not used	44.9	30.4	10.8	4.7	6.0	2.2	0.9
Web Meeting, Web Conferencing, Webinar (e.g. Adobe Connect, DimDim, GoToMeeting	316	Heard of it but not used	35.1	44.3	11.1	3.8	2.8	1.9	0.9
Professional Networks (e.g. LinkedIn)	317	Heard of it but not used	40.1	31.2	11.0	7.3	5.0	4.7	0.6
Mind Mapping (e.g. Freemind, Bubble.us)	316	Never heard of it	69.9	19.0	4.7	2.8	2.2	0.3	0.9
Screen Capture Tools (e.g. SnagIt, Jing)	317	Never heard of it	63.1	22.7	5.0	4.1	1.9	2.5	0.6
Virtual Worlds (e.g. Second Life)	315	Never heard of it	53.3	35.6	7.3	1.3	1.6	0.3	0.6
Social Bookmarkting (e.g. Deli.ciou.us, Diigo)	316	Never heard of it	64.9	22.8	5.4	2.5	1.9	2.2	0.3

Wikis were also used with some regularity by the students. Almost three-fourths of those responding, 74.4%, indicated that they used wikis at least once per month (11.4% every day; 32.3% more than once per week; 30.7% 1 – 4 times per month). The only other Web 2.0 application that was used with some degree of frequency by the students was cloud software such as Google Maps or Google Earth although less than one- half of those responding, 42.9%, said they used this type of tool at least once per month. Of the remaining Web 2.0 tools and applications evaluated students were, on average, most likely to state that they have tried it but do not use it regularly (Skype), have heard of the application/tool but never used it (RSS/Feed Reader, Personal Dashboard, Microblogs, Blogs, Online Collaboration Tools, Social Notes, Online Scheduling, Photo Sharing, Podcasting, Social News, Presentation Sharing Tools, Web Meeting/Web Conferencing/Webinar Tools, and Professional Networks), or have never heard of the application/tool at all (Mind Mapping, Virtual Worlds, and Social Bookmarking).

In addition to students providing information about their awareness and general usage of Web 2.0 applications and tools, they were also asked to identify which ones, if any, they had used as part of a college course. The results are shown in Table 2. It was not surprising to see that the tools students were the most familiar with were also those that they had used most frequently in a university course setting. Wikis were used by almost three-fourths, 73.7%, of the students responding, while 69.3% indicated that they had encountered video sharing applications as part of a course. Slightly less than one-half of the respondents, 48.6%, said they used social networks in an academic setting and 27% noted that they had used a cloud application in their coursework. Seven other Web 2.0 tools evaluated were used in university courses by more than 10% of the students. These included blogs (15.7%), podcasting (13.8%), Skype (13.5%), online collaboration tools (13.5%), presentation sharing tools (11.3%), professional networks (10.7%), and photo sharing (10.3%). The remaining applications were used by less than 10% of the respondents with some such as mind mapping software, social bookmarking tools, and virtual world applications used by fewer than 5 of the 318 survey respondents. What is unknown from this research is whether the use of the Web 2.0 applications in university courses resulted from an instructor-based requirement or something that students initiated on their own to communicate with peers or complete coursework.

Table 2: Web 2.0 Applications/Tools used in University Courses

Web 2.0 Application/Tool	N	Valid %
Wikis	235	73.7%
Video Sharing	221	69.3%
Social Networks	155	48.6%
Cloud Applications	86	27.0%
Blogs	50	15.7%
Podcasting	44	13.8%
Skype	43	13.5%
Online Collaboration Tools	43	13.5%
Presentation Sharing Tools	36	11.3%
Professional Networks	34	10.7%

Table 2: Web 2.0 Applications/Tools used in University Courses		
Web 2.0 Application/Tool	N	Valid %
Photo Sharing	33	10.3%
RSS/Feed Reader	30	9.4%
Online Scheduling	26	8.2%
Personal Dashboard	25	7.8%
Microblogs	24	7.5%
Web Meeting, Web Conferencing, Webinars	24	7.5%
Social Notes	19	6.0%
Social News	11	3.4%
Screen Capture Tools	8	2.5%
Mind Mapping	4	1.3%
Social Bookmarking	3	.9%
Virtual Worlds	1	.3%

Students were asked to evaluate how effective they viewed a variety of instructional approaches at enhancing their learning in college courses. The approaches included both traditional instructional methods used by faculty such as lecture, group projects, case studies, guest speakers and class discussion, as well as some of the more frequently used Web 2.0 tools in college classes cited by the literature to include blogs, wikis, podcasts, and social networks. Each instructional method was evaluated using a 1 to 5 scale where 1 was Not Effective and 5 was Very Effective. An "Unable to Evaluate" option was also provided for approaches with which students had no personal knowledge or experience. While the list of options evaluated may not exhaust all of the possible approaches used by faculty, they cover a broad swath of instructional approaches frequently discussed in a business education context. A summary of students' perceived effectiveness of the value of each of the various instructional methods evaluated is depicted in Table 3.

