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LETTER FROM THE EDITORS

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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.

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Michael Shurden
and
Susan Shurden
Co-Editors

DRIVERS OF STUDENT RETENTION: SYSTEM AVAILABILITY, PRIVACY, VALUE AND LOYALTY IN ONLINE HIGHER EDUCATION

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ABSTRACT

Within higher education institutions, student retention is a critical factor that warrants much attention and devotion of resources due to its significant impact on the overall success of these institutions. Positive student retention is ultimately a "win-win" situation in higher education: "as the student completes their educational goals and future earnings while the institution satisfactorily completes its mission" (Bean, 1990 p. 237). As student retention receives significant attention in higher educational institutions, 2012 completion trends estimated that only 36.6% of students enrolled in 4-year public college will complete their bachelor's degree within 5 years, down from 52.8% in 1986 (ACT, 2012). The emergence of alternative delivery methods of educating, such as the online classroom, provides an increased level of convenience and availability which theoretically leads to increased degree completion. Academia is quickly expanding from a traditional brick-and-mortar service provider toward a B2C e-commerce service category. In fact, 62.4% of colleges and universities have expanded to include fully online programs (Babson Survey Research Group and the College Board, 2012).

A recent study estimates that approximately 6.1 million college students have taken at least one online course (Wisloski, 2011). Offering more online education, however, may place additional demands on course delivery technological systems, professor-student communication and virtual pedagogy. With these new demands, comes the continuous challenge of managing the both the pedagogical and technical quality of programs which can effect student outcome variables which are linked to student retention. Student loyalty has been shown to be impacted by satisfaction and institution reputation (Helgesen & Nesset, 2007). This study examines another determinant of loyalty: perceived value. To that extent, two determinants of perceived value (system availability and privacy) are examined. AMOS is used to assess the structural model of the role of system availability and privacy on perceived value, and, in turn, the impact of perceived value on student loyalty. Results show satisfactory fit. One interesting finding, however, suggests that student perception of privacy has a non-significant linkage to perceived value. Results suggest that students may not be overly concerned with online privacy when assessing the value of their online higher education program. Significant linkages were found from system availability as a determinant of perceived value, as well as from perceived value and the students' resulting loyalty.

INTRODUCTION

Over the last decade, the face of academia has changed toward a B2C e-commerce platform. Traditional brick and mortar classrooms have been ever increasingly substituted by the virtual interface between the student and the institution. Current trends increasingly suggest that college students are taking fewer classes in the live classroom and more online. Over the last decade, online-only course enrollment in higher education is projected to increase from .78 million to a projected 3.97 million by 2014 (Wisloski, 2011). As a result, 64.2% of universities are citing online programs as critical to their long-term strategic plans (Babsen Survey Research Group, 2012; Wisloski, 2011). Currently online education is continuously extending beyond the traditional instructional boundaries due to knowledge transfer via electronic communities and the convenience and flexibility to study anytime and anywhere. The ubiquitous online interface allows students the opportunity to learn at their own pace and style while saving the student travel time and money, as well as effort of physically attending classes. For universities and colleges, online instruction provides an opportunity for greater geographic reach than has ever been possible.

Advances in teaching technology are constantly being adopted to complement the browser based classroom. Due to this value added convenience and flexibility; these advances have created a vast new market for universities in the form of students who could not pursue their education using the traditional format. Student retention is currently at the top of most universities' checklists; 2012 completion trends estimated that only 36.6% of students enrolled in 4-year public college will complete their bachelor's degree within 5 years, down from 52.8% in 1986 (ACT, 2012). The emergence of alternative delivery methods of educating, such as the online classroom, provides an increased level of convenience and availability which theoretically leads to increased degree completion. As a result, providers of on-line education strive to maintain a constant level of quality in online education which will result in increased student enrollment and retention.

With this emphasis on high quality and student retention, institutions providing on-line education must implement assessment measures to ensure quality objectives. This begs the question: What types of measures should these institutions employ? Research obtained from the services marketing field may be employed to help address this critical question. Based on this research, assessing the quality of the electronic service provided can allow valuable insight into student enrollment and existing student retention. A progressive understanding of electronic service quality and its measurement will become an extremely valuable asset as it is applied to on-line enrollment and student retention.

THE QUALITY OF ONLINE HIGHER EDUCATION

In traditional e-commerce, repeat sales, positive word-of-mouth, customer loyalty, and competitive product differentiation have been linked to service quality and increased profitability which can provide a competitive advantage (Brown and Swartz 1989; Sherden, 1988). When

applied to higher education institutions, these types of factors are to be considered in the initial movement toward establishing quality control. As universities are beginning to consider quality control and assessment in the online environment (Abdullah, 2006), the development of sound measures are crucial.

With the changing landscape of higher education, comes a level of uncertainty when addressing unchartered territory. A relatively new system typically is met with a fear of the unknown, and concern over institutional changes and their implications. These concerns over the future are not hindering the progression of online educators entering into the mainstream. As of 2005, approximately 60% of colleges and universities offering traditional undergraduate courses were also offering online degree programs (Allen and Seaman, 2005). Today, university administrators view the development of online education as a requisite for meeting the demand for education, reaching a broader demographic, and sustaining that competitive edge in a competitive education market (Wisloski, 2011).

Benefits derived from the online education venue are evidenced in the reduction of logistical constraints such as the need for the student to be physically present in the classroom at a specified time. Online study provides virtual tools that facilitate course-related graphics and audio-visual aids. In the early 2000's, Hiltz and Shea (2005) found that over 50% of U.S. students were returning to education after work. These students are a large representative of candidates for the on-line education venue because it is less likely to be affected by a person's lack of mobility or domestic responsibilities, or time restrictions.

Higher education institutions have long been concerning themselves with values, skills and abilities of their graduates (Ginsberg, 1991; Lawson, 1992). In conjunction with these factors, universities are also concerned with how much their students appreciate their educational experience. Student perceptions of quality are critical to the university's self-assessment. As online enrollment growth continues, additional demands placed on the technological systems and the control of professor-student communication will occur. Assessing the e-service quality of online education is becoming a necessity. E-service quality focuses on fostering positive change to enhance the learning experience for online students.

Zhu and Lin (2010) concluded that service quality within the online banking industry exerts an indirect influence on loyalty. Siu, Zhang, and Lam (2010) extracted five factors: trust, web site design, reliability, personalization, and responsiveness from within the online ticketing industry. Of these five factors, results showed that all were positively related to customer satisfaction, with responsiveness having the strongest relationship. Chao, Lee, and Ho (2009) extracted e-service quality, customer satisfaction, trust, and e-loyalty. Their findings show that service quality has a positive relationship with customer satisfaction also from the banking industry.

Research to date has assessed online higher education in terms of pedagogy, instructor-student collaboration, assignment/project appropriateness, virtual educational delivery and social ramifications of online versus traditional higher education formats (O'Neill, Singh, and O'Donoghue, 2004; Raj, Walters and Rashid 2009; Unwin, 2003). Alternatively, universities are

increasingly becoming concerned with more global assessments of quality and performance. Institutions of higher education, though imparting knowledge, are after all, businesses. The relationship between service quality and increased profitability can provide a competitive advantage by repeat sales, positive word-of-mouth, customer loyalty, and competitive product differentiation (Brown and Swartz 1989; Cronin and Taylor, 1992; Parasuraman, Zeithaml, and Berry, 1988). This can be seen in higher education with reenrollment the following semester, encouraging fellow peers to enroll, or alumni encouraging their children to seek education at their alma mater.

System Availability

A primary driving force behind the demand for on-line higher education is convenience. As previously stated, this convenience allows students to overcome both logistical and temporal barriers that cannot be avoided with traditional means of higher education. It might be said that this convenience factor is the driving force behind this market. Thus, this convenience must be maintained to create value for the customer. system availability is key to maintaining convenience.

In online educational settings, systems are ubiquitous, typically available 24 hours a day during a given semester. Therefore, students have the convenience of logging in and participating at the time most convenient to them. Based on this typical system, it could be said that anytime the system is down or unavailable convenience is compromised which increases the likelihood that a student/customer could become dissatisfied. In a general e-commerce context Zeithaml, Parasuraman & Malhotra (2005) stated that the correct technological performance of the site is analogous to system availability. This is difference for online education. If the website is down frequently benefits to the customer/student are compromised and the online service provider is now at a disadvantage. When a site is not working properly, none of the other advantages of an online service can be realized.

Privacy

Privacy is typically of a high level of concern by the customer which should be mirrored by the service provider in an effort to maintain satisfied customers. In e-commerce privacy warrants such a high level of concern due to the risk derived from acquisition of personal information by outside parties which can be used in various manners that can harm the consumer. By definition, privacy is the level to which the site is safe and protects customer information (Zeithaml, et al 2005). Site reputation can significantly impact on the level of security felt by customers. In order for customers to feel that their information is being kept private, a trust has to be formed between the customer and the company. Trust is more easily acquired if the site has a reputation for providing clear and truthful information in conjunction with quality products or

services. Once a rapport is established a confidence in the site exists and repeat purchases are much more likely.

Customer Perceived Value

Customer perceived value is defined as "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (Parasuraman, et al 1988, p. 14). Perceived value is a result from pre-purchase perception, assessment during deal, and post-purchase review. Typically, there is variance between benefits received and sacrifices given. Benefits include customers' desired value, e.g., quality. Sacrifices include monetary (price) and non-monetary (time, effort) considerations (Cronin, Brady and Hult, 2000; Dodds, Monroe, and Grewal, 1991; Monroe, 1990). Monroe observes, "Buyers perceptions of value represent a tradeoff between the quality or benefits they perceive in the product relative to the sacrifice they perceived by paying the price" (1990, p. 46). To maximize a target's perceived value, the seller must either increase quality, perceived value and/or decrease price paid, time and effort to purchase. Attitudinal modules, like perceived value, are seen as backgrounds of customer loyalty (Donio, Massari, & Passiante, 2006; Hennig-Thurau, Gwinner, & Gremler, 2002).

Loyalty

Customer loyalty can be defined as "a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behavior" (Oliver, 1997, p. 392). This perspective proposes that loyal customers go through four stages (Oliver, 1997). First, one establishes a cognitive sense (belief). To establish loyalty, a customer's expectations about a good or service are fulfilled. Second, affective sense (favored attitude) is established. In this step continual satisfaction occurs through repeat purchase decisions. Third, the intent to buy becomes institutionalized. Finally, customers encounter the desire to overcome obstacles to achieve the actual purchase (Oliver, 1997).

At the heart of this study, loyalty is deemed a driving force in current and future enrollment for on-line education providers. This loyalty can create a feeling of fulfillment that promotes a repeat purchase or recommendation of a brand to others. Thus, through calculative commitment (perceived value) factors customer-brand relationships evolve which results in loyalty (Anderson and Weitz 1989). This loyalty can be applied to the relationship between students and higher education institutions where students act as consumers of the educational product or service and therefore, are the deciders of perceived value. These consumers in turn, supply their personal resource of money to the institution, and give back to their school via donations or act as active alumni based on that calculated perceived value (Yang, Alessandri, and Kinsey, 2008).

While higher education institutions devote a considerable amount of resources to promotion and recruitment to boost enrollment, retention, through loyalty, can be a far more cost-effective approach than continual customer acquisition (Anderson and Mittal, 2000; Reichheld and Sasser, 1990). Research has shown that institutions can spend up to five times as much to obtain a new customer than to retaining an existing one (Kotler and Keller, 2006; Wills, 2009). In higher education repeat enrollment is a prime example of loyalty. This type of loyalty is highly critical to the success of the program of the institution.

Reichheld and Sasser (1990) found that loyal customers are willing to (1) re-purchase despite competitive pressure, (2) cross-purchase (possibly enroll in live or online classes if one or the other curriculum is more favorable), (3) refer others, and (4) give the institution sincere feedback regarding student needs and expectations. Ultimately, a positive reputation, through loyalty, can lead to further strengthening of the student-university relationship in the higher education marketplace (Yang, Alessandri, and Kinsey 2008).

HYPOTHESIS DEVELOPMENT

System availability provides the user with assurance that their resources will be available and functioning properly at any time. During down-times, student convenience is compromised, potentially increasing the likelihood that a student/customer could experience feelings of inequity. Here, students would likely assess their contribution to their online program as greater than their return. Therefore, it is hypothesized that system availability is a determinant of perceived value among students in online higher education programs (see Figure 1):

H1 System availability is a significant, positive determinant of students' perceived value of their online education.

Privacy provides the user, in this study the student, with feelings of security and assurance that their personal or any identifying information will be held confidentially and within the confines of the student/educational program contract. As discussed previously, students who hold a positive perception of privacy for the online educational program, their perceived value of that program will likely increase. Therefore, it is hypothesized that privacy is a determinant in the students' value perception (see Figure 1):

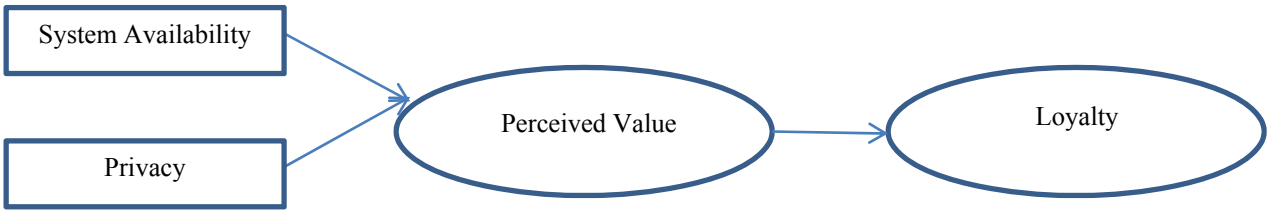
H2 Privacy is a significant, positive determinant of students' perceived value of their online education.

Research suggests that perceived value has a directly positive relationship with customer loyalty (Lemon et al., 2001; Yoo et al., 2000). Research on the conclusive linkage from perceived value to customer loyalty is extensive (Donio, Massari, and Passiante, 2006; Hennig-Thurau, Gwinner, and Gremler, 2002). Thus, through calculative commitment (an assessment of perceived value), customer-brand relationships result in loyalty (Anderson and Weitz 1989). Based on

previous findings, the following hypothesis is offered as an assessment of students in online higher education (see Figure 1):

H3 *Perceived value is significantly linked to students' loyalty.*

FIGURE 1
Proposed Structural Model



DATA COLLECTION

Current online students at a Southeastern 4-year brick-and-click university completed a self-report online survey regarding their online collegiate experience. The University offers undergraduate degrees as well as Master degrees online. A total of 146 students out of 941 students taking at least one online course responded to the initial survey request. 10 of the survey responses were partially completed and subsequently dropped from the final sample (n=136). This sample size exceeds the minimum standard of 5 respondents per item needed to conduct factor analysis (Stevens, 1996). The majority of students ranged in age between 23 and 47. Student classification consisted of primarily juniors, seniors, and those in a graduate program at 22%, 33%, and 18%, respectively. Approximately 70% of the sample indicated taking solely online classes for their purely online degree, while the remainder took a mixture of both live and online classes to complete their degrees.

System availability, the students' assessment of how well the online program's interface performed technically, was assessed using a 4-item measure created by Zeithaml, et al (2005). The measure demonstrates a satisfactorily high inter-item reliability (α=.92). Students' assessment of privacy allows insight into how they feel about the online program's ability to protect their private information. The 3-item privacy measure also created by Zeithaml, et al (2005) has a reliability(α) of .99. Students' perceived value was assessed using a 4-item measure (Zeithaml et al, 2005) gauging students' overall utility of a product based on perceptions of what is given versus what is received. The measure has a satisfactory reliability in this study (α=.84). Student loyalty, an assessment of the students' intentions to re-enroll, was measured using the same scale used by Zeithaml, et al (2005) and demonstrated solid reliability (α=.93).

RESULTS

In order to assess the nomological validity of each variable included in the study, a Confirmatory Factor Analysis was run using AMOS 19 (See Table 1). Results confirm that the system availability, privacy, perceived value and loyalty measures each demonstrate preliminary evidence of convergent validity as each item loads significantly onto its respective factor (>.60). Further, there were no significant cross-loadings (>.40) for any item onto another factor, thus demonstrative evidence of discriminant validity.

TABLE 1
Nomological Assessment Measurement Model Results (CFA)
(n=136)

CFA Factor	**Loadings[a]**
System Availability (α=.92)	
SYS1	0.81
SYS2	0.93
SYS3	0.89
SYS4	0.81
Privacy (α=.99)	
PRI1	0.96
PRI2	0.99
PRI3	0.99
Perceived Value (α=.84)	
PV1	0.63
PV2	0.72
PV3	0.84
PV4	0.92
Loyalty (α=.92)	
LOYAL1	0.98
LOYAL2	0.99
LOYAL3	0.97
LOYAL4	0.77
LOYAL5	0.6
Goodness of fit statistics:	
$\lambda^2 = 131.84$, PROB. LEVEL=.013	
df = 98	
CFI = .985	

TABLE 1 Nomological Assessment Measurement Model Results (CFA) (n=136)	
CFA Factor	**Loadings[a]**
CMIN = 1.345	
GFI = .896	
AGFI = .85	
TLI = .982	
RMSEA = .052	
PCLOSE = .438	
[a] = standardized loadings per CFA measurement model using AMOS	

The hypotheses in this study were assessed as a structural model in AMOS (see Table 2). H1, proposing that system availability is a significant, positive determinant of students' perceived value of their online education, was not supported (β=.10, sig.=.270). Contrarily to the theoretical linkage underlining security and institutional reputation (Helgesen & Nesset, 2007), it appears that program-specific privacy is not a significant determinant of student perceived value.