The methods that were perceived by students to be most effective at enhancing learning in college courses tended to be some of the more traditional and commonly used techniques such as in-class activities (mean rating of 4.24; 83.2% rated 4 or 5), in-class discussions (mean rating of 4.20; 79.1% rated 4 or 5), Powerpoint presentations (mean rating of 4.00; 73.6% rated 4 or 5), course management systems such as Blackboard (mean rating of 3.96; 69% rated 4 or 5), and in-class lecture (mean rating of 3.92; 69.8% rated 4 or 5). While the majority of the Web 2.0 applications evaluated were not viewed as particularly effective in enhancing course-based learning, some of the newer approaches to include video streams from sites such as YouTube (66.8%), online collaboration tools (59.3%), presentation sharing tools (59.3%), wikis (52%), and social networking sites (50%) were viewed as effective (rating of 4 or 5) by at least one-half of the students responding. The approaches that were perceived least effective (fewer than one-third of students rated 4 or 5) included microblogs (18.7%), blogs (21.6%), e-portfolios (26.4%), social bookmarking (21.6%), RSS feeds (26.6%), podcasts (27.2%), social news (27.9%) and social notes (32.3%).

Table 3: Perceived Effectiveness of Instructional Approaches						
				in valid percent (%) using scale where "5" is Very Effective and "1" is Not Effective		
	N	Mean	% Unable to Evaluate	Top Box	Neutral	Bottom Box
In-class Activities	311	4.24	1.3	83.2	14.8	1.9
In-class Discussions	311	4.20	1.3	79.1	17.0	3.9
Powerpoint Presentations	314	4.00	0.9	73.6	18.5	8.0
Course Management Systems (e.g. WebCT, Blackboard	310	3.96	1.9	69.0	22.9	8.1
In-class Lectures	312	3.92	0.9	69.8	22.1	8.0
Streamed Video from Sites	302	3.88	3.8	66.8	26.5	7.0
Individual Projects	313	3.82	0.9	67.7	23.3	8.9
Interactive Whiteboards (e.g. SMART board, ActivBoard)	267	3.81	14.7	67.7	23.3	8.9
Guest Speakers	305	3.70	1.6	60.3	27.9	11.9
Case Studies	294	3.69	6.6	60.2	27.6	12.2
Textbook Online Resources	298	3.68	5.0	59.7	27.5	12.7
Computer Simulations	263	3.67	16.3	56.7	33.1	10.3
Presentation Sharing Tools	209	3.66	33.5	59.3	26.8	13.9
Out-of-class/Homework Assignments	315	3.65	0.6	60.9	27.6	11.5
Reading Textbook/Assigned Articles	310	3.53	1.9	44.5	28.7	16.7
Group Projects	308	3.49	1.9	54.5	26.9	18.5
Student Presentations	310	3.46	0.9	52.3	30.3	17.4
Online Lectures with Audio and/or Video	280	3.46	11.9	51.8	29.6	18.6
Wikis	302	3.42	4.1	52.0	25.2	22.9
Social Networking Sites	289	3.34	8.8	50.0	24.9	25.9
Online Class Discussions/Chat Rooms	273	3.30	13.2	45.8	31.9	22.4
Online Collaboration Tools	209	3.25	33.5	59.3	26.8	13.9
Social Notes	164	3.05	47.6	32.3	36.6	31.1
Podcasts	206	2.90	34.2	27.2	40.8	32.0
Social News	168	2.88	45.8	27.9	38.7	33.3
E-portfolios	178	2.86	42.6	26.4	37.1	36.5
RSS Feeds	147	2.80	52.7	26.6	36.7	36.7
Social Bookmarking	144	2.72	53.9	21.6	39.6	38.9
Blogs	237	2.60	23.8	22.0	31.2	46.9
Microblogs	219	2.33	29.8	18.7	26.0	55.3

When students were asked to identify the one most effective way for faculty to communicate course information to students, the traditional approaches were most often cited (See Table 4). Students said they thought that email (49.4%), course management systems

(20.8%), and directly from the professor during class (20.1%) were the most valuable mechanisms for conveying course announcements and materials. Only a very small percentage of respondents thought professors could effectively convey information via course websites (2.5%), text messaging (2.2%), course blogs (1.9%), social network sites (1.3%), instant messaging (.6%), and professional networking sites (.3%).

Students were also queried as to what they believed to be the most effective way to communicate with faculty and their student peers (see Table 5). While email was cited as the most effective mechanism for communicating with both constituencies, the magnitude differed greatly. Almost two-thirds of the respondents, 65.7%, said that email was the best way to communicate with professors while only 26.9% said this would be the most effective approach for communicating with their student peers. The only other frequently cited way to effectively communicate with faculty was in-person (or face-to-face) communication (30.5%). Student-to-student communication, in the eyes of the respondents, could effectively be done via text messaging (25.3%), social networking sites (20.6%), and face-to-face (20.6%). Although students enjoy virtual interaction, they still require face-to-face time with their peers (Lenhart, Madden & Kitlin, 2005).

DISCUSSION

The usefulness of the literature surrounding the usage of technology by the millennial digital native student is limited by the fact that much of the supporting evidence was drawn from students' general rather than specific technology usage and, in some cases, may best be described as anecdotally based observations rather than empirically based conclusions. Findings from this research demonstrate that the use of Web 2.0 technology is not universal among the digital natives. Our research suggests that while some technologies were used by significant numbers of students, the majority of Web 2.0 applications were either not used, used only limitedly or unknown to the respondents. This leads one to question if the digital natives are really the digital neophytes. Millennials have been described as collaborative, network oriented, desiring interpersonal connections and wanting their opinions shared and heard. Thus, it is not surprising that the Web 2.0 applications students used most frequently were those that seemingly best met these needs. Millennials have been referred to as addicted to social media (International Center for Media & the Public Agenda, n.d.) and that was supported by the findings (more than 90% of respondents use some form of social media, e.g., Facebook, more than once per week). What is unclear is why were other Web 2.0 applications that also promote collaboration and connectivity used limitedly or not at all? It will be interesting to see if students' usage of Web 2.0 begins to adjust as technologies continue to evolve and as their life needs change in their movement from college into adulthood. Web 2.0 applications that have not been used or have only been used on a limited basis may simply not have direct application in the student's daily life currently or it may

be a case where the student does not completely understand, appreciate or see the need for a specific tool.

Table 4 : One Most Effective Way for Faculty to Communicate Course Information to Students		
Method	N	Valid %
Email	157	49.4
Course Management System	66	20.8
From the Professor in Class	64	20.1
Instructor's Website	8	2.5
Text Messaging	7	2.2
Course Blog	6	1.9
Social Networking Site	4	1.3
Instant Messaging	2	0.6
Professional Networking Site	1	0.3

Table 5: One Most Effective Way for Students to Communicate				
	With Faculty		With Student Peers	
Method	N	Valid %	N	Valid %
Email	209	65.7	85	26.9
Face-to-Face Communication	97	30.5	65	20.6
Course Management System	4	1.3	5	1.6
Text Messaging	3	0.9	80	25.3
Phone Conversation	2	0.6	9	2.8
Social Networking Site	1	0.3	65	20.6
Instant Messaging	1	0.3	2	0.6
Professional Networking Site	0	0.0	2	0.6
Course Blog	0	0.0	1	0.3
Microblog	0	0.0	1	0.3

It was not surprising that the Web 2.0 applications used most often in an academic setting were those with which students were already familiar and used frequently on a personal level. Although many faculty do not allow students to cite wikis, such as Wikipedia, in a formal paper, for example, it is clear that students still use this resource to assist them in their college courses. What is not known is whether students turn to wikis because it is an easy to use resource and often shows up at or near the top in the results of an online search or if they have been asked to use a wiki within the confines of a given class (e.g. contribute knowledge to a wiki on a specific topic). Video sharing, such as YouTube, is another Web 2.0 tool that was frequently cited as being used in university courses. Again, it is not clear if this is done by students on their own in seeking course-related information or at the request of a faculty member who may ask students to share video they created. Although no studies were found in the literature discussing applications of video sharing in business classes, we know from our own experience and what we hear anecdotally from other faculty that YouTube clips are often incorporated in class

lectures and discussions to highlight specific topics. The most confounding Web 2.0 application from an academic perspective is the social network (e.g. Facebook). Many faculty shy away from incorporating social networks in their classes in order to keep separation between a student's personal and academic lives; yet, almost one-half of the respondents reported using social networks as a part of a college course. What is most likely occurring is that students are using social networks to communicate with their classroom peers rather than participating in a class-based social network. Most of the Web 2.0 applications evaluated were used by only a small minority of students in an academic setting. Thus, it is likely that the academic usage of these tools was most likely at the behest of the instructor or incorporated as an integral part of the course. As more faculty begin to delve into Web 2.0 technologies, it is likely that students will find themselves using these tools more frequently in their courses.