TABLE 2 Structural Model Results (ML) (n=136)		
Hypothesis	**Estimates[a β]**	R^2
H1: System Availability-->Perceived Value	0.23	0.08
H2: Privacy-->Perceived Value	0.1	--
H3: Perceived Value-->Loyalty	0.59	0.35
Goodness of fit statistics:		
λ2 = 132.68, PROB. LEVEL=.016		
df = 100		
CFI = .986		
CMIN = 132.679		
GFI = .896		
AGFI = .859		
TLI = .983		
RMSEA = .05		
PCLOSE = .479		
a = standardized loadings per Maximum Likelihood model using AMOS		

Contrarily, H2 was supported (β=.242, sig.=.019). Results indicate that system availability is a determinant of student perceived value. The finding highlights the importance of how well a program interfaces with its students. Apparently, students use their view of technical performance

and correctness of their user interface (e.g., program website, course-instructor interface) as a basis for assessing the value of their online education.

As to whether or not students' perceived value impacts their intentions to remain loyal to the online educational institution, results strongly suggest that not only does it impact loyalty, perceived value is a significant determinant of how loyal a student becomes. H3 is supported (β=.54, sig.=.00). The coefficient of determination provides additional insight into the scale of the impact perceived value has on loyalty among online college students (R^2=.35). It seems that college students place considerable importance on their assessment of what they render from their online education versus what they sacrifice to attain their degree (e.g., tuition, time) when determining whether or not they plan to remain loyal.

Overall model fit indices suggest an adequate fit of the model to the data (λ^2=132.68, sig.=.016). Goodness of fit indices are similar in their indication (CFI = .986, GFI = .896, AGFI = .859, TLI = .983, RMSEA = .05 and PCLOSE = .479). As a result, the model fit highlights the importance of system availability on perceived value, as well as the significant role that perceived value plays in determining students' loyalty to their online program.

CONCLUSIONS AND DISCUSSION

As suggested by findings in non-academic e-service firms, perceived value is important in attracting and retaining loyal customers. Online higher education is concerned with reenrollment, encouraging fellow peers to enroll, and alumni encouraging their children to seek education at their alma mater: all benefits realized through loyal students/graduates, all benefits rendered from programmatic excellence. This study highlights three main areas to be considered by online higher education: student privacy, system availability and the student's perception of the value of their online education. There is no question that academia can use the results found here to strategically improve their online delivery to hedge competitive action and increase the productivity of their online programs with higher student enrollment and retention (Mavondo, Tsarenko, and Gabbott 2004).

The lack of significance of privacy as a determinant of the students' perceived value is an interesting, but not surprising finding. A recent study shows that approximately 90% of the US is worries about their online privacy (TRUSTe Privacy Index, 2012). However, commentary regarding online privacy does seem to vary based on age. In a USA Today article arguing for increased consumer concern for online privacy, college students expressed their apathy regarding online privacy mainly due to their ignorance of the amount of personal information they are unknowingly sharing online (Tablante, 2013). Therefore, it seems that college students specifically have less of a concern for their online privacy in general. Thus, providing some explanation for the lack of consideration of privacy in their determination of whether or not they feel their online education has high or low value.

System availability, or the students' perceptions that the program's website, student/instructor interface site, and other course-related resources would be available and accessible at appropriate times is shown as an important factor in their value equation. Students are demonstrating their interest in communication and information exchange as a necessary ingredient for successful online education. Unlike traditional classrooms where the student is physically present with the instructor, online students must rely on the virtual interface which is oftentimes not only remote but indirect (questions and answers provided at separate points in time) (Soutar and McNeil, 1996).

Loyalty determinants are numerous in research. Loyal customers are willing to (1) re-buy products, (2) spend money on trying products across the firm's product line offerings, (3) referrals, and (4) valuable feedback to the provider (Reichheld and Sasser, 1990). The 5x cost of obtaining a new customer, as opposed to keeping an existing one has reached the mainstream in retention and loyalty research (Wills, 2009). For these reasons and the approximate 85% increase in profits, marketers have been focused on retaining valuable customers as opposed to gaining new ones since the early 90's (Kerin, Hartley, and Rudelius, 2009; Reichheld and Sasser, 1990). More recently, higher education has begun to consider student retention by way of degrees earned and graduation rates (Helgesen & Nesset, 2007).

Alumni relations, state funding, new student recruitment efforts, programmatic quality and institutional reputation have been cited as incentives for the strategic creation of loyal students. This study's results reinforce the perceived value→loyalty linkage among online higher education students. Students comprehensively assess what they have to sacrifice in order to obtain an educational degree. The strength of the relationship between a positive perceived value is shown here to statistically account for near 60% of the determination of students becoming loyal to the online educational institution. This is a significant percentage given the importance of alumni in referrals, endowments, and positive word of mouth on future students. Higher education is now able to more specifically assess drivers affecting perceived value (in addition to system availability and privacy) as indirect determinants of student loyalty.

FUTURE RESEARCH

The importance of privacy, or as highlighted in this study, the lack of importance of privacy brings three important questions to light: 1. Why do undergraduate and graduate students not use their perceptions of privacy (information protection) in their overall assessment of their perceived value of the academic program? 2. Is there an identifiable pattern across student demographics (age, degree being sought, area of study) that could point to the source of their feelings of indifference? Finally, based on past research, it can be assumed that privacy is almost assumed in online transactions (Helgesen & Nesset, 2007). Which brings on the third and final question,

Could online colleges and universities spend less time and money touting their security features while re-allocating those resources to more relevant points of differentiation?

Studies have shown that high levels of service quality positively influence customer satisfaction (Cronin and Taylor, 1992; Parasuraman, Zeithaml, and Berry 1988). This is also true by companies gaining a competitive edge from high levels of service quality (Brown and Swartz, 1989). The competitive edge was outlined by Sherden (1988) into three key aspects: value-added differentiation, enhanced productivity, and improved human resource environment. Further, research has positively linked electronic service quality with customer satisfaction (Rao, Goldsby, Griffis and Iyengar, 2011). Future research linking programmatic or institutional e-service quality to perceived value and loyalty would be interesting. Such an assessment would provide institutions of higher education with both an assessment-level analysis lens to gauge where its current programs are and where they might improve. Further, it would also allow academia to more effectively communicate with current and future students who are unsure as to the most important factors when selecting a college.

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MENTORING IN DOCTORAL PROGRAMS AND PREPAREDNESS OF EARLY CAREER MARKETING EDUCATORS

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ABSTRACT

Although the informal practice of mentoring new faculty has long been established in higher education, colleges and universities have been slow to formalize mentoring programs. Furthermore, the literature has revealed an insufficient depth of understanding of these programs. In response, this study examines the influence that formal teaching-focused mentoring during doctoral programs has on teaching preparedness by contrasting the answers of mentored early-career faculty and non-mentored faculty.

The sample consisted of 500 doctoral graduates from 60 universities gleaned from the "Who Went Where" respondents from 2006 through 2010. The highly-structured online survey was completed by 96 recent marketing PhD graduates and ABDs from these universities. Data analysis was conducted via Pearson correlation and independent samples t-tests.

This research found that only 13% of participating early-career marketing faculty had participated in formal mentoring programs. The data suggest that mentored faculty report higher early career outcomes, and that the quality of the mentoring programs yielded a positive (and significant) correlation with reported student evaluation ratings.

This study illustrates the significant benefits early-career marketing faculty derive from mentoring for their early career success. Suggestions for implementing mentoring relationships are provided.

LITERATURE REVIEW

Mentoring and its role in the professional development of new members of a profession has long been a topic of consideration in academic research and in practice (Chandler, Kram, & Yip, 2011; Mc-Dowall-Long, 2004). The long-term effects of a positive mentor-mentee relationship have been noted in various contexts and disciplines. For example, strong mentoring relationships have been associated with career satisfaction (Murphy, 2011; Peluchette & Jeanquart, 2000), higher mentee salaries (Allen, Eby, Poteet, Lentz, & Lima, 2004), and leadership development (Lester, Hannah, Harms, Vogelgesang, & Avolio, 2011).

Mentoring can contribute to improved teaching as well as being an important tool for professional development of mentors and mentees. The basic contention of academic researchers as well as practitioners is that having a good mentor-mentee relationship is very beneficial to the

professional success and satisfaction of not only the mentee, but also the mentor (Murphy, 2011; Ugrin, Odom, & Pearson, 2008). For the purposes of this paper, mentoring is conceptualized as a dyadic relationship between a senior member (mentor) of a profession or organization and a junior or new member (mentee). In some cases, the dyad is formal and purposefully assigned; whereas, in other situations, the relationship occurs more organically. In either situation, the mentor serves as a professional role model or guide and actively participates in the professional development of the mentee.

The benefits of mentoring have been noted in the context of higher education in the mentoring of new and junior faculty. Zellers, Howard, and Barcic (2008) note that although the informal practice of mentoring of new faculty has long been established in higher education, colleges and universities have been slow to formalize mentoring programs, and they refer to the current understanding of formalized faculty mentoring programs as being "relatively shallow" (p. 582). The current research addresses the shallowness of understanding by examining the influence that formal mentoring programs have on the development of new and junior faculty as teachers.

This is an extension of Johnston, Milkman, and McCoy's (2013) work that examined doctoral training in teaching of marketing educators that found that new and junior faculty that received formal teaching training during their doctoral work felt more prepared for teaching early in their careers than those that did not. These authors considered various aspects of teaching training, but not specifically mentoring, as the current research does. Rather, their survey of recent marketing doctoral graduates examined the extent that the recent graduates were exposed to various forms of teacher training (e.g. teaching assistantships, teaching full courses, for-credit teacher training programs, not-for-credit seminars, etc.) in their doctoral programs.

Johnston, Milkman, and McCoy's (2013) study found that a vast majority (>90%) of recent marketing doctoral graduates had either taught full courses or had teaching assistant responsibilities as graduate students; however, far less (<60%) reported having any formal teaching training. Albers-Miller (2007) noted that "many business professors began their teaching careers without formal training on being an effective instructor" (p. 12). This is consistent with other work in the area of teacher training (Griffith, 1997; McCoy & Milkman, 2010). Not surprisingly, the students that reported having formal teacher training also reported that they were better prepared for the teaching function as new and junior faculty. Based on these findings, we expect that marketing faculty who were mentored in their doctoral program will report that they were better prepared to fulfill faculty teaching obligations early in their careers.

Also related to the current study is Ugrin, Odom, & Pearson's (2008) examination of the importance of mentoring for new and junior faculty in terms of research and scholarly activity. These authors found that young faculty that developed and maintained strong ties with their dissertation chair (mentor) had more publications early in their careers than those that did not develop and maintain such a relationship. Peluchette and Jeanquart (2000) produced similar findings in their study of faculty mentoring. They found that early career faculty with identified mentors were more productive in terms research and scholarly activity than those that identified fewer mentors. The current research considers a similar relationship but relative to the teaching function of faculty instead of the function of research. The role and importance of mentoring in developing teaching skills is often overlooked in practice as well as in the literature.

Considering these points of view, the purpose of the current research is to examine the influence that formal teaching-focused mentoring during doctoral programs has on teaching preparedness. Next, we discuss the survey methodology to obtain data from early-career marketing educators.

METHODOLOGY

We conducted a survey to explore how recent marketing doctoral recipients (including ABDs) perceived the mentoring training they received during their doctoral programs. The sample was compiled from lists of "Who Went Where" survey respondents. The American Marketing Association Doctoral Students Special Interest Group (DocSIG) produced these surveys of successful job-seekers on the marketing academic job market. This paper uses data collected from "Who Went Where" respondents from 2006 through 2010 (DocSIG, n.d.).

The survey sample included only successful job-seekers who responded to the "Who Went Where" survey; hence people who did not respond, as well as job-seekers without a job to report, were not represented. We obtained email addresses online based on the person's name and hiring institution.

The survey was presented online. A link to the survey was sent in an email to 500 potential respondents on April 14, 2011. Attempts were made to correct failed or changed email addresses. On April 25, 2011 we re-sent the request to complete the online survey. As a result of these efforts, we received usable responses from a total of 96 people, a response rate of about 19 percent.

The list of 500 graduates from 60 universities gleaned from the Who Went Where surveys is a significant proportion of the total population of marketing doctoral graduates for the years 2006-2010. For comparison, the U.S. National Science Foundation 2010 Survey of Earned Doctorates identified 891 graduates of doctoral programs in the "Marketing management and research" subfield for the years 2006-2010 (NSF, 2012). Zamudio, Wang & Haruvy (2010) gathered data from Who Went Where surveys (and university websites) to compile a set of 677 job candidates from 112 placing marketing departments from 1997-2005.

Description of Respondents

Males comprised 67% of the sample, with the balance female. The average age of respondents was 36.4 years (Table 1). All respondents listed PhD as the type of doctorate received. When asked their field, 73 listed marketing, 17 listed business administration, two listed management, and one each listed logistics, sports marketing, and psychology.

Respondents were asked "From what university did you receive your doctorate?" These data showed that respondents were mostly recent graduates (or ABD) from U.S. institutions (80%) but some non-US doctoral programs were represented (15%) and the balance was non-responses (5%). In total, the doctoral programs of 60 institutions were represented with 9 programs identified as having formal mentoring programs. The universities identified as having formal mentoring programs were: Arizona State University, University of Auckland (New Zealand), Indiana University, Purdue University, Texas Tech University, University of Kentucky, University of Manitoba (Canada), University of North Texas, and The University of Tennessee. The hiring

institutions were also mostly U.S. institutions (60%) but some non-US hiring institutions were also represented (26%). The balance was non-responses (14%).

Table 1
Sample Characteristics: Early-Career Marketing Faculty (N=96)

Characteristic	M	N	%
Male	--	64	67
Female	--	32	33
Age	36.4 years	96	--
PhD U.S. university	--	77	80
Professor at U.S. university	--	58	60
Tenure-track	--	91	95
Years teaching full-time	2.9 years	96	--

Note: Adapted from Johnston, Milkman, & McCoy (2013).

Most respondents (96%) earned doctorates in the years 2006 – 2010 (96%). The average number of years respondents had spent teaching since leaving the doctoral-granting institution was 2.9 years.

Ninety-five percent of our respondents were in tenure-track positions, but because they were relatively early in their careers, only 2 percent were tenured. When asked "In your current position, what is the percentage of your time dedicated to teaching?" respondents reported spending an average of 39 percent of their time teaching.

RESULTS

Participation in Mentoring Program

Only 12 of the 95 usable responses reported participation in a formal mentoring program in the doctoral program, based on the question: "During your doctoral program, did you participate in a formal mentoring program for undergraduate teaching?" This subset of respondents, which we label as "mentored," consisted of 8 males and 4 females, from 31 to 44 years old (with a mean age of 36 years). The levels of marketing doctoral mentoring found in this research were similar to previous studies. Griffith (1997) found that only 5 of 44 respondents (11%) participated in faculty mentorship programs.

Eight mentored respondents earned the PhD from US universities, and one each from Canada and New Zealand, and two no responses. Seven were on the faculty at US universities, with three in Canada and two no responses. All mentored respondents earned the PhD degree, and had worked a mean of 2.9 years, and were currently serving in tenured or tenure-track faculty positions.

In four cases the formal mentoring program was "required" and in eight cases it was "voluntary," based on the question: "Was this mentoring program for undergraduate teaching required or voluntary?" Respondents reported meeting with their mentors from one to 14 times per term, with a mean of 3.9 meetings per term. Most respondents (seven) reported that their mentor observed them teaching in class.

Mentoring and Performance

All mentored respondents felt that they were "well" or "very well" prepared for teaching at the completion of their doctoral program, in response to the question: "Overall, how well prepared for teaching were you at the completion of your doctoral program?" All rated their teaching as "good" or "very good." One person reported student ratings of "adequate" while the balance reported "good" or "very good" student ratings. The lack of variance in the outcome measures, as well as the small subset of mentored respondents, makes it difficult to analyze differences between mentoring programs. Hence we focus on comparing mentored respondents with those who did not report participation in formal doctoral mentoring programs.

All respondents were asked, "Overall, how well prepared for teaching were you at the completion of your doctoral program?" on the 5-point scale previously described (very poor to very well). The mean response of those who had no mentoring was 3.6, which was lower than the mean of those who participated in formal mentoring programs at 4.5 (Table 2). The difference between means was significant at the p= 0.012 level, according to a 2-tailed t-test.

Table 2
Post-Doctoral Performance: Mentored vs. Not-Mentored

Survey items	Mentored (n=12)	Not-mentored (n=83)	Sig. (2-tailed)
How well prepared for teaching?	4.5	3.6	.01
Enthusiasm for teaching?	4.3	4.2	.88
Students rate you?	4.5	4.4	.69
Rate yourself.	4.5	4.2	.17
Note*:* 5-point Likert-type scale anchored at 1 = very poor and 5 = very good			

Mentored respondents rated their preparation as "good" or "very good." Non-mentored respondents rate their preparation as "adequate" to "good." The difference between mean responses on preparation for Mentored and Non-mentored respondents were material in an absolute sense and highly statistically significant.

We asked respondents "Please rate the level of your enthusiasm for teaching." The 5-point scale for both questions was "very enthusiastic" being a 5 and "very unenthusiastic" being a 1. The mean response was "enthusiastic to very enthusiastic" for professors who had mentoring in their doctoral program (4.3) and for those who did not have mentoring (4.2). While the enthusiasm of mentored students was higher than non-mentored in an absolute sense, the distributions for both skewed high and the mean differences were not different in a meaningful or statistically significant sense.

We also asked respondents to self-report "how do your students rate you as a college/university teacher?" The 5-point scale for both questions was "very good" being a 5 and "very poor" being a 1. The mean response was "good to very good" for both professors who had mentoring in their doctoral program (4.5) and for those who did not have mentoring (4.4). Again, the differences between the means are not meaningful.

Respondents were asked "Please rate yourself as a college/university teacher." The mean response was "good to very good" for professors who had mentoring in their doctoral program

(4.5) and for those who did not have mentoring (4.2). The difference between means is not statistically significant (p<=0.17) at typically used significance levels, but it is worth noting that the difference is in the expected direction and found with an n=12 Mentored respondent subgroup.

Table 3
Post-Doctoral Performance: Correlation with Mentoring Rating

Survey items	How well did this mentoring program prepare you for teaching?	Sig. (2-tailed)
How well prepared for teaching?	.38	.23
Enthusiasm for teaching?	.50	.09
Students rate you?	.39	.21
Rate yourself.	.06	.87

Mentored respondents were asked a second question regarding preparation: "How well did this mentoring program for undergraduate teaching prepare you for teaching? Table 3 shows the Pearson correlations between the reported "performance" of the formal mentoring program and the four overall teaching performance measures.

The correlation between mentoring "performance" and the respondents' enthusiasm for teaching is worth nothing. This correlation is fairly high (r = .50), positive as expected, and significant at the p = .09 level. This suggests that the mentors' enthusiasm for teaching may have encouraged the mentees' enthusiasm. The correlations between mentoring "performance" and the other 3 overall measures are positive, as expected, but not statistically significant

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DISCUSSION AND CONCLUSIONS

The first finding of note is the relative paucity of formal mentoring programs in marketing doctoral programs. Only 12 out of 95 respondents (13%) had participated in a formal mentoring program. An earlier study on these data found that most doctoral candidates (87%) had full responsibility for teaching a course, and 58% had formal teacher training during their doctoral programs (Johnston, Milkman & McCoy, 2013). So while most doctoral students do receive some teacher training, most are missing the benefit of one-to-one mentoring by faculty.

Despite the challenges of a small data set and self-reported outcome measures that tend to skew high, the data suggest that mentoring leads to improved early-career performance. Self-reported measures of early career outcomes are higher, in an absolute sense, for mentored respondents (with weak statistical support). Also, the quality of the mentoring program yielded a positive (and significant) correlation with reported student evaluation ratings.

The level of doctoral participation in formal mentorship programs is essentially unchanged since the Griffith (1997) study over 15 years ago. Griffith at that time called for each doctoral student to be matched to a mentor with "superior teaching capabilities" and interests similar to the doctoral student. Griffith suggested that mentors serve as advisors to students with classroom teaching duties, and to meet in preparation for the course and to check progress and multiple times during the term.

This research focused on formal mentoring programs between faculty and students in doctoral programs, specifically for teaching. Mentoring programs may also be fruitful teaching

tools for acclimating students to early-career challenges in research and service. A limitation to note is that the research identified formal doctoral mentoring programs, and did not consider informal doctoral mentoring activities or early-career "on-the-job" mentoring received while in a faculty position (e.g. Peluchette and Jeanquart (2000) found that having mentors from multiple sources is beneficial to faculty career success). Furthermore, the current research could be applied in future work to examine specific attributes of the mentor-mentee dyad such as gender or personality (Ugrin, Odom, Pearson, 2008) that either support or inhibit any positive gains as result of the mentoring relationship.

Value to Marketing Educators

First, this study is important to future marketing educators. The results suggest that doctoral students should have a mentor or mentors. If no formal program is available in the doctoral program, students should seek out an informal mentor relationship. Results suggest that being mentored improves the preparedness for teaching of early-career educators. Most doctoral students are missing the benefit of one-to-one mentoring by faculty.

Second, senior faculty in doctoral programs should provide mentoring to doctoral students. Mentoring of doctoral students will enhance their early-career success. Serving as a mentor can also be a professional development activity for senior faculty. Cherry & Wiles (2010) identified mentoring as an "informal leadership role" for senior faculty.

Finally, mentoring can occur after the doctoral program. Marketing departments should encourage "on-the-job" mentoring between senior faculty and early-career marketing faculty.

In conclusion, mentoring is an underused tool that can be applied along with formal teaching training and teaching-assistant roles, in doctoral programs, to prepare marketing faculty for early-career success. Further research to identify components of successful doctoral mentoring programs would be useful in implementing these suggestions.

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HOW SCHOOLS COPE WITH THE FAILURE TO HIRE DESIRABLE ACCOUNTING FACULTY MEMBERS IN A DIFFICULT MARKET

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ABSTRACT

Hiring desirable accounting faculty is very difficult in today's tight market. School administrators responded to an online survey seeking information as to how they staffed courses when they were unsuccessful in hiring tenure-track faculty. We also sought to examine whether schools were inclined make an offer to a person with lesser credentials than called for by their standards. Schools most often hired adjuncts or visiting professors. However, many indicated that they had created overloads for tenure-track faculty, increased class sizes, hired non-tenure-track faculty full-time, and reduced class sections. Tendencies did not differ between doctoral and nondoctoral schools or AACSB/non-AACSB schools. There was generally little interest in lowering standards to obtain faculty, but non-AACSB schools exhibited a greater tendency to do so than did non-AACSB schools. These schools were more likely to take such steps as hiring faculty without doctorates or with doctorates in nonaccounting areas.

INTRODUCTION

Every accounting department wants to hire qualified faculty who will help achieve the department's mission for years to come. Unfortunately for many schools, that has become increasingly difficult in the "seller's" market: which has existed in recent years (Hunt et al. 2009; Fogarty and Holder 2012). The current market for accounting faculty is unfavorable for schools, partly because of insufficient new PhDs to take the place of retiring "baby boomers." A joint report from the American Institute of Certified Public Accountants (AICPA) and American Accounting Association (AAA) (summarized by Plumlee et al. 2006) stated that 500 to 700 accounting faculty retire each year. While new accounting PhDs granted are up from a low of 105 in 2003, the 126 and 124 conferred in 2009 and 2010, respectively, are clearly insufficient to replace existing faculty (Hasselback 2011). Since an estimated 40% of these PhDs are earned by foreign citizens who will return to their home countries, the faculty shortage in the US is especially severe (Ruff et al. 2009). The PhD shortage is greatest in the areas of tax and auditing (Plumlee et al. 2006).

Another factor contributing to the need for accounting PhDs is Association to Advance Collegiate Schools of Business (AACSB) accreditation rules. Eighty-three percent of graduates in

masters and bachelors programs are from schools with business AACSB accreditation, while 40% have separate accounting accreditation. The number of institutions accredited by the AACSB continues to grow, as many schools believe that having such accreditation provides them with a marketing advantage over other institutions (Roller et al. 2003). This occurs despite a lack of evidence that AACSB accreditation improves teaching. Some claim that greater emphasis on research may actually reduce teaching quality (Roberts et al. 2004). The AACSB requires a certain percentage of faculty to be terminally-degreed with a PhD or DBA and to perform sufficient research to maintain their status as academically-qualified accounting faculty. While PhDs are in short supply, the number of accounting graduates and enrollments both increased by 19% from 2005 to 2008 (O'Reilly-Allen and Wagaman 2008).

The shortage of students in doctoral programs in accounting has been blamed on many factors, including the increasing length of time (five or six years in many cases) required to obtain a doctorate and the perceived stress of a PhD program (Plumlee et al. 2006). Also, the cost of PhD programs, including lost wages for several years, may discourage qualified people from entering such programs. Many programs will not admit part-time students, thus forcing them to give up jobs in order to pursue a doctorate. Although accounting faculty salaries are at historical highs, the pay is still less than that of a partner in many CPA firms. Many top students in bachelors and masters programs may not even consider a career in academia. College career guidance tends to direct students toward industry or CPA firms (Carr 2005).

Reductions in the size of doctoral programs, often due to financial reasons involving movement of university resources toward activities that generate more revenue (such as MBA or EMBA programs (Trapnell et al. 2009)), further exacerbate this problem. Carr (2005) indicates that the number of PhD programs is declining due to the high cost of providing fellowships, grants, and faculty to relatively few students. Hasselback (2010) indicates that only six new accounting PhD programs have begun in the last decade, while twelve have become inactive. Ten others have five or fewer students in the program.

Competition for desirable faculty has led universities and colleges to offer high salaries and other benefits and reduced teaching loads for the first several years. Many smaller schools lack the financial resources to compete.

Those schools which are unable to hire qualified faculty in the year a vacancy opens up have several choices. One is to increase the use of adjuncts or lecturers, causing possible problems with AACSB accreditation, as such individuals frequently lack the required terminal degree. Adjuncts frequently hold no responsibilities other than teaching, so they are unavailable for curriculum development, committee work, or student advising. Many schools do not expect such work from full-time instructors or lecturers either. Hiring such individuals could put additional pressure on existing faculty to fulfill these responsibilities. Increasing class sizes or cancelling classes are other possible ways to cope with hiring failures. These could be seen as damaging actual or perceived educational quality.

This research has two major objectives. One objective is to examine how schools respond to an inability to hire in the year of a vacancy occurring. Another objective is to discover whether schools feel the need to hire people who may not meet all of the school's standards because of the strong competition for accounting faculty. Such an approach could have negative implications for the future of accounting education.

Differences may exist between types of schools (doctoral vs. non-doctoral, AACSB accredited vs. non-AACSB accredited), and knowledge of such differences may help universities better compete with similar schools for desirable accounting faculty.

DEVELOPMENT OF RESEARCH QUESTIONS

As noted in Hunt (2003), a number of universities use adjuncts, instructors, visiting professors, and other non-tenure track faculty if they are unable to hire more permanent faculty. This, however, may create problems for schools wishing to achieve or maintain AACSB accreditation. As AACSB accreditation is widely considered the most prestigious one for business and accounting (Lindsay and Campbell 2003; White et al. 2007), many schools view achieving this accreditation as a symbol of quality that can help attract students and faculty. Extensive use of lecturers or adjuncts, generally lacking terminal degrees, could imperil a school's accreditation or make it difficult for a non AACSB- accredited school to obtain accreditation. Hunt (2003) found that schools had a number of strong reasons for hiring non tenure-track faculty. The most important reason was lack of funding to hire a tenure-track faculty member, followed by a need to fill a temporary vacancy caused by a faculty member's illness or sabbatical, desire to have an instructor teach more courses than a tenure-track faculty would teach, or an opening occurring too late in the year to hire a tenure-track faculty member. Inability to obtain a qualified faculty member was the seventh-ranked reason to hire a lecturer or instructor, but the number two reason to hire visiting faculty. A school that hoped to hire a tenure-track faculty member the following year might then turn to a one-year appointment of a visiting professor. Budget constraints faced by many public universities may lead to other choices, such as canceling sections, increasing class sizes, or increasing faculty teaching loads (Leslie 2008). This leads to the following research question.

RQ 1: How are universities staffing courses if they are unsuccessful in hiring tenure-track faculty?

In tight budgetary times, some accounting departments may worry that, if they fail to fill vacant positions, the funds to do so may not be available in the future. One possible way for schools to fill tenure-track accounting faculty positions in a difficult hiring environment would be to lower their standards. Especially at teaching-intensive schools, altering standards may be more likely to occur in the area of research than in teaching. Lowering standards would generally entail

accepting candidates with less research potential than desired or candidates from lower ranked universities. It is quite possible, however, that such individuals might be excellent teachers. Therefore, the term "lowering standards" does not necessarily imply any reduction in the quality of teaching at the school.

Another possibility is hiring faculty with doctorates in other disciplines, as suggested by the AACSB Doctoral Faculty Commission in 2003 (AACSB 2003). Marshall et al. (2006) found support for the premise that those with nonaccounting doctorates (but with the CPA designation) viewed themselves equally as successful in a variety of faculty areas as those with accounting doctorates. This implies that a doctorate itself, regardless of concentration, provides skills necessary to perform and publish research, to actively participate in academic and professional meetings, and to develop necessary critical thinking skills.

It is expected that AACSB accredited schools would be less likely to lower their standards. Hiring faculty who might not be able to perform sufficient research to remain academically qualified could lead to problems with maintaining accreditation. Doctoral schools would be expected to reduce standards less than nondoctoral schools. This would be partly because the doctoral schools would tend to be larger and have more resources to hire desirable faculty. Such schools tend to have more stringent research requirements in terms of the acceptable journal outlets for researchers.

The above discussion leads to the second and final research question.

RQ2: To what extent have universities lowered their standards in hiring tenure-track accounting faculty members?

METHODOLOGY

A survey and a cover letter were sent electronically by Survey Monkey®, an online survey service, to all U.S. schools listed in the 2010-2011 edition of Hasselback's Accounting Faculty Directory. Surveys were sent to individuals listed as the chair or head of an accounting department, or as a director of a school of accountancy. For schools without a separate accounting department, the survey was sent to the chair of a larger unit, such as a Department of Accounting and Finance or a Department of Business. If no such individual was listed, the survey was sent to the Dean of Business. The survey, which dealt with several faculty recruiting issues, was sent to a total of 851 individuals.

Those from whom we did not receive a response within approximately three weeks of the initial appeal for participation were sent a follow-up letter electronically, urging them to participate. A third and final letter was sent to those who still had not responded.

RESULTS AND DISCUSSION

We received 237 responses to the online survey. Of these, 210 respondents indicated that they had attempted to hire new faculty members during the previous three years, while 27 (all from nondoctoral schools) indicated that they had not tried to do so. Ten more individuals responded by personal email that they had not tried to hire, for an effective response rate of 29% (247/851). We believe that the response rate is likely higher when compared to those schools which tried to hire faculty during the period. Those schools which did not do so may not have been interested in completing the survey. Dividing 210 (respondents indicating they had attempted to hire) by 247 (total respondents) indicates that 85% of respondents tried to hire. An examination of Hasselback (2010) revealed that approximately 51% of U.S. accounting programs had hired tenure-track faculty in the previous three years. While the percentage that attempted to hire is certainly larger than the percentage that actually hired, since some colleges were unsuccessful, it appears unlikely that the actual percentage of schools attempting to hire was as great as 85%. Thus our response rate was likely higher than 29% in relation to the schools that attempted to hire during the period.

To determine the likelihood that the respondents represented the population, attributes of the respondents' institutions were compared with those of the population of schools in Hasselback (2010). As noted earlier, of the 210 respondents who indicated that they had attempted to hire accounting faculty in the last three years, 21 (10%) were from doctoral schools. That is similar to the 10.7 % obtained by dividing the 91 active accounting doctoral programs by the 851 U.S. schools listed in Hasselback (2010). Respondents were somewhat more likely than those in Hasselback (2010) to represent AACSB accredited business programs (63.8% vs. 53.7%) and accounting programs (27.1% to 20.4%). AACSB-accredited programs are often larger than those without such accreditation and therefore may have been more likely to have needed to fill at least one faculty vacancy during a particular three-year period. This supports our belief that our respondents reasonably represent our target group: schools that attempted to hire faculty in the previous three years.

Table 1 provides demographic information about the 210 institutions that indicated that they had tried to hire during the previous three years. As shown in Panel A, 21 respondents indicated that their schools grant doctoral degrees while 189 do not. While the number of doctoral-granting schools is relatively small, the entire population of schools that offer doctoral degrees with a concentration in accounting is small (91) in relation to the total population of schools offering accounting programs. Panel B shows that 134 schools have AACSB accredited business programs, while 76 have not.

Panel D of Table 1 shows that 56% of the respondents who attempted to hire were public institutions, while the other 44% were private schools. Finally, Panel E indicates whether respondents considered their school as primarily teaching-oriented (PTO), primarily research-oriented (PRO), or if the two areas are equally weighted (EQ). As shown, the majority of respondents considered their schools PTO.

Table 1. Demographic Information Panel A. Doctoral vs. Nondoctoral-Granting Institutions		
Type of School	**Frequency**	**Percent**
Non-doctoral-Granting	189	90.0
Doctoral-Granting	21	10.0
Total	210	100.0

Table 1. Demographic Information Panel B. AACSB vs. Non-AACSB-Accredited Institutions		
Business School AACSB-Accredited?	**Frequency**	**Percent**
Yes	134	63.8
No	76	36.2
Total	210	100.0

Table 1. Demographic Information Panel C. Separate Accounting AACSB Accreditation		
Accounting Program Separately Accredited?	**Frequency**	**Percent**
Yes	56	26.7
No	154	73.3
Total	210	100.0

Table 1. Demographic Information Panel D. Public vs. Private Schools		
Type of School	**Frequency**	**Percent**
Public	118	56.2
Private	92	43.8
Total	210	100.0

Table 1. Demographic Information Panel E. Teaching/Research Balance		
Type of School	**Frequency**	**Percent**
Primarily teaching-oriented	116	55.2
Primarily research-oriented	17	8.1
Equal weight	77	36.7
Total	210	100.0

Fifty-seven schools, four doctoral and 53 nondoctoral, were unable to hire tenure-track faculty to fill all vacancies in the year they occurred. This breaks down into 34 AACSB accredited schools and 23 non-AACSB accredited.

The first research question was concerned with how university administrators staffed courses when they were unsuccessful in hiring tenure-track faculty. Table 2 shows a number of steps that administrators could take in such an event. The most common steps were to hire adjuncts and to hire visiting professors. However, to a considerable extent, schools created overloads for tenure-track faculty, increased class sizes, hired non-tenure-track faculty full-time, and reduced sections of classes. No significant differences were noted between doctoral and nondoctoral schools or between schools with AACSB accredited business programs and those without accreditation.

Table 2. Steps Taken by Schools Unsuccessful in Hiring Faculty the Year of the Vacancy

Steps Taken if Unsuccessful in Hiring	Number of responses
Hired adjunct	36
Hired visiting professor	20
Created overloads for tenure-track faculty	16
Increased class sizes	15
Hired non-tenure-track faculty full-time	15
Reduced sections of classes	13
Cancelled elective classes	7
Created overloads for nontenure-track faculty	5
Had PhD student teach course	1

Activities that might seriously disrupt the learning experience (increasing class sizes, reducing number of sections of classes, or cancelling elective classes), were less widely used than hiring adjuncts or visiting faculty. A number of schools, however, created overloads for tenure-track faculty. There is a risk in expecting existing faculty, many making considerably lower salaries than the market rate for new PhDs, to teach more courses for often a very modest pay benefit. Such policies might hasten retirements and/or encourage marketable faculty to relocate.

Research question 2 was concerned with the extent to which universities lowered their standards in hiring tenure-track accounting faculty members. Participants responded to the question, "To what extent did your department make offers to individuals who did not meet current standards?", on a 7-point scale from 1 ("not at all") to 7 ("to a significant extent"). Table 3 shows means and standard deviations related to this question. As shown in Panel A, both doctoral and nondoctoral institutions showed little interest in lowering their standards to obtain faculty. Those at nondoctoral schools had an average response of 2.09 (sd=1.706), while those at doctoral schools had an extremely low mean of 1.21 (sd=.426). The between-group difference was not significant (Mann-Whitney U-test p value =.118). When the sample was broken down between AACSB and non-AACSB accredited schools (Panel B), the means were similarly low (AACSB mean 1.63

(sd=1.276) vs. 2.59 (sd=1.974) for non-AACSB), but the difference was significant (Mann-Whitney U-test p value =.002). However, on a 7-point scale, the means in either case suggest that no group was strongly likely to lower their standards.

Table 3. Offers Made to Less-Than-Fully-Qualified Individuals
Panel A. Doctoral vs. Nondoctoral*

	Doctoral (N=14)	Nondoctoral (N=134)	Total (N=148)	P-Value**
Mean	1.21	2.09	2.01	.118
Std. Deviation	.426	1.706	1.647	

Table 3. Offers Made to Less-Than-Fully-Qualified Individuals
Panel B. AACSB vs. Non-AACSB*

	AACSB (n=90)	Non-AACSB (N=58)	Total (N=148)	P-Value**
Mean	1.63	2.59	2.01	.002
Std. Deviation	1.276	1.974	1.647	

*Participants responded to the question, "To what extent did your department make offers to individuals who did not meet current standards?", on a 7-point scale from 1 ("not at all") to 7 ("to a significant extent").
**Based on Mann-Whitney U-Test

An examination of frequencies for the question reported in Table 3 yielded some interesting results. Ninety-five schools gave a "1" to the aforementioned question, so only 53 schools reported any lowering of standards. However, it is disquieting that 36% of respondents (53/148) did so. Higher numbers on the 1-7 scale could indicate either more offers issued to unqualified people or one or two offers made to highly unqualified people. The proportion of AACSB accredited and non-AACSB accredited schools reporting numbers greater than 1 were similar to their proportion of total respondents. However, accredited schools that lowered standards were much more likely to report scores of 2, 3, or 4, while non-AACSB accredited schools were more likely to report high scores of 5, 6, or 7. So non-AACSB accredited schools that reported lowering standards were more likely to do so in a major way than AACSB accredited schools. As noted earlier, "lowering standards" may have nothing to do with teaching quality. Many schools' "ideal" candidate would have the terminal degree and demonstrated research ability to accompany an excellent teaching record, in order to enhance the school's reputation and/or maintain desired accreditations. For a teaching-focused school and/or a school lacking the resources to hire such a candidate, the research-related credentials may be the first ones to be relaxed.

The results discussed above should be viewed as qualified good news for the profession. Although some schools did lower their standards, overall indications of that behavior were relatively low on a 7-point scale even for non-AACSB accredited schools. Lowering standards could negatively influence an accounting department's research productivity. Participants who

responded to open-ended questions regarding advice they would give to other schools urged patience and not "settling" for less qualified applicants. This probably reflects the long-term nature of tenure-track hiring. Most schools would rather hire adjuncts or take other temporary measures than saddle the department for years to come with an individual who would be a poor fit.

In a separate question, participants from schools that had hired at least one faculty member during the period were asked to indicate whether they had engaged in particular activities. The activities and the number indicating they engaged in those activities are shown in Table 4.

Table 4. Actions Taken to Hire Desirable Faculty (1)
Panel A. Doctoral vs. Non-Doctoral Granting Schools (2)

	Doctoral-Granting	Non-Doctoral-Granting	Total	P-Value (3)
Recruited accounting faculty with other specialties	1	26	27	.128
Recruited faculty without PhD or DBA but with extensive professional experience	1	32	33	.060
Recruited faculty with PhDs in business areas other than accounting	1	16	17	.397
Recruited faculty with PhD/DBA degrees from non-AACSB accredited schools	0	16	16	.110
Recruited faculty with less research background than expected for previous hires	0	5	5	.397

Notes

(1) There were 116 schools indicating that they were successful in filling at least one position in the year in which the vacancy was initially announced. Of these, 14 were doctoral granting; 102 were not.
(2) Numbers in cells represent the number from each type of school indicating they took a particular action.
(3) Based on Pearson Chi-Square, two-sided

Only five indicated that they had recruited faculty with less research background than expected. However, schools demonstrated some flexibility in their recruitment. Twenty-seven respondents indicated that they recruited faculty with specialties other than those they were seeking, 33 recruited faculty without PhDs but with extensive professional experience, 17 recruited faculty with PhDs in other areas of business, and 16 recruited faculty with terminal degrees from non-AACSB accredited schools. Although major differences were noted between doctoral and non-doctoral schools, they were not significant in Chi-square tests due to very low numbers of doctoral schools that took such action.

One exception is for recruiting faculty without a PhD or DBA but with extensive professional experience, which was marginally significant (Pearson Chi-Square=3.551; p=.06). However, AACSB accredited and non-AACSB accredited business programs differed in several areas. Non-AACSB accredited schools were more likely to hire faculty without doctorates but with extensive business experience (Pearson Chi-Square=16.176; p<.001). Non-AACSB schools were also more likely to hire those with doctorates in nonaccounting areas (Pearson Chi-Square=9.023; p=.003) or hire faculty with doctorates from non AACSB-accredited programs (Pearson Chi-Square=4.759; p=.029).

Table 4. Actions Taken to Hire Desirable Faculty (1) Panel B. AACSB vs. Non-AACSB				
	AACSB*	Non-AACSB*	Total	P-Value
Recruited accounting faculty with other specialties	14	13	27	.212
Recruited faculty without PhD or DBA but with extensive professional experience	11	22	33	.000
Recruited faculty with PhDs in business areas other than accounting	5	12	17	.003
Recruited faculty with PhD/DBA degrees from non-AACSB accredited schools	6	10	16	.0269
Recruited faculty with less research background than expected for previous hires	2	3	5	.298

*Of 116 schools indicating that they were successful in filling at least one position in the year in which the vacancy was initially announced, 72 were AACSB-accredited and 44 were not.

The greater willingness of non-AACSB accredited programs to hire faculty with doctorates in nonaccounting areas, with terminal degrees from non-AACSB accredited schools (possibly with limited research requirements), or those lacking doctorates but with extensive business experience, could present problems if those schools plan to seek AACSB accreditation. The lesser tendency of AACSB schools to take such measures may indicate the pressure on accredited schools to avoid steps that could endanger their accreditation. On the other hand, the steps taken if unsuccessful in hiring in a given year (such as obtaining adjuncts or lecturers) did not vary significantly between accredited and non-AACSB accredited schools. This may indicate that short-term solutions to hiring problems are similar among schools, but long-term solutions are likely to be affected by AACSB requirements.

The AACSB itself has recently recognized the seriousness of the hiring problem. It has split the former category of "Academically Qualified" into two categories, "Scholarly Academic" (SA) and "Practicing Academic" (PA) (AACSB 2013). A new PhD or DBA would have SA qualification for five years. The research expectation for sustaining SA status after that would be higher than for a faculty member who would become PA. The latter might focus on professional interaction by consulting and working with various professional organizations. As a result, those with less research potential may become more viable candidates for faculty positions.

CONCLUSIONS AND FURTHER RESEARCH

Overall, the results provide good news for those who fear that the accounting faculty shortage will lead to a decline in the quality of accounting education. Those schools that are unable to hire qualified faculty in the year a vacancy occurs are more likely to hire temporary faculty than cut classes or increase class sizes, which might damage the students' educational experience. While schools appear willing to examine somewhat different faculty qualifications than in the past,

they are generally unwilling to reduce their standards to hire tenure-track faculty. Even schools that were not AACSB accredited seemed reluctant to lower their standards. This may indicate that many such schools are looking to apply for AACSB accreditation in the future.

With the explosion of online accounting courses, a considerable body of research has begun looking into the relative effectiveness of online courses in comparison to traditional in-class delivery (e.g. Bryant et al. 2005; Chen et al. 2013; Vamosi et al. 2004). Some schools may be unable to raise class sizes due to physical limitations of classroom space, but can offer larger classes online, thereby providing a way to teach more students with fewer professors. Given the continuing advances in technology over the last several years, and instructors' improving ability to enhance interaction, the gap in relative effectiveness of online education seems likely to continue to become narrower. This is particularly true in lower-level accounting courses (Chen et al. 2013). As a result, online education might provide another way of dealing with difficulties in hiring qualified faculty. Further research appears warranted to better understand the types of courses that lend themselves to online instruction, and how to fully leverage this method of delivery.

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DO STUDENTS LEARNING STYLES IMPACT STUDENT OUTCOMES IN MARKETING CLASSES?

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ABSTRACT

The objectives of this study are to investigate the impact of course design on student outcomes and to determine if student learning styles moderate or modify that impact. Data were gathered from 563 students at a major university. Student respondents were enrolled in a business course with one of three different course designs: experiential, participative, and traditional. Results indicate course design influences student's outcomes in the courses. In addition, student learning styles moderate this influence and have the greatest impact on student outcomes in the experiential course designs, but also have an impact in both participative and traditional designs.

INTRODUCTION

Many changes have been introduced into marketing education recently. The view that marketing education needs to be revised and revamped has become more noticeable since the turn of the century and even accrediting agencies are beginning to alter their guidelines for designing these classes. AACSB guidelines suggest marketing students need a better understanding in many areas, including ethics, international marketing, communication skills, professionalism, etc. Marketing departments and business schools have responded positively. For example, one study reported a recent fivefold increase in the number of ethics courses being offered in business schools (Christensen et al. 2007). In addition, much marketing curriculum has been designed to equip students with strong communication skills, flexibility, decisiveness, professional skills, and professionalism by providing more active learning elements in the marketing classroom (Glaser-Segura et al. 2010; Peltier, Scovotti, and Pointer 2008).

Large corporations themselves recognize the need for more effective methods of training and education and have begun to adopt newer, active learning designs (e.g., Fritz, Kaestner, and Bergmann 2010). Some industries even recognize that hands-on, or experiential, education inspires students to become innovators (Almgren 2010). It is essential, then, that business schools in general, and marketing programs specifically, heed these concerns and continue to utilize the most effective educational methods possible to provide students with necessary knowledge and skills. Continuing to explore and identify characteristics or styles of education that can have the greatest and most permanent impact on students is therefore becoming an increasingly crucial issue. This important mission of marketing professors, however, is complicated by the changing student, and

made even more complex because many colleges and universities are seeing an increase in non-traditional older students. Trying to create a classroom experience that will maximize learning for all types of students is almost dauntingly difficult. Differences in these varied populations of students may best be reflected by their learning styles.

Learning style refers to the inclination each one of us has to perceive, interpret, and respond to information in a certain way (Whetten and Cameron 2002). To be successful, everyone must be constantly learning. If people stop learning, they quickly become outdated and out of touch in their professions. Lifelong learning is a key requirement, therefore, to successful lives and careers. Marketing professors are responsible to get our marketing students on the path of this lifelong learning of marketing so they will be able to maintain their preparedness throughout their lives. It is necessary that we take into account the different learning styles and attempt to create favorable learning environments for students of all learning styles.

This paper reports results from a study that considered student data from three different types of course designs – traditional, experiential, and participative. The study examines the moderating effects of learning styles on the student outcomes in these three course designs.

LITERATURE REVIEW

Course Designs

A review of the existing course design literature indicates that a clear distinction exists between active and passive types of designs. Active course design, in all its forms, incorporates increased student involvement in the classroom, whereas passive designs are more instructor-centered. Active course designs are based on the assumption that an active learner, or one who is more engaged in the learning process, learns much more effectively and the learning experience is more intense and permanent than it is for passive learners enrolled in a traditional lecture-style course (e.g., Allegretti and Fredrick 1995; Derrick and Carr 2003; Hargrove 2003; Klein, Schnackenberg, and Smith 1997; Kolb 1983; Labinowicz 1980; Orsmond and Stiles 2002; Sharan 1980). Recent research has specifically examined business students in colleges and universities and shows that course design can significantly impact student performance (Black 2010; Black and Wingfield 2008; Filbeck and Smith 2001; Keltgen 2006; Laditka and Houck 2006; Sims 2002; Smith 2005; Tucker, Stewart, and Schmidt 2003; Wingfield and Black 2005).

A preponderance of recent business education literature suggests business schools' curriculum is experiencing a shift from passive course designs to active course designs (e.g., Frontczak 1998). Empirical evidence suggests business students prefer designs that are active over more passive designs (Nulty and Bennett 1996). Evidence also suggests that favorable attitudes toward course design leads to higher achievement (Young, Klemz, and Murphy 2003) and that matching course design with learning styles results in greater learning (Dunn et al. 1990).

Experiential learning is a type of active course design. It can be defined as *"the process whereby knowledge is created through the transformation of experience" (Kolb 1983, p. 38). Kolb*

indicates the crucial first step is to provide the experience from which the learning comes. Experiential educators are generally aware that experiences alone are not inherently effective for learning. The experiences have to be relevant to the learning goals and then the learners must have time and opportunity to reflect on the experience. Kolb's definition is based on six assumptions: "Learning (a) is a process, not an outcome; (b) derives from experience; (c) requires an individual to resolve dialectically opposed demands; (d) is holistic and integrative; (e) requires interplay between a person and the environment; and (f) results in knowledge creation"(from Kayes 2002, pp. 139-140). These assumptions intimate that learners will be required to respond "to diverse personal and environmental demands that arise from the interaction between experience, concept, reflection, and action in a cyclical … fashion" (Kayes 2002, p.140).

Keeping these assumptions in mind, experiential learning can encompass a wide array of methodologies spanning from outdoor, adventure-based learning such as Outward Bound, to other forms that are more conducive to a classroom setting. Case studies are commonly used in many business classes. In addition, giving students self-learning instruments also provides experiential learning opportunities. Many universities offer business credit for internships which are also effective experiential learning experiences. Also, many in-class activities are experiential in nature. In addition, assignments can be experiential if they require students to apply concepts learned in the classroom to things they will be expected to do in the "real world" after they graduate. For example, professors may require students to write a marketing plan, create an actual advertisement or develop a performance appraisal system or a compensation plan. Experiential methods rely heavily on discussion and practice, emphasizing personal application of material and encouraging students to develop belief systems, understand how they feel about an area of study, and take appropriate actions given a specific environment (Jones and Jones 1998).

Participative learning is also a form of active learning. It can be defined as engaging the learner in the learning process (Mills-Jones 1999). Many may be confused by a similar term known as cooperative learning. Cooperative learning is a mode of learning that requires students to work together in groups and participate in class discussions. Participative learning, on the other hand, gives students the opportunity to take an active part in determining the types of activities and/or assignments they perceive will best help their learning. Methods that can be utilized in the classroom to assure participative learning include the following: student participation in the syllabus design, students writing potential exam questions, student participation in determining the grading scheme for a course, student participation in class and small-group discussions, etc. By involving students in these decisions, participative learning theory suggests the students will feel more accountability for completing assignments, etc. (Mills-Jones 1999).

Traditional lecture classes create an environment for passive learning. This course design emphasizes learning of conceptual knowledge by focusing on facts and theoretical principles (Jones and Jones 1998; Thornton and Cleveland 1990; Whetten and Clark 1996). The conceptual emphasis of this design can be important to the development of a strong theoretical foundation upon which students can build in future courses. This design typically involves few opportunities

for students to learn experientially or to participate in the decisions in the classroom. Professors or instructors basically provide a syllabus and class schedule, they deliver daily lectures, and the majority of grades are based on exams, especially exams made of multiple-choice, true-false and matching items.

It has been suggested that students learn more effectively when they are able to experience learning through active participation in the learning process (Allen and Young 1997).
Active learning is also linked to critical thinking (Paul 1990), experiential learning (Kolb 1983), and reflective judgment (King and Kitchener 1994; Kitchener and King 1981). Research also suggests experiential learning leads to higher levels of retention for student learning (e.g., Van Eynde and Spencer 1988); however, while others have suggested there are no significant differences exhibited by students on measures of comprehension or satisfaction when different course designs are utilized (Miner, Das, and Gale 1984).

Learning Styles

It seems clear that active course designs are generally more effective for imparting knowledge to students. However, it is possible that students with certain learning styles actually learn better in a more traditional, passive classroom. Therefore, in designing the most effective classroom, it is important to consider student learning styles also.

Learning style refers to the inclination each one of us has to perceive, interpret, and respond to information in a certain way (Whetten and Cameron 2002). When individuals encounter information, they are more inclined to concentrate on and learn from certain kinds of inputs than others (Kolb 1983). Kolb's (1983) work identifies and measures four distinct learning styles.

Some people are more inclined to take in information through direct experience. They learn by tangible, concrete, and sensual encounters. The perceptible, felt qualities of information are easier to capture, so these individuals tend to immerse themselves in situations in order to learn from them. They learn best through experience and involvement. People with these tendencies are likely to interact with other people to get their information. This learning style is known as *concrete experience*. This learning style represent a receptive, experience-based approach to learning that relies heavily on feeling based judgments. People with this learning style tend to be empathetic and people-oriented. They generally find theoretical approaches to be unhelpful and prefer to treat each situation as a unique case. They learn from specific examples in which they can become involved. They tend to be oriented more towards peers and less towards authority in their approach to learning, and benefit most from feedback and discussion with people with the same learning style (Kolb 1983).

Other people tend to best take in information that is abstract, symbolic, or theoretical. They learn most effectively when they encounter ideas and theories and then have a chance to think about them logically and analytically. They are more likely to learn from information that they can rationally examine or intellectually explore. People with this learning style are likely to get their

information from books, rather than from interacting with others. This learning style is known as *abstract conceptualization.* This learning style indicates an analytical, conceptual approach to learning relying heavily on logical thinking and rational evaluations. People with this learning style tend to be oriented more towards things and symbols and less towards other people. They learn in authority-driven, impersonal learning situations that emphasize theory and systematic designs. In addition, they frustrated by and benefit little from unstructured discovery learning approaches, like exercises and simulations (Kolb 1983).

After encountering information, other people are inclined to examine it from different perspectives, to ruminate about it, and to explore the various meanings that might be present. They are inclined to observe and scrutinize information. Quick judgments are avoided by these learners, and pondering and reflecting about the information is typical. This learning style is known as *reflective observation*. This learning style indicates a tentative, impartial and reflective approach to learning. People with this learning style rely heavily on careful observation in making judgments and prefer learning situations, such as lectures, that allow them to take the role of impartial objective observers. They also tend to be introverts (Kolb 1983).

Conversely, still other learners are inclined to act immediately on the information they receive. They respond by being proactive, by testing out the new information, or by applying it to an immediate problem or situation. They experiment to investigate the implications and utility of the information. By actively applying it, they can form alternative hypotheses about it. Kolb (1983) describes this learning style as *active experimentation*. This learning style indicates an active doing orientation to learning that relies heavily on experimentation. People with this learning style learn when they can engage in such things as projects, homework, or small-group discussions. They dislike passive learning situations, such as lectures. They also tend to be extroverts (Kolb 1983).

In a recent meta-analysis, Loo (2002) found that marketing students tended to have the learning styles of concrete experience and reflective observation. On the other hand, students majoring in accounting, a more quantitative business discipline, tended to have a combination of active experimentation and abstract conceptualization learning styles. These results suggest the possible importance of learning styles to selections of majors and ultimately, selection of professions.

In addition to students with certain learning styles selecting majors, there is evidence that student learning styles impact their selection of other more specific course alternatives. Morrison, Sweeney, and Heffernan (2003) identified learning style differences between students in on-campus classes and students in off-campus classes. Further, the selection of class size may also be related to learning styles (Karakaya, Ainscough, and Chopoorian 2001).

Cultural differences have also been examined in relationship to learning styles. One study found differences in learning styles between Australian and Chinese business students (Heffernan et al. 2010). Another study examined differences in learning styles between U.S., Indian and Korean business students (Jaju, Kwak, and Zinkhan 2002). Thus, culture and perhaps the secondary education system in these countries have an impact on how a person develops his or her learning

style. Subsequently, some scholars have recommended tailoring courses to best fit the student population's learning styles, as much as possible (e.g., Court and Molesworth 2003; Morrison, Sweeney, and Heffernan 2003; Morrison, Sweeney, and Hoffman 2006). Other scholars advocate that such an approach has the possibility of excluding effective learning for those students in a class with a learning style other than the prevailing one. These scholars suggest classes be designed with a wide range of learning experiences and course designs to appeal to a wider range of learning styles (e.g., Karns 2006).

The effect of student learning styles on student performance seems to be what the marketing education profession should be focused on. Research has indicated a significant impact of learning styles on student performance (Tom and Calvert 1984).

HYPOTHESES

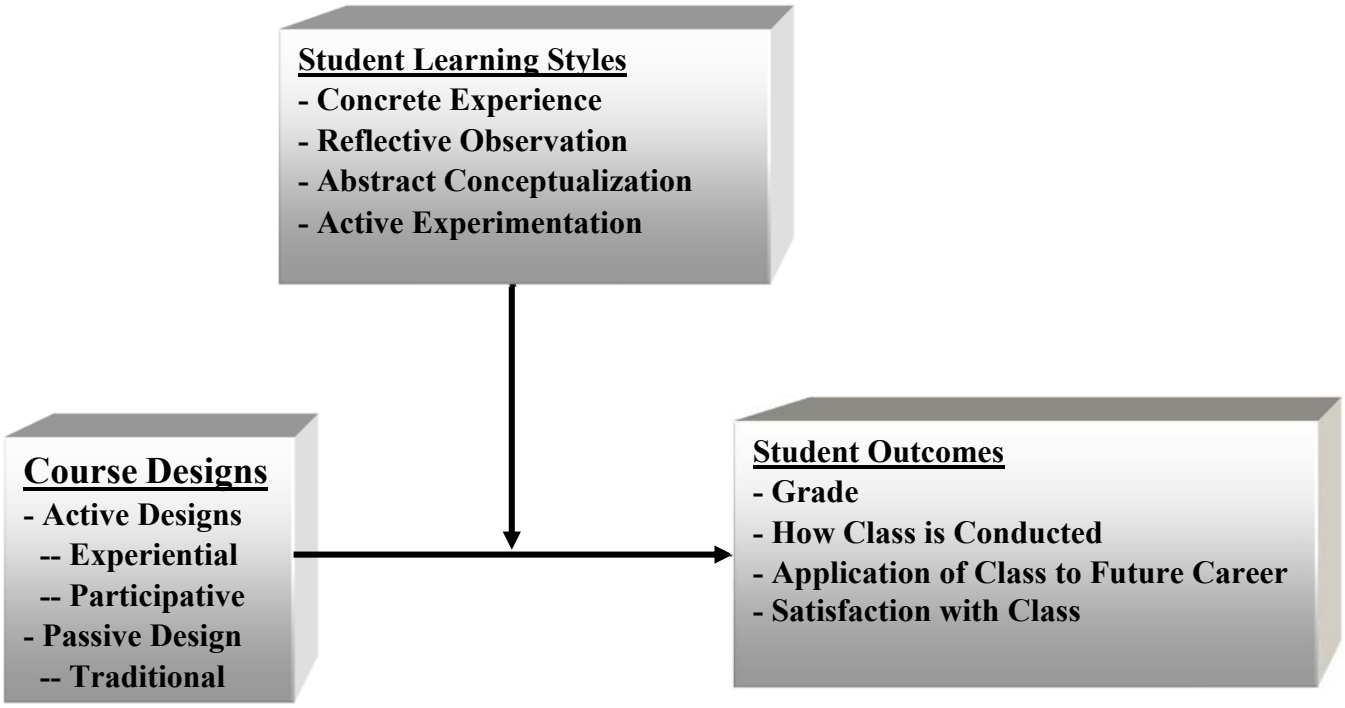
Based on the literature review, a model of the moderating impact of learning styles on the effects of course design on student outcomes is examined. The model is presented in Figure 1. Specific hypotheses for these relationships could be formed. However, this is the first research to examine these specific relationships, so a general set of hypotheses assessing the various relationships suggested by the model are offered. Therefore, it is hypothesized that student learning styles will impact the effects of course designs on student outcomes.

METHODOLOGY

To test the hypotheses, investigators prepared and delivered courses for the three types of designs—experiential, participative, and traditional. Elements were infused into each course design to assure that students could differentiate between the designs and to insure that each design provided the appropriate type of learning experience. The *traditional lecture* courses were designed to present knowledge to the students through lectures given by the instructor. Evaluation of how students performed in these classes was based on reading the textbook, taking notes during lectures and performing well on exams, quizzes, and assignments, which were based solely on the textbook and the lectures.

The *experiential* courses gave practical experience that could be used by the student in an occupation related to the course. In these courses, students completed exercises and assignments that helped them understand how to apply the knowledge they gained during the semester. Also, they studied the actions of different companies through case studies and were tasked to apply their responses to similar situations. They also completed exercises and assignments that gave them insights about them and "hands on" experiences.

Figure 1: Model of the Moderating Effect of Learning Styles



The *participative* courses allowed students to have a great deal of control over how they would be evaluated by including them in the decisions on how these classes would be conducted. Students participated in syllabus design and decisions concerning grading options, basically, deciding how performance would be evaluated in the course. In addition, about two-thirds through the semester, the instructors came up with several different grading options from which each student could choose to help them focus on the last part of the semester and to reinforce their participation. Finally, instructors utilized group work, presentations and in-class discussions providing opportunities for students to impart information to each other.

Toward the end of the semester, a survey designed to measure the variables described in the hypotheses was administered in each of the targeted classes. Using the information from the various marketing and management courses, each of which used a different design, 563 useable questionnaires were collected. Some characteristics of our sample are as follows. There were 203 students enrolled in classes with the traditional lecture design, 151 students in classes with the experiential design, and 209 students in classes with the participative design. Of the total, 339 were females and 224 were males. Also, 58.6% (n=330) of the students were Caucasian, 34.8% (n=196) were Hispanic, 2.5% (n=14) were African Americans, 2.3% (n=13) were Asian American or

Asian, .4% (n=2) were Native American, leaving 1.2% (n=7) from other ethnic backgrounds. The average age of the student respondents was 24.41 years. Of the different majors in the classes, 38.5% (n=217) were marketing majors, 21.7% (n=122) were management majors, 7.8% (n=44) were accounting majors, 4.1% (n=23) were finance majors, 3.9% (n=22) were MIS majors, and 23.4% (n=) were general business majors. Nearly all students were juniors (n=168, 29.8%) or seniors (n=376, 66.8%), but 6 students (1.1%) were sophomores, and 13 students (2.3%) were graduate students. The majority of the students were employed at least part-time (n=415, 73.7%) and most had several years of work experience (mean=6.62 years). The majority of the student respondents were average-to-good students with an average GPA of 3.10 and an average grade for the manipulated classes of 2.94. Finally, 58 students (10.3%) were primarily *concrete experience* (CE) learners, 119 students (21.1%) were *reflective observation* (RO) learners, 104 students (18.5%) were *abstract conceptualization* (AC) learners, and 268 (47.6%) were *active experimentation* (AE) learners.

The questionnaire included a manipulation check to ensure that students actually perceived the various course designs to have key associated characteristics. Results of the manipulation check indicated that students perceived differences in the three course designs based on specific characteristics of each. The questionnaire also included multiple-item measures for each of the three self-reported outcomes. The other outcome was the actual grade the student received in the course, converted to its number equivalent.

RESULTS

Reliabilities were checked for each of the three multiple-item measures using Cronbach's alpha (Cronbach 1951). The hypothesized relationships were then statistically analyzed using both regression (OLS) and t-tests. Results of the reliability analyses are as follows. Four items were designed to measure student perceptions of how the class was conducted and this unidimensional measure was reliable (Cronbach's α = .91). Six items were designed to measure student perceptions of the usefulness of the class to their future careers and this unidimensional measure was also reliable (Cronbach's α = .92). Finally, nine items were designed to measure student satisfaction with the class and this unidimensional measure was found to be reliable (Cronbach's α = .95). These measure reliabilities exceed the minimum suggested level of
Cronbach's α = .70 (Nunnally 1978).

Results of hypotheses testing are found in Tables 1 and 2. First, Table 1 reports results of assessing the direct effects of course designs on student outcomes. Regression analysis indicates some support that there are significant differences between active (experiential and participative) and passive course designs. Courses with active designs resulted in better student grades than did courses with passive (traditional) designs ($t = 2.414$, $p < .05$). In addition, active designs resulted in more positive student perceptions on how the course was conducted than did passive designs ($p = 1.719$, $p \leq .10$). However, there were no significant differences between active and passive

designs in satisfaction with the course and student perceptions of how useful the course would be in their futures.

Table 1: Results of Hypothesis Testing

Course Designs	Student Outcomes			
	Grades	Satisfaction	Course Usefulness	Course Conduct
Active Designs vs. Passive Designs	2.414**	0.233	0.514	1.719*
Experiential Design vs. Lecture Design	1.755*	0.268	0.806	0.218
Participative Design vs. Lecture Design	3.076***	1.105	0.107	2.177**
Experiential Design vs. Participative Design	4.466***	0.740	0.868	2.141**

***Significant at $p \leq .01$
** Significant at $p \leq .05$
* Significant at $p \leq .10$

Regression analyses also partially indicated differences between experiential and passive course designs. Courses with experiential designs resulted in better student grades than did courses with passive designs ($t = 1.755$, $p \leq .10$). However, there were no significant differences between experiential and passive designs in satisfaction with the course, student perceptions of how useful the course would be in their futures, and student perceptions on how the course was conducted.

Further, regression analyses suggest some differences between participative and passive course designs. Courses with participative designs resulted in better student grades than did courses with passive designs ($t = 3.076$, $p \leq .01$). In addition, participative designs resulted in more positive student perceptions on how the course was conducted than did passive designs ($p = 2.177$, $p \leq .05$). However, there were no significant differences between participative and passive designs in satisfaction with the course and student perceptions of how useful the course would be in their futures.

Finally, regression analyses found some differences between the two active designs, experiential and participative. The participative design resulted in both higher grades in the course ($t = 4.466$, $p \leq .01$) and a more positive student perception of how the course was conducted ($t = 2.141$, $p \leq .05$) than did the experiential design.

Table 2 reports the results of hypotheses testing when student learning styles are added. For the traditional course design, the only significant differences were shown to be between the

concrete experience (CE) and *active experimentation* (AE) learning styles. Students with an AE learning style were more satisfied with the course ($t = 2.017$, $p \leq .10$) and were more positive about how useful they thought the course would be in the future ($t = 2.283$, $p \leq .05$).

Table 2: Results of Hypothesis Testing

Course Design	Learning Styles	Student Outcomes: Grades	Satisfaction	Course Usefulness	Course Conduct
Traditional	Concrete Experience vs. Reflective Observation	0.105	0.211	0.550	1.104
	Concrete Experience vs. Abstract Conceptualization	0.609	0.008	0.619	1.183
	Concrete Experience vs. Active Experimentation	1.109	2.017*	2.283**	1.210
	Reflective Observation vs. Abstract Conceptualization	0.629	0.217	0.062	0.064
	Reflective Observation vs. Active Experimentation	1.379	0.653	0.950	0.015
	Abstract Conceptualization vs. Active Experimentation	0.673	0.933	0.888	0.086
Experiential	Concrete Experience vs. Reflective Observation	0.104	2.850***	2.220**	2.162**
	Concrete Experience vs. Abstract Conceptualization	0.854	1.623	1.700*	1.778*
	Concrete Experience vs. Active Experimentation	1.059	0.818	0.024	0.088
	Reflective Observation vs. Abstract Conceptualization	0.896	1.109	0.501	0.317
	Reflective Observation vs. Active Experimentation	1.149	2.164**	2.675***	2.200**
	Abstract Conceptualization vs. Active Experimentation	0.037	0.926	2.015**	1.804*
Participative	Concrete Experience vs. Reflective Observation	1.119	2.573***	2.419***	0.938
	Concrete Experience vs. Abstract Conceptualization	1.413	0.040	0.058	0.470
	Concrete Experience vs. Active Experimentation	0.350	0.501	0.438	0.758
	Reflective Observation vs. Abstract Conceptualization	0.477	1.379	1.098	0.508
	Reflective Observation vs. Active Experimentation	1.102	2.049**	1.801*	1.982**
	Abstract Conceptualization vs. Active Experimentation	1.623	0.794	0.601	1.446

***Significant at $p \leq .01$ **Significant at $p \leq .05$ *Significant at $p \leq .10$

For the experiential course design, more differences between learning styles became apparent. First, differences between *concrete experience* (CE) and *reflective observation* (RO) learning styles indicate that students with the CE style are more satisfied with the class than those with the RO style ($t = 2.850$, $p \leq .01$); CE students are also more positive about the application of the class in their futures ($t = 2.220$, $p \leq .05$) and are more positive toward how the class was conducted ($t = 2.162$, $p \leq .05$) than are the RO students. In addition, CE students are more positive about the application of the class in their futures ($t = 1.700$, $p \leq .10$) and are more positive toward how the class was conducted ($t = 1.778$, $p \leq .10$) than are the students with an *abstract conceptualization* (AC) learning style. Further, students with a *reflective observation* (RO) learning style are less satisfied with the class than are students with an *active experimentation* (AE) learning style; RO students are also less positive about the application of the class in their futures ($t = 2.675$, $p \leq .01$) and are less positive toward how the class was conducted ($t = 2.200$, $p \leq .01$) than are AE students. Finally, students with an *abstract conceptualization* (AC) learning style are both less positive about the application of the course to their futures ($t = 2.015$, $p \leq .05$) and less positive about how the class was conducted ($t = 1.804$, $p \leq .10$) than are AE students.

The results in Table 2 also indicate differences in the participative classes. CE students were both more satisfied with their course ($t = 2.573$, $p \leq .01$) and were more positive about its application to their future ($t = 2.419$, $p \leq .01$) than were RO students. Also, RO students were not only less satisfied with their course than were AE students ($t = 2.049$, $p \leq .05$), they were also less positive about the application of the course to their futures ($t = 1.801$, $p \leq .10$) and were less positive about how the course was conducted ($t = 1.982$, $p \leq .05$).

DISCUSSION AND CONCLUSIONS

The results of this study, while indicating that active course designs are clearly more effective on student outcomes than are traditional designs, also suggest that these results are modified by student learning styles. Learning styles do not play much of a role in the effects of course design on student outcomes for the traditional designs. The only results occur when comparing students with a *concrete experience* (CE) learning style with students with an *active experimentation* (AE) learning style, with more positive results for students with the *active experimentation* style. Since AE students tend to learn best when engaged in such things as projects and homework, while CE students find theoretical approaches to be unhelpful, these differences make sense. Traditional classes offer some features that would be consistent with AE learners, but favorable features are not as plentiful for CE learners.

Learning styles made the most difference in the experiential learning styles. CE learners had more favorable outcomes than both *reflective observation* (RO) learners and *abstract conceptualization* (AC) learners. Since RO learners prefer learning situations, such as lectures, this result is no surprise. AC learners learn best in authority-directed, impersonal learning situations that emphasize theory and systematic analysis and are frustrated by and benefit little from most

unstructured experiential learning approaches, so the result is not surprising in this case either. In addition, AE learners had more positive results in experiential classes than both RO learners and AC learners. Some features of experiential courses, such as experiential-based projects, would tend to appeal more to the AE learner and not so much to the other two learning styles (RO and AC).

Learning styles also moderated significantly in participative courses. As is the case with experiential courses, CE learners have more positive outcomes than do RO learners. Additionally, similar to the discussion for experiential learning, some features of participative courses, such as small-group discussion, would tend to appeal more to the AE learner and not so much to the RO learner, making sense of this result.

Another interesting result of this study is that no significant results were found among the learning styles for actual grades for the courses. This finding suggests that learning styles have an impact on student perceptions of the various course designs, but not on their actual performance in the course.

One weakness of this study is the fact that the analysis was conducted using a sample of students from only one university and using only marketing and management courses. To be able to make stronger and more general conclusions, the impact of a greater number of universities and courses across all areas of the business curriculum should be examined. In addition, other student characteristics, such as personality, level of stress, ability or inability to trust, etc., might further interact with the course designs to confound the findings. Further research should be conducted to attempt to identify the factors that might influence how meaningful and long-lasting a business student's education will be.

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INDIVIDUAL LEVEL CULTURAL ORIENTATIONS AND MOTIVATION FOR COLLEGE: A CASE OF BUSINESS STUDENTS

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ABSTRACT

We examined business students' cultural orientations at the individual level and their influence on motives for college. Data was gathered from 216 undergraduate students of a major historically black university in southern U.S.A. Our initial findings indicate that the sample exhibits collectivist, low power distance, high uncertainty avoidance, and low masculinity orientations. Employing simultaneous regression analysis, we found that: (1) the collectivist orientation is strongly associated with intrinsic academic motivation, (2) the low power distance orientation is strongly associated with intrinsic academic motivation to experience stimulation and (3) the strong uncertainty avoidance orientation is associated with both the intrinsic and extrinsic academic motives. The outcome has implications for managing motivation in the academic context.

INTRODUCTION

In today's fast-paced world, motivation is an essential element for success in any endeavor including education. When examining students, understanding their motivation system is important to gaining insight for increased productivity in school work. However, the increased diversity in classrooms also comes with diversity in academic motives and learning behaviors of students, which sometimes poses challenges for students, faculty, and administrators in higher education. Therefore, understanding how different cultural backgrounds influence the way students are motivated is important in identifying the appropriate strategies to ensure that students are engaged in academic activities and stay motivated. This study, therefore, explores the link between students' cultural orientations and academic motivation.

With respect to the link between culture and motivation, a handful of research has examined this relationship in the work setting. Emery and Oertel (2006) examined the relationship between Hofstede's cultural dimensions and Vroom's expectancy theory of motivation (valence, expectancy, instrumentality), and found that cultural-based values were only significantly related to valence. Other studies include the test of the moderating influence of cultural values on motivation and its outcomes (e.g. Dorfman & Howell, 1988; Lam, Chen, & Schaubroeck, 2002). For instance, Erez & Earley (1987) have examined collectivism and power distance as moderators of the relationship between goal setting and performance. Thus, following this stream of enquiry,

the objective of this study is to test the relationship between individual level cultural orientations—using the seminal work by Hofstede—and the multi-dimensions of academic motivation based on self-determination theory.

The framework of national culture with respect to: individualism/collectivism, power distance, uncertainty avoidance, and masculinity (Hofstede, 1980) have culminated in extensive research on culture including the prediction of employee attitudes and behaviors (Tsui, Nifadkar, & Ou, 2007; Kirkman, Lowe, & Gibson, 2006). A comprehensive review of research examining the influence of the different cultural orientations on attitudes, behaviors and organizational outcomes by Kirkman et al. (2006) indicates that cultural orientations, whether at the individual, group, or national level are predictors of attitudes and organizational outcomes such as organizational citizenship, leadership behavior, and motivation among others. Hence, our focus on the individual level cultural orientations follows prior research on this subject. In a study of culture and leadership, Dorfman and Howell (1988) (c.f. Clugston, Howell, and Dorfman, 2000) have operationalized Hofstede's cultural dimensions as values at the individual level of analysis, and of significance to this study are these cultural orientations and their link to SDT in the academic context.

Although this study follows in the footsteps of prior research on motivation and culture, it contributes to the literature in two key ways. First, motivation is essential in the academic context, but research examining the cultural values as determinants of motivation has focused exclusively in the work setting, with very limited study in the academic context. Research has shown that cultural differences may lead to differences in motive emphases in the academic setting (Church & Katigbak, 1992). This suggests differences in motivational systems with potential cultural undertones. Therefore, examining student's cultural perceptions and the relationship with academic motivation will increase our understanding of student's motives and drives. Second, there are different conceptualizations of motivation (see Ambrose & Kulik, 1999; Eccles & Wigfield, 2002), but the research on cultural values and motivation has focused on expectancy theory (Emery & Oertel, 2006), goal setting theory (Erez & Earley, 1987), and cognitive evaluation theory (Eylon & Au, 1999). None of the studies has focused on self-determination theory (SDT). SDT posits that individuals experience a sense of choice in the initiation and regulation of one's actions or activities (Deci, Connell, & Ryan, 1989), providing a more encompassing theory of motivation in both work and academic contexts. Academic motivation encompasses multiple components (Church & Katigbak, 1992), and SDT differentiates between intentions or actions that are self-controlled and those that are externally influenced, regulated by choice and compliance respectively (Deci & Ryan, 1985; Deci, Vallerand, Pelletier, & Ryan, 1991). Research on motivation has successfully employed the SDT subsystems (intrinsic, extrinsic, amotivation) in the academic contexts (e.g. Baker, 2004: Vallerand & Bissonnette, 1992). The importance of SDT is that it underlies most work motivation theories, including contemporary theories like goal setting and job characteristics model (Gagné and Deci, 2005), hence, this study should add to our knowledge of culture and motivation.

Finally, our focus on business students is important due to the need to identify business students' aspirations in a globalized business world and how best to engage students of varied cultural backgrounds. To engage our students, we need to understand *where they are coming from and where they are going*.

THEORETICAL BACKGROUND

Cultural Orientations

Culture is the "shared motives, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives, transmitted across generations" (House, Hanges, Javidan, Dorfman, & Gupta, 2004, p. 15). Hence, culture comprises values, attitudes and behaviors. Value is the broad tendency for an individual to prefer certain states of affairs over others (Hofstede, 2001), which determines one's subjective beliefs. Four dominant value orientations: Individualism/collectivism, power distance, uncertainty avoidance, and masculinity are the focus of this study due to the strong theoretical support for linking these orientations to academic motivation. Moreover, these four dimensions of culture are supported by other cultural frameworks postulated in the literature (House et al., 2004; Trompenaars, 1993), and are widely studied (e.g. Clugston, et al., 2000; Earley, 1994; Earley & Gibson, 1998; Tsui et al., 2007). Our theorized link between the cultural orientations and the SDT motivation systems are presented in the subsequent section.

Self-Determination Theory

There are different philosophical perspectives underlying motivation, but one encompassing definition by Pinder (1988) was adapted for this study. He defines motivation as "a set of energetic forces that originate both within as well as beyond an individual's being to initiate behavior and to determine its form, direction, intensity, and duration" (p.11). This implies that motivation may be engendered by either internal or external factors that influence behavior, which is in line with the postulations of self-determination theory (Deci & Ryan, 1985). Self-determination theory (SDT) differentiates between intentions or actions that are self-determined and those that are controlled—regulated by choice and compliance respectively—and leading to the intrinsic-extrinsic dichotomy (Deci & Ryan, 1985; Deci, Vallerand, Pelletier, & Ryan, 1991). Ryan and Deci (2000) applying the intrinsic-extrinsic dichotomy maintain that behaviors may be internalized whereby the regulation of behavior is transferred from outside to inside of the individual. Thus, when one is self-determined, their reasons for engaging in certain behaviors are fully internalized (Eccles & Wigfield, 2002). Based on these perspectives, Deci (1975) and Deci and Ryan (1985; 1991) have conceptualized the three sub-systems of motivation to include intrinsic motivation, extrinsic motivation, and amotivation. Again, we focus on the intrinsic and extrinsic aspects since we have no theoretical basis for arguing that certain cultural orientations will lead to amotivated behavior more than others.

Intrinsic motivation

Intrinsic motivation simply refers to doing an act for the sake of it, or for the pleasure and satisfaction it engenders (Deci, 1975), resulting in some form of internal locus of control (self-determination). Thus, intrinsic motivation stems from the innate psychological needs of competence and self-regulation. Hofer (2006) noted that intrinsic motivation has been shown to foster conceptual understanding, creativity, involvement and preference for challenge. Vallerand, Blais, Briere, and Pelletier (1992) have since postulated the three types of intrinsic motivation within the academic context as intrinsic motivation to know (IM-to know), intrinsic motivation to accomplish (IM-to accomplish), and intrinsic motivation to experience stimulation (IM-to experience stimulation).

IM-to know relates to several constructs that are applicable to the academic context such as exploration, curiosity, learning goals, intrinsic intellectuality, and intrinsic motivation to learn. It is defined as "performing an activity for the pleasure and satisfaction that one experiences while learning, exploring or trying to understand something new" (Vallerand et al., 1992, p.1005). *IM-to accomplish*, also referred to as the mastery of motivation, is defined as "engaging in an act for the pleasure and satisfaction involved when attempting to accomplish or create something" (Vallerand et al., 1992, p.1005). Individuals with intrinsic motivation to accomplish a task will focus on the means of achieving the task rather than the end. For instance, students may attempt to surpass themselves by carrying on work beyond the stated requirements for the pleasure and satisfaction. *IM-to experience* stimulation involves activities that engender stimulating sensations. It is postulated to include concepts like feelings of excitement and aesthetic stimulating experiences (Vallerand et al., 1992). For instance, "students go to class to experience stimulating discussions or read a book for the intense feeling of cognitive pleasure because the book or passage is exciting (p.1006)."

Extrinsic motivation

In contrast to intrinsic motivation, the extrinsic sub-system of motivation does not result from the sake of the act being performed but from the behavior as a means to an end (Deci, 1975). An individual experiences his/her actions as stemming from pressures, rewards, or other forces external to the self. Hence, behaviors are characterized by an external perceived locus of causality. An extrinsically motivated student will seek for approval and external signs of worth. With this perspective on motivation, the focus of learning is on prizes, grades, test scores, and vocations (Ginsberg, 2005). The three types of extrinsic motivation postulated by Deci (1975) and Deci and Ryan (1985; 1991) in the academic context are ordered along a continuum, from high to low self-determination as: identified regulation, introjected regulation, and external regulation.

External regulation involves acts that are regulated through external means like rewards and constraints (Vallerand et al., 1992). For instance, a student might perform an activity in class because his/her teacher insisted on it, which is externally influenced and is not chosen or self-determined (Vallerand & Bissonnette, 1992). *Introjected regulation* refers to the internalization of the reasons for an action, and although internal, it is not truly self-determined because it is limited to past external contingencies (Vallerand & Bissonnette, 1992). For instance, a student might study

the night before exams because one believes it is what good students do (Vallerand et al., 1992). *Identified regulation*—the highest level of self-regulation among the extrinsic sub-systems—occurs if one's behavior becomes valued and judged to be important for the individual, hence, is chosen by oneself. One example is choosing to study rather than being told, because it is important to you.

CONCEPTUAL MODEL AND HYPOTHESIS

We present arguments below showing the relationship between the cultural values and academic motivation. Our conceptual framework of culture-SDT link (depicted in Figure 1) is based on the premise that intrinsic motivation is highly self-determined and intrinsically regulated while the extrinsic motivation is low self-determined and externally regulated. In view of the bi-polar nature of the four cultural orientations considered in this study (i.e. one may be high or low on a given orientation), our hypotheses are stated such that the alternative is conceptually supported and may also be tested depending on the orientation of the sample.

Individualism/Collectivism and Academic Motives

Hofstede (2001) defines individualism (IDV) orientation as standing for a society in which the ties between individuals are loose, with a focus on one's immediate interest. Individualistic society is, therefore, characterized by attitudes of independence from in-group, achievement, freedom, autonomy and emphasizes individual initiative, creativity, and self-started activity (Triandis, 1994). At school, individual initiative is encouraged, and self-esteem and self-respect are considered good for academic performance. Parents or societal influences are limited to supporting the student's choices in school—autonomy-support—hence, individuals have control over choices in academic and career pursuit. Although individual initiative and drive for achievement can also lead to competition, hence, focus on prices, we assumed that the high focus on self in this context will lead to high innate interest and high self-regulation. On the other hand, collectivism (COL) stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty. Collectivist societal norms include: identity based on the societal systems, emotional dependence of individuals on institution, ideal membership, and imposition of activities—i.e. there is increased societal influence or control over the choice of activities; hence in school, individuals are strongly judged based on outcomes like grades, degree, profession, etc. Collectivist self-understanding is based on the value their in-group or society place on their actions and behaviors which favours the group (Early, 1994). One's innate interest in a collectivist's culture is subject to the in-group or societal values with a focus on the outcome of their actions in an attempt to please the in-group or society. For instance, families place prestige on their children's educational achievements such as obtaining certain degrees or entering certain professions. Hence, self-interest is subjected to the interest of parents or family. Thus, the increased emphasis on personal needs in individualistic cultures will enhance individuals' initiation and self-regulation in academic activities while the emphasis on societal obligations in collectivist societies will result in less self-regulation. This implies that students with high

individualistic orientation should have a strong predisposition for intrinsic academic motives than the extrinsic academic motives. Although SDT suggests that one can be autonomously collectivistic or autonomously individualistic (Chirkov & Ryan, 2001), we believe the later will prevail in this context.

H1 *Individualism (versus collectivism) will be more positively related to (a) intrinsic motivation to know, (b) intrinsic motivation to accomplish, and (c) intrinsic motivation to experience stimulation than the extrinsic motivation dimensions (identification, introjected & external regulation) and vice versa.*

Power Distance and Academic Motives

Power distance (PD) is a measure of the interpersonal power or influence between a boss and subordinate as perceived by the less powerful (Hofstede, 2001). The characteristics of high power distance societies include high level of dependency, existence of high inequality, and stressing on coercive and referent power. Individuals in high power distance cultures are dependent on their superiors, with the potential power to determine or direct the behavior of subordinates (Mulder, 1977). High power distance is associated with theory X type relationships (Hofstede, 2001; Bochner & Hesketh, 1994), leading to preference for exchange-based security and economic relationships more than self-development (McGregor, 1960). At school, students depend on the excellence of the teacher while parents are supposed to cooperate with teachers in ensuring norms among students. Thus, the innate need and interest in activities is suppressed by the desire of the powerful or superiors (parents, teachers, or the larger society) for extrinsic outcomes. The highly controlled environment will inhibit self-efficacy and intrinsic motivation (Ambrose & Kulik, 1999), hence, low self-determination.

Conversely, in low power distance societies individuals assume some level of equality, with little dependence on superiors. The relationship between superiors (e.g. teachers, parents) and subordinates (e.g. students) are such that they are seen as equals, whereby teachers are viewed as experts who provide only advice, with students being highly autonomous (Hofstede, 2001). The equalization of power between superiors and subordinates in this context will increase subordinates confidence and their self-efficacy, hence, high self-regulation in choice of activities. The high autonomy in choosing activities will be aimed at satisfying one's innate interest, with limited influence from superiors. Thus, students in low power distance societies should be more predisposed to the intrinsic motives than students in high power distance societies.

H2 *Low Power distance (versus high power distance) will be more positively related to (a) intrinsic motivation to know, (b) intrinsic motivation to accomplish, and (c)intrinsic motivation to experience stimulation than the extrinsic motivation dimensions (identification, introjected & external regulation) and vice versa.*

Uncertainty Avoidance and Academic Motives

Uncertainty avoidance (UA) is the extent to which the members of a society feel threatened by uncertain or unknown situations (Hofstede, 2001). Where UA is low, the society is comfortable with high degree of ambiguity and opens to the unknown, unlike in a high UA society. In low UA societies, individuals see their environment as an opportunity for innovation and change (Punnett, 2004). High UA society is rather characterized as rule-oriented, whereby individuals seek to avoid uncertainty through formal rules and avoidance of risks. The fear of failure reduces the level of personal drive, self-efficacy, and self-regulation. Dimitrov (2006, p.4) asserts that "learning methods for high and low-uncertainty avoidance cultures are similar to those in high and low-power distance culture, respectively." Hofstede (2001) also stated that "students in high UA countries expect their teachers to be the experts who have all the answers"(p. 162). Parents and teachers may play an influential role in student behavior leading to low self-regulation in terms of the academic activities and choices. On the other hand, students of low-UA societies despise structures and are prone to open ended learning situations with a high sense of self-determination. The high sense of responsibility and self-determination with minimal regulation by parents and teachers in the low-UA societies should orient students towards the intrinsic motives in their academic pursuit.

H3 *Low uncertainty avoidance (versus high uncertainty avoidance) will be more positively related to (a) intrinsic motivation to know, (b) intrinsic motivation to accomplish, and (c) intrinsic motivation to experience stimulation than the extrinsic motivation dimensions (identification, introjected & external regulation) and vice versa.*

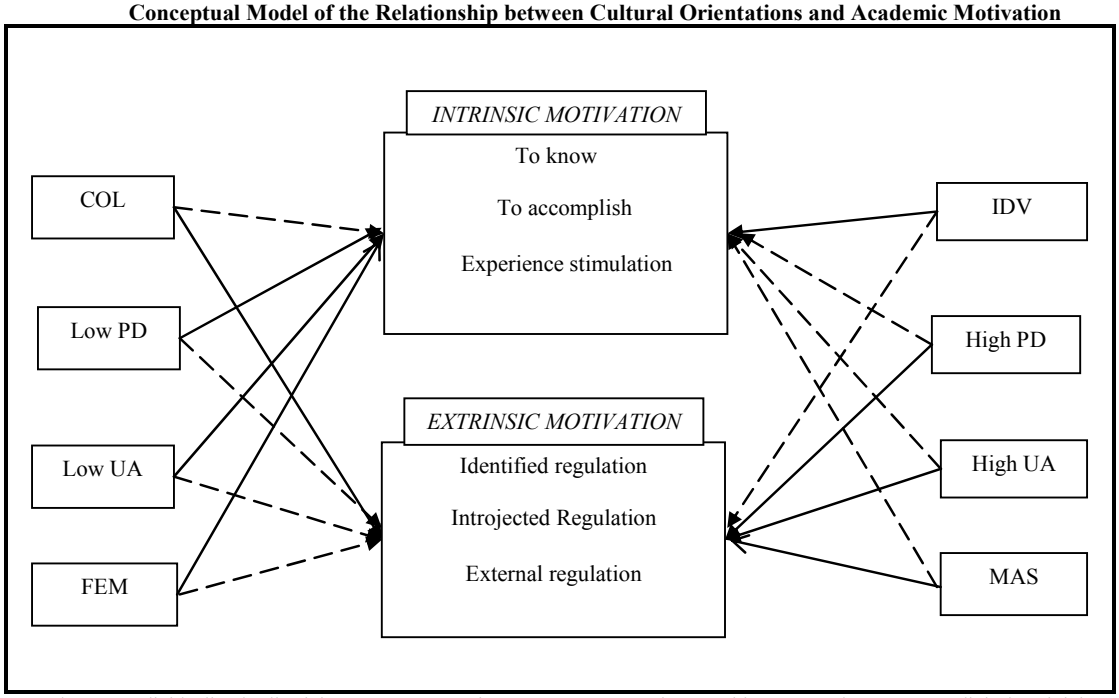
Masculinity/Femininity and Academic Motives

The Masculinity dimension is defined by Hofstede (2001) as: "standing for a society in which social gender roles are clearly distinct: Men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which gender roles overlap: Both men and women are supposed to be modest, tender, and concerned with the quality of life" (p. 297). Societies with a high MAS score are characterized by belief in individual decisions and strive for the best, with the belief that money and things are important—live in order to work. Societies with a low MAS score, which is referred to as femininity, are more relation oriented and view work activities as means rather than end—work in order to live. They have higher norms for emotional stability and believe in quality of life, including others. Hofstede (2001) asserts that at, school, high MAS societies place emphasis on student performance, special awards are given for good students and teachers, and hence, failing in school is considered a disaster. Identifying the best students among many is the norm and curriculum choices are guided by career expectations. However, in low MAS a culture failing in school is viewed as a minor incident and students' social adaptation is important. Achieving average performance may be the norm, and there are no special awards for students; hence, there is low competition for grades and prices. Moreover, curriculum choices are

guided by an intrinsic interest rather than the extrinsic factors. These indicate that students in more masculine societies will be more predisposed to extrinsic motivation while those in less masculine societies will be more intrinsically motivated.

H4 *High masculinity (versus low masculinity) will be more positively related to (a) identified regulation, (b) introjected regulation and (c) external regulation than the intrinsic motivation dimensions (IM-to know, IM-to accomplish, & IM-to experience stimulation) and vice versa.*

Figure 1
Conceptual Model of the Relationship between Cultural Orientations and Academic Motivation



IDV/COL = Individualism/Collectivism, PD = Power Distance, UA = Uncertainty Avoidance, MAS/FEM = Masculinity/Femininity
(———— Expected strong positive path) (- - - - - - - - Expected weak positive path)

METHOD

Participants and Procedure

Survey questionnaires were administered to 216 undergraduate business students of a large, historically black university in Southern USA. Although our sample is not representative of the typical U.S. population, we assumed that the national level values will be exhibited at the individual level among this sample. The U. S. has been broadly classified as individualistic, with low power distance, low uncertainty avoidance and high masculinity orientations (Hofstede, 1980; House et al., 2004). Class sessions were randomly selected and with the permission of instructors, students were informed that they have been selected to participate in a study of cultural orientations

and academic motivation, though voluntarily. Students were encouraged to answer all questions, and those who had already completed the survey in another class were refrained from further participation. No extra credit was awarded for participation.

The sample was made up of 67% female and 33% male, and predominantly African American (92.5%), with the remaining 7.5% from other racial categories (Caucasians, Black Africans, Hispanics, Asian). Thus, the sample is predominantly made up of U.S. nationals (native born). The average age of the sample ranges between 20 and 24 (63.4%), with majority (84.1%) of the respondents under the age 30. On classification, the majority were juniors and seniors (80.3%), with 71.1% reporting GPAs of between 2.5 and 3.49. Only 17.5% of the sample reported GPA of 3.5 and above.

Measures

Motivation for college was measured using the Academic Motivation Scale (AMS) developed by Vallerand et al., (1992). We measured six facets of the AMS involving the intrinsic and extrinsic subsystems (IMTK, IMTA, IMES, EMID, EMIT, and EMER). Although various academic motivation scales exist, this scale is based on a complete conceptualization of academic motivation with good psychometric properties (Cokley, Bernard, Cunningham, Motoike, 2001). Respondents were asked the broad question: "why do you attend college" and they had to respond to this question based on 24 statements on the response set of 1 = does not correspond at all to 7 = correspond exactly (See Appendix 1 for scale items).

We used the psychological *cultural orientations* scale developed by Dorfman and Howell (1988) as adapted by Clugston et al. (2000). The scale was developed as an extension of the framework by Hofstede to the individual level of analysis. The dimensions including individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity are designed to elicit individual value scores, such that high scores indicate collectivism, strong power distance, high uncertainty avoidance and high masculinity respectively. To increase variability in responses, we utilized a 7-point Likert type scale from 1 (strongly disagree) to 7 (strongly agree). See appendix 2 for scale items (c.f. Clugston et al., 2000).

Control variables, comprising demographic data on age, gender, GPA, and academic classification were controlled for their potential confounding effect. Research has shown that demographic factors can contribute to the variance in academic motivation (e.g., Vallerand et al., 1992; Vallerand & Bissonnette, 1992).

Overview of Analysis

Two separate confirmatory factor analyses (CFA) were performed on the multi-dimensions of academic motivation and cultural orientations using LISREL 8.72 (Joreskog & Sorbom, 2005). CFA is used to test the fit of the measurement model, hence, the validity of the constructs (convergent & divergent). This was followed by analysis of variance (ANOVA) to determine differences in the cultural orientations among the respondents after the scale items were summated and the average determined. The least square simultaneous regression analyses were then used to test our hypothesized relationships.

We estimated the variance inflation factor (VIF) of all model parameters, and the statistics (1.031-1.134) were all below the threshold of 10.0 (Hair, Anderson, Tatham, & Black, 2006), indicating multicollinearity may not be a serious problem in this study. The normal probability test shows no appreciable skewness or kurtosis (statistics within ± 2.58). Moreover, graph of the standardized partial regression plots also show no consistent pattern in residual plots and no correlated error terms, indicating none of the assumptions of linear regression analysis appears to have been violated.

RESULTS AND DISCUSSION

Preliminary Analysis

CFA analysis was performed to test the fit of the six facets of academic motivation to the data. Different competing models (one, two, and six-factor models) were tested. The results in Table 1 show that the six-factor model of academic motivation was a bette fit to the data (e.g. $\chi^2 =$ 563.48, *df* = 215, RMSEA = .085, CFI = .96, NNFI = .96; AGFI = .77), providing support for the discriminant validity among the sub-scales of the academic motivation.

Table 1
Results of Confirmatory Factor Analysis of Academic Motivation and Cultural Orientations

MODELS	χ^2	Df	RMSEA	SRMR	NNFI	CFI	AGFI
Academic Motivation							
Null model	8926.66	253					
Single-factor	1556.91	230	.160	.110	.89	.90	.55
Two-factor (IM & EM)	989.99	229	.122	.098	.92	.93	.67
Six-factor (IMTK, IMTA, IMES, EMID, EMIN, & EMER)	563.48	215	.085	.068	.96	.96	.77
Cultural Orientations							
Null model	3379.69	231					
Single-factor	1465.51	209	.168	.150	.67	.70	.53
Three-factor (IDV/COL, PD+MAS, UA)[a]	1324.93	208	.159	.340	.72	.74	.56
Four factor (IDV/COL, PD, UA, MAS)	424.79	203	.072	.075	.92	.93	.85

*N = 216. [a] Represent model with the best indices among the three-factor combinations. IM = Intrinsic motivation, EM = Extrinsic motivation; IMTK, IMTA, IMES = Intrinsic motivation to know, accomplish, experience stimulation; EMID, EMIN, EMER = Extrinsic motivation identified, introjected, external regulation. IDV/COL = Individualism/collectivism; PD = Power distance; UA = certainty Avoidance. *p < 0.05 **p < 0.01*

The results in Table 1 also show that the four cultural dimensions measured in this study provides a better fit to the data with significant standardized item loadings and good fit statistics ($\chi^2 = 424.79$, *df* = 203, RMSEA = .072, CFI = .93, NNFI = .92, AGFI = .85). The motivation and

culture scales were all internally consistent, with alpha coefficients above .70 (Hair et al., 2006). These outcomes demonstrate the adequacy of the measures and the validity of the constructs.

The descriptive statistics provides a general description of the sample including the assessment of cultural orientations that will determine the direction of our hypotheses tests. From Table 2, the mean score for IDV/COL (M = 4.10, SD = 1.32), and UA (M = 5.86, SD = 1.07) are both high and above their respective scale mid-points (3.5). The mean score for PD (M = 3.19, SD = 1.27) and MAS (M = 2.72, SD = 1.61) are low and below the scale mid-point. One sample t-tests with scale mid-point (3.5) as test value show that these mean scores are significantly different from the test value. This finding indicates that this sample has moderate collectivist oriented value, low power distance, high uncertainty avoidance, and low masculinity (femininity) orientations. The weak power distance orientation is consistent with the macro-level classification of US nationals (Hofstede, 2001: House et al. 2004), but the moderate collectivist, high UA and low MAS are inconsistent with the national level categorization. Although, the outcome is contrary to some studies of undergraduate students in the U.S. (e.g. Lee, Aker, and Gardner, 2000), the collectivist orientation is consistent with the findings by Jackson, Coloquitt, Wesson, Zapah-Phelan (2006). Jackson and colleagues found that undergraduate students scored high on five psychological collectivism orientations examined. The collectivist orientation may have been influenced by the academic context; the use of group activity or project groups as an instructional strategy employed at the college level and operation of fraternity and sorority social groups may be fostering in-group values among students. The high UA orientation is not entirely surprising in view of the high uncertainty in the economy following the 2008/2009 recession. Our sample with large junior and senior level students may be affected by the bleak job prospects in the country, leading to the feeling of threat and high uncertainty. On the other hand, the low masculinity may be due to scale items that seem to compare male and female roles, hence masculinity versus femininity. Therefore, our sample with a high proportion of female respondents may have contributed to the low score. Independent sample *t*-test on gender ($t = 4.74$, $p < .01$) show that female students had lower mean score (2.37) than male students (3.44). These initial outcomes indicate the importance of sub-cultures (variability in national culture) within the broad national categorization. The hypotheses tests will, therefore, be based on these reported orientations.

The mean scores for all the intrinsic and extrinsic motivation dimensions were high and above their respective scale mid-point of 3.5. However, the mean scores for the extrinsic motivation constructs; EMID (M = 6.20, SD = 0.84) and EMER (M = 6.31, SD = 0.92) appear to be higher than the intrinsic motivation constructs; IMTK (M = 5.64, SD = 1.10), IMTA (M = 5.30, SD = 1.17), and IMES (M = 4.42, SD = 1.39). Paired sample t-tests show that there are significant differences on mean scores among the intrinsic and extrinsic dimensions (except for EMIN and IMTK; $t = 1.06$, $p > .05$), indicating significantly higher extrinsic motivation than intrinsic motivation among this sample. This finding is not entirely surprising since grades, degrees and career or professions are the main focus in the academic setting. With respect to gender, we found a significant difference between female and male groups only on IMTK scores ($t = 2.49$, $p < .05$). The female group scored higher on IMTK (M = 5.75, SD = 1.01) than the male group (M = 5.36, SD = 1.17). Thus, female students may be more intrinsically motivated for knowledge acquisition, which is consistent with the findings by Vallerand & Bissonnette (1992). There were no significant differences on motivation scores among groups based on GPA, classifications, and age.

Table 2
Means, SD, Intercorrelations and Reliabilities of study Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. IMTK	**.81**													
2. IMTA	.76	**.79**												
3. IMES	.61	.63	**.70**											
4. EMID	.59	.56	.34	**.73**										
5. EMIN	.53	.63	.47	.59	**.79**									
6. EMER	.41	.42	.17	.78	.59	**.77**								
7. IDV/COL	.13	.14	.22	.00	.07	-.01	**.72**							
8. PD	-.07	.05	.20	-.14	.03	-.09	.19	**.74**						
9. UA	.29	.37	.18	.23	.23	26	-.02	-.14	**.83**					
10. MAS/FE	-.12	-.08	.13	-.15	.05	-.17	.18	.53	-.25	**.89**				
11. Gender[a]	.17	.14	.15	.12	.13	.05	-.15	-.13	.07	-.31	-			
12. Age[b]	.15	.08	.11	.04	-.04	-.08	-.04	-.11	.02	-.01	.17	-		
13. GPA	-.07	-.10	.07	-.13	-.04	-.15	.07	.21	-.11	.27	-.23	.04	-	
14. CLAS[c]	.11	.08	.07	.03	.00	-.04	.03	.06	-.05	.01	.03	.23	.14	-
Mean	***5.64***	***5.30***	***4.42***	***6.20***	***5.65***	***6.31***	***4.10***	***3.19***	***5.86***	***2.72***	***1.66***	***25.2***	***2.45***	***3.31***
SD	***1.10***	***1.17***	***1.39***	***0.84***	***1.28***	***0.92***	***1.32***	***1.27***	***1.07***	***1.61***	***0.47***	***7.48***	***0.90***	***0.88***

N = 216. Correlations ≥ .13 is significant at .05; ≥ .19 is significant at .01. IMTK, IMTA, IMES = Intrinsic motivation to know, accomplish, & experience stimulation; EMID, EMIN, EMER = Extrinsic motivation identified, introjected, & external regulation. IDV/COL = Individualism/collectivism, PD = Power distance, UA = Uncertainty avoidance, MAS/FE = Masculinity/femininity, CLAS = Classification. ([a] 1 = male, 2 = female; [b] in years; [c] 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior).

The results in Table 2 also show the correlations among the study variables, indicating moderately high correlations among the academic motivation dimensions (*r* ranging from .17 to .78). On culture, collectivism correlated positively with the intrinsic motivation dimensions (*r* = .13, 14 & .22), uncertainty avoidance correlated with the entire motivation sub-dimensions. Low power distance correlated positively with intrinsic motivation to experience stimulation (*r* = .22) and low masculinity (*r* = .53), and negatively with identified regulation (*r* = -.14). Other correlations were among the demographic variables and culture and motivation variables. Notable among them is the correlation between gender and masculinity (r = -.31), supporting our assertion that large female respondents contributes to the low masculinity score among this sample.

Hypotheses Testing

The results of the hypotheses tests reported in Table 3 show the outcome of six simultaneous regression analyses testing the association between cultural orientations on academic motivation. The alternatives of hypotheses 1a, 1b, and 1c stated that the collectivist orientation will be more positively related to the extrinsic dimensions of academic motivation than intrinsic. These were not supported since the t-values of the regression coefficients were not significant; EMID ($t = .545$, $p > .05$), EMIN ($t = 1.188$, $p > .05$) & EMER ($t = .047$, $p > .05$). Instead, contrary

to our hypothesized effect, the collectivist orientation is significantly related to intrinsic academic motivations; IMTK ($t = 2.34$, $p < .05$), IMTA ($t = 2.14$, $p < .05$) and IMES ($t = 3.25$, $p < .01$). This association may be due to this sample with a moderate level collectivist value, indicated by the mean of 4.1 out of a maximum level of 7. However, the individual level collectivism in a dominant individualistic national culture may not function in ways as it would have been in a national level collectivist context. A key American value is the emphasis on individual freedom and self-responsibility, hence, the association with the intrinsic motivation sub-systems (high self-determination). For instance, after 18 year of age, most students in America become independent and are responsible for their educational choices. This outcome, though contrary our assumed effect, is in line with the perspective of SDT which suggests that one can endorse collectivist values but could be highly autonomous (Ryan & LaGuardia, 2000; c.f. Chirkov & Ryan, 2001).

Hypotheses 2a, 2b, and 2c also stated that low power distance will be more positively related to IMTK, IMTA and IMES dimensions respectively. Hypothesis 2a ($t = -.431$, $p > .05$) and 2b ($t = 1.87$, $p > .05$) were not supported. Hypothesis 2c is, however, supported with positive beta value and significant t-statistic ($t = 3.139$, $p < .01$) above that reported for the extrinsic motivation dimensions, which reported non-significant *t*-values (-.650 to .858). Thus, low power distance orientation is positively related to IMES, implying that granting some level of autonomy to students may increase their intrinsic academic motives to accomplish activities with stimulating sensation.

With the sample scoring high on UA, the alternatives of hypotheses 3a, 3b, and 3c states that high uncertainty avoidance orientation will be more positively related to EMID, EMIN and EMER respectively. Hypotheses 3a ($t = 3.764$, $p < .001$), 3b ($t = 3.422$, $p < .01$) and 3c ($t = 3.621$, $p < .001$) had significant and positive betas, with the *t*-statistics only higher than that for IMES ($t = 3.314$, $p < .01$), providing only partial support. The intrinsic motivation dimensions—IMTK and IMTA—were more positively related to UA, evidenced by the higher *t*-statistics ($t = 4.379$, $p < .001$ and $t = 5.972$, $p < .001$ respectively). Deci and Ryan (1991) have noted that situational factors may cause a shift from intrinsic to extrinsic causes of motivation, hence, correlations with both the intrinsic and extrinsic dimension of academic motivation indicating some level of uncertainty among the respondents probably due to the economic uncertainty in the country. As suggested concerning the influence of the collectivist value, the effect of high UA on motivation may not function as it would have been for a national (macro) level construct; hence, the correlation with motivation constructs did not completely follow our hypothesized direction

Finally, hypotheses 4a, 4b, and 4c and their alternatives were not supported since the regression coefficients were not significant. As indicated earlier, the low score on the masculinity measure may be a reaction to the scale items but not the true perceptual value of the respondents as female respondents may have felt their role in society as portrayed by these items may be underrated or unappreciated, hence, their disagreement—low score.

Table 3
Summary of Simultaneous Regression Analyses of Academic Motivations on Cultural Orientations

Variables	*β*	*S.E.*	*C.I of β*	*t-value*	*Hypotheses*
IMTK					
Gender	.331	.157	.021 - .642	2.104*	
Collectivism	.144	.055	.036 - .257	2.633*	
Low Power distance	-.025	.058		-0.431	2a
Strong Uncertainty Avoidance	.290	.066	.160 - .421	4.37***	
Masculinity	-.18	.056		-0.322	
R^2	**.123**				
F	**5.755*** **				
IMTA					
Gender	.292	.163	-.029 - .614	1.791	
Collectivism	.135	.057	.023 - .246	2.379*	
Low Power distance	.108	.060	-.011 - .227	1.795	2b
Strong Uncertainty Avoidance	.410	.069	.275 - .546	5.972***	
Masculinity	-.06	.057		-1.047	
R^2	**.176**				
F	**8.809*** **				
IMES					
Gender	.579	.198	.189 - .969	2.926**	
Collectivism	.228	.069	.093 - .363	3.324**	
Low Power distance	.229	.073	.085 - .374	3.139**	2c
Strong Uncertainty Avoidance	.276	.083	.112 - .440	3.314**	
Masculinity	.066	.068		0.963	
R^2	**.171**				
F	**8.516*** **				
EMID					
Collectivism	.024	.043		0.545	1a
Low Power distance	-.060	.046		-1.300	
Strong Uncertainty Avoidance	.205	.053	.101 - .309	3.893***	3a
Masculinity	-.019	.044		-0.435	4a
R^2	**.068**				
F	**2.986** **				
EMIN					
Gender	.405	.192	.026 - .783	2.109*	
Collectivism	.079	.067		1.188	1b
Low Power distance	.061	.071		0.858	
Strong Uncertainty Avoidance	.276	.081	.117 - .436	3.422**	3b
Masculinity	.066	.073		0.903	4b
R^2	**.083**				
F	**3.334** **				
EMER					
Gender	.033	.138		0.243	
Collectivism	.002	.048		0.047	1c
Low Power distance	-.033	.051		-0.650	
Strong Uncertainty Avoidance	.210	.058	.096 - .325	3.621***	3c
Masculinity	-.061	.046		-1.327	4c
R^2	**.073**				
F	**3.245** **				

*N = 216. IMTK, IMTA, IMES = Intrinsic motivation to know, accomplish, experience stimulation; EMID, EMIN, EMER = Extrinsic motivation identified, introjected, external regulation. *p < 0.05 **p < 0.01 ***p < .001*

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IMPLICATIONS AND CONCLUSION

The purpose of this study was to examine business students' individual level cultural orientations and how these orientations reflect on academic motivation. We found that our sample of predominantly African-American business students, exhibits moderate level collectivist, and low power distance, high uncertainty avoidance, and low masculinity orientations. We also found that the collectivist cultural orientation is strongly related to intrinsic academic motives, the low power distance orientation is strongly related to intrinsic academic motivation to experience stimulation, and the strong uncertainty avoidance orientation is also related to both the intrinsic and extrinsic academic motives.

This study makes three important contributions to research on culture and motivation. First the preliminary result revealed that out of the four cultural orientations examined, only one—low power distance—was supportive of the broad categorization of U.S. nationals according to the seminal framework of Hofstede. The respondents, undergraduate business students, may be categorized as collectivist with strong uncertainty avoidance and low masculinity. However, this finding is not entirely surprising since we examined individual level cultural orientations, and the finding is consistent with prior research in the U.S. (Jackson et al., 2006; James, 1993). The outcome points to the variability in culture at the individual level and indicates the existence of sub-cultures within the national framework (Lenartowicz & Roth, 2001). Second, our results from the regression analyses show a significant positive association between low power distance orientation and intrinsic motivation to experience stimulation. Prior research (Huang & Van de Vliert, 2003) has reported a significant relationship between intrinsic motivation and power distance. It has been said that individuals in low-power distance societies are more empowered to perform successfully than those in high power distance societies (Dimitrov, 2006). Hence, for students in low power distance societies, granting some form of autonomy may stimulate their intrinsic motives for academic activities. This outcome, therefore, adds to our understanding of power relations, in terms of the interconnectedness of power and influence, and the motivational process. Moreover, one of the key finding of this study is the correlation between the collectivist orientation and intrinsic motivation. This outcome supports the assertion that individuals can be autonomously collectivistic (Chirkov & Ryan, 2001). Third, the outcome of this study raises a very important question concerning the relationship between the national level values and the individual level orientations (sub-culture). From personal experience, there is no doubt that our sample possesses some values peculiar to the U. S. individualistic society, but they also exhibit a preference for the collectivist values. The question arising from this revelation is: how would the respondents reconcile the academic specific values to the society-wide values where they have continued ties and interactions. In view of this outcome, one is also tempted to speculate on the possible influence of the operationalization of the measures on the outcome, but our study is not the first to report the evidence of collectivist values among a U.S. sample (e.g. Jackson et al., 2006). The outcome of this study further highlights the need to examine and increase our understanding of the relationship between values in the academic context that may be unique and those at the national level. Over the years, researchers have questioned the relationship between national culture and corporate culture; but the outcome of this study indicates the need to extend

this enquiry to include the academic context. Moreover, the study outcome shows that the respondents are, generally, more extrinsically motivated than intrinsic motivation using SDT theory. This finding is also not surprising since test scores, grades, degrees, and career or vocations are the main focus in the academic context. However, research on SDT in the work context has shown that autonomy-supportive environment—which is analogous to intrinsic motivation—is more important for performance (Gagné & Deci, 2005), which is contrary to the finding in this study. This implies that the postulations of SDT may not completely generalize to the academic context, suggesting further examination of this theory in the academic setting.

Some practical implications for college instruction may be drawn. Among the respondents of business students, we find a link between cultural orientations and academic motivation. The different orientations of culture are related to different sub-constructs of academic motivation; collectivism and low power distance orientations are significantly related to the intrinsic academic motivation dimensions than the extrinsic dimensions. Students with intrinsic motivation are more likely to use cognitive strategies such as elaboration and organization, resulting in deeper processing of academic material (Hofer, 2006). Thus, students in this cultural context will be more motivated if instructors employ interesting group projects with increased autonomy for students in selecting projects and task companions. For instance, when undertaking group project in an international business course, instructors can assign students to different sub-regions like North and South America, Western and Eastern Europe, South and East Asia, North and Sub-Saharan Africa, etc., and allow students to choose their country of interest from the assigned region. Employing such instructional strategies will likely stimulate pleasure and satisfaction in the learning process while satisfying the innate psychological needs of competence and independence.

This study certainly is not without limitations. With a sample of predominantly African-Americans from a single institution, the outcome of this study may not generalize across the larger population of business students in the south or in the U.S. The homogeneous sample (predominantly minority students) may have influenced the outcome of this study. Therefore, further study using samples of multi-cultural backgrounds, as well as students from multiple institutions in the U. S. will be appropriate in testing the conceptual model presented in this study. Thus, future study can help support the theoretical postulations in this study by analyzing these relationships with data from multiple institutions with a longitudinal test.

In concluding, the examination of the link between cultural orientations and motivation in the academic context is unique and adds to this stream of research. We found that the respondents of business students exhibit different cultural orientations that indicate the existence of sub-cultures within the national framework. We again found that these cultural orientations relate to different academic motives, suggesting that different strategies may be required to engage students of different cultural perceptions for increased productivity in school work.

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APPENDIX 1

Academic Motivation Scale

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons 'why you go to college', from 1 to 7.

IMTK
1. Because I experience pleasure and satisfaction while learning new things.
2. For the pleasure I experience when I discover new things never seen before.
3. For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.
4. Because my studies allow me to continue to learn about many things that interest me.

IMTA
1. For the pleasure I experience while surpassing myself in my studies.
2. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.
3. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.
4. Because college allows me to experience a personal satisfaction in my quest for excellence in my studies.

IMES
1. For the intense feelings I experience when I am communicating my own ideas to others.
2. For the pleasure that I experience when I read interesting authors.
3. For the pleasure that I experience when I feel completely absorbed by what certain authors have written.
4. For the "high" feeling that I experience while reading about various interesting subjects.

EMID
1. Because I think that a college education will help me better prepare for the career I have chosen.
2. Because eventually it will enable me to enter the job market in a field that I like.
3. Because this will help me make a better choice regarding my career orientation.
4. Because I believe that a few additional years of education will improve my competence as a worker.

EXIN
1. To prove to myself that I am capable of completing my college degree.
2. Because of the fact that when I succeed in college I feel important.
3. To show myself that I am an intelligent person.
4. Because I want to show myself that I can succeed in my studies.

EMER
1. Because with only a high-school degree I would not find a high-paying job later on.
2. In order to obtain a more prestigious job later on.
3. Because I want to have "the good life" later on.
4. In order to have a better salary later on.

APPENDIX 2

Cultural Orientation Scale

In the following items, please indicate the extent to which you agree or disagree with each statement by circling the corresponding number 1 through 5.

Individualism/Collectivism
1. Group welfare is more important than individual rewards.
2. Group success is more important than individual success.
3. Being accepted by members of your work group is very important.
4. Employees should only pursue their goals after considering the welfare of the group.
5. Managers should encourage group loyalty even if individual goals suffer.
6. Individuals may be expected to give up their goals in order to benefit group success.

Power Distance
7. Managers should make most decisions without consulting subordinates.
8. It is frequently necessary for a manager to use authority and power when dealing with subordinates.
9. Managers should seldom ask for the opinions of employees.
10. Managers should avoid off-the-job social contacts with employees.
11. Employees should not disagree with management decisions.
12. Managers should not delegate important tasks to employees.

Uncertainty Avoidance
13. It is important to have job requirements and instructions spelled out in detail so that employees always know what they are expected to do.
14. Managers expect employees to closely follow instructions and procedures.
15. Rules and regulations are important because they inform employees what the organization expects of them.
16. Standard operating procedures are helpful to employees on the job.
17. Instructions for operations are important for employees on the job.

Masculinity/Femininity
1. Meetings are usually run more effectively when they are chaired by a man.
2. It is more important for men to have a professional career than it is for women to have a professional career.
3. Men usually solve problems with logical analysis; women usually solve problems with intuition.
4. Solving organizational problems usually requires an active forcible approach which is typical of men.
5. It is preferable to have a man in a high level position rather than a woman.

TEAMS ON TEAMS: USING ADVICE FROM PEERS TO CREATE A MORE EFFECTIVE STUDENT TEAM EXPERIENCE

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ABSTRACT

Students are often apprehensive of working together in groups. Researchers have overlooked a potential source of learning and support for novice student teams-- the insights of experienced student teams. We review the relevant literature on giving and receiving advice to show that novice teams are likely to be responsive to, and benefit from, the advice of students who have already had a team-based classroom experience. We content analyzed the advice offered from 132 student teams who, based on their own classroom experiences, were asked to give suggestions to novice teams that would help them function more effectively. Finally, we suggest ways an instructor might use this advice to promote effective student team development.

Keywords: student groups, group work, teamwork skills, collaborative learning, advice

INTRODUCTION

Advice, it seems, is ubiquitous. Who among us has not asked for, or offered, information, insight, or perspective intended to guide decisions, influence attitudes, or solve problems? Even a cursory review of the recent education literature yields numerous articles with advice proffered for the benefit of specific groups, including naive college freshmen (Robb, 2011), the anxious parents of college freshmen (Coplin, 2007), financially beleaguered college administrators (Edelson, 2009), novice research faculty (Carriuolo, Boylan, Simpson, Bader, & Calderwood, 2007; Mayer, 2008), teaching faculty (Hessler & Humphreys, 2008), inexperienced student teachers (Biondi & Flores, 2010; Crews & Bodenhammer, 2009), and technology-challenged library professionals (Craven, 2008).

People seek advice from others for help with problems or challenges in their lives. Although no one wants "bad advice," research clearly shows acting on advice from others can yield numerous positive outcomes. For example, employees who receive advice about the job and the organization from coworkers experience higher levels of success (Morrison, 1993; Seibert, Kraimer, & Liden, 2001). MBA students with greater access to advice from fellow students reported greater satisfaction with their academic program, learned more, and had better grades

(Baldwin, Bedell, & Johnson, 1997). In their review of the relevant literature, Bonaccio and Dalal (2006) found that advice often improves the accuracy of decisions, provides decision-makers with alternative information and perspectives not previously considered, helps one avoid mistakes, and increases confidence in final decisions.

In this paper we examine the advice available for an important and growing population of students in higher education: students in teams. First, we discuss the characteristics of both collocated and virtual student teams, and the critical role of higher education in teaching teamwork skills to students. Next, we briefly review the benefits and challenges associated with using student teams, and identify the important role played by the instructor in developing appropriate classroom pedagogy to support the development of teams. We review the relevant literature on giving and receiving advice to show that novice teams are likely to be open and responsive to, and benefit from, advice from students who have already had a team-based classroom experience. We present data in the form of advice from 132 student teams, based on their own classroom experiences, intended to help novice teams function more effectively. Finally, we suggest ways an instructor might use this advice to promote team development.

Characteristics of Student Teams

The composition of student teams is often broad and diverse. Any discussion of student teams should include both face-to-face teams and virtual teams, as both are prevalent in higher education. Traditional face-to-face teams typically meet in the classroom and enjoy the advantages of synchronous communication. Most definitions of virtual teams focus on the team's dependence upon computer-mediated communication (often asynchronous) to accommodate the geographical dispersion of team members. However, the distinction between virtual teams and traditional, co-located face-to-face teams has become blurred as traditional teams increasingly use computer technology to increase efficiency (Arnison & Miller, 2002). Moreover, the conditions that promote effective virtual teamwork are very similar to those that promote teamwork in a traditional face-to-face environment, including positive interactions, personal responsibility, commitment, social skills, and appropriate structure and processes (Koh, Barbour, & Hill, 2010; Slavin, 1995). Cohen and Gibson (2003) suggest that virtuality has become more a function of the team's reliance on computer-mediated communication than geography. That is, team members need not be geographically dispersed to operate in a technology-influenced virtual environment. With significant advances in information technology team members in the same building, community, or metropolitan area may rely as much on computer-mediated communication as members dispersed across states or continents. So, for this paper, we adopt a broad definition of a student team as a group whose members a) have a common purpose and goals, b) coordinate work on interdependent tasks, and c) utilize various forms of communication technologies to accomplish their goals.

The Supporting Role of Higher Education

Regardless of a team's specific methods of operation, effective teamwork is the underlying process that allows a team to achieve its goals. Teamwork processes include both individual and collaborative efforts related to communication, conflict management, planning and task coordination, decision-making, problem-solving, and leadership (Stevens & Campion, 1994). Given the prevalence of employee and managerial teams in the business environment, higher education must ensure students demonstrate the competencies associated with effective teamwork (Abraham & Karns, 2009). In a recent survey, seventy-one percent of employers surveyed indicated universities should place a greater emphasis on teaching teamwork and collaborative skills to students (Hart Research Associates, 2009). The ability to manage a team, as well as other skills associated with cooperative, group learning (e.g., interpersonal skills, communication and conflict management, collaborative decision-making) are highly sought after in new business school graduates (Ashraf, 2004; Cranmer, 2006). Scholars have noted an increase in the use of collaborative, team-oriented learning techniques in higher education (Gottschall & Garcia-Bayonas, 2008; Hansen, 2006).

Benefits and Challenges of Student Teams

There are numerous advantages associated with collaborative learning techniques designed to emphasize and enhance teamwork in the classroom. Students in teams often show an increase in cooperative skill development, including interpersonal communication, conflict resolution, negotiation skills, and problem-solving capabilities (Almond, 2009; Yazici, 2005). Collaborative activities encourage students to take greater ownership of the learning process and its outcomes, while simultaneously developing a sense of community that promotes team cohesiveness (Ohl & Cates, 2006; Towns, Kreke, & Fields, 2000). Research also shows that (when compared to individualistic learning) team-based assignments result in higher level reasoning and critical thinking skills (Duffrin, 2003), increased motivation to learn and greater goal-oriented effort (Frank, Lavy, & Elata, 2003; Pfaff & Huddleston, 2003), and more positive attitudes regarding the subject matter and the class (Trempy, Skinner, & Siebold, 2002; Willey & Freeman, 2006).

Students also find practical benefits from teamwork in a computer-dominated environment. Studies report student satisfaction with asynchronous teamwork experiences is due, in part, to the increased flexibility in terms of time and place allocated for task-related activities (Goold, Augar, & Farmer, 2006; Morse, 2003). Also, the chance to more carefully express and edit ideas in writing via computer-mediated communication technologies increases participation for some students (Olson-Buchanan, Rechner, Sanchez, & Schmidtke, 2007).

Team-based collaborative classroom experiences also present challenges for both students and instructors. Team-based projects require interpersonal interaction; however, they do not necessarily promote the development of teamwork skills. As noted by Dittman, Hawkes, Deokar,

and Sarnikar (2010, p.199), "The frequent assumption is that individuals within a group have the inherent ability and skills necessary to work as a group to structure tasks and develop processes toward the successful completion of a group goal." In reality, students often have difficulty accepting team roles