For students who have been tagged as the most technologically capable group in history, it was somewhat surprising that the majority of Web 2.0 tools evaluated were not perceived as effective in enhancing learning. While a few Web 2.0 applications, such as streamed video and presentation sharing tools were viewed as generally effective, the approaches most valued were what most educators would perceive as highly traditional. What may be occurring is that students believe the most effective pedagogies are those with which they are the most familiar and comfortable. Approaches such as in-class activities, discussion, Powerpoint presentations, course management systems, lectures, and projects have been in place throughout the entire academic career of these students. Many of the Web 2.0 applications such as microblogs, social bookmarking, and RSS are still relatively new and have not been reported as being frequently incorporated into classes by faculty. Students may not be able to appreciate or gauge the effectiveness of tools and approaches they have not yet experienced in a classroom setting. As faculty begin to explore the pedagogical benefits of Web 2.0 applications, they may incorporate various approaches in their classes. Additionally, research has shown that students working with Web 2.0 applications increase their comfort level with the tools and they find these skills useful in their careers after graduation (Sendall, Ceccucci & Peslak, 2008). These factors, in tandem, may result in an increase in the perceived effectiveness of Web 2.0 in business education.

So what should a faculty member do? How can faculty successful incorporate Web 2.0 technology in a way that benefits student learning? Although technology utilization was not universal among the millennials surveyed, their generation's general predisposition toward it and their acceptance of it should be considered in adopting Web 2.0 technologies into instructional pedagogy. Since respondents reported high usage of some technologies and low usage on others, two strategies may be used to adjust pedagogy around the lifestyles and emerging learning styles of the millennial students. High usage technologies, such as social networks, wikis, and video sharing, would not be unfamiliar to students and, if not requiring significant change in students' usage behavior, may be easily adopted into instructional pedagogy. Students already have great familiarity with social networks, e.g., Facebook, so adapting it into the curriculum would not be foreign to students. However, faculty should take care that the application is consistent with

students' experience and usage or resistance could occur (i.e., students may be less flexible in changing behaviors to fit what they may see as instructional needs). One way to circumvent student unease would be for faculty to create a Facebook group or fan page for a specific course rather than using his or her own personal Facebook page. This would eliminate some of the privacy concerns with a typical Facebook page and this would provide students with the experience of using Facebook in the manner done by many corporations. The other strategy a faculty member could employ would be to consider adopting low usage Web 2.0 technologies, such as Skype, social bookmarking and social notes, since existing behaviors would not need to be modified, thus, permitting the technology to be developed within an educational context from the outset. Using Skype, for example, would allow faculty to bring in guest speakers to class, a learning approach students generally found effective, from geographically dispersed locations. This Web 2.0 technology is consonant with millennials' connected behavior and collaborative relationship style.

As many Web 2.0 applications are already existent in university courses, students are witnessing first hand a changing educational landscape; a landscape adapting to what millennials perceive as one of the major differentiating characteristics between them and previous generations. The successful integration of Web 2.0 in business education is dependent on faculty focusing on engaging students and enhancing learning rather than on the technology itself. As Crook (2008) noted, faculty must focus on a Web 2.0 mentality rather than Web 2.0 technology; that is, create an environment for students that is participatory, collaborative, and creative.

LIMITATIONS AND FUTURE RESEARCH

One limitation of this study was the sample was restricted to business students at a single university. A follow-on study that included students majoring in business from different geographic areas, as well as different types of universities would provide additional richness in better understanding student perceptions. Additionally, the researchers were unable to determine in which ways students employed Web 2.0 technologies in their courses. It would be interesting to examine if students who were "forced" to use a Web 2.0 tool based on a course requirement differed in their perceptions from students who chose to use the tool on their own to facilitate course learning and/or communication.

An additional direction for future research would be to examine if business students differed from their non-business counterparts in their usage and perceptions of Web 2.0 in an academic environment. It would also be beneficial to understand why students choose to use certain Web 2.0 tools and not others. Finally, a study focused on how students could envision Web 2.0 technologies being employed in classes could provide faculty with potential possibilities, in ways they had not thought about previously, for engaging students in courses.

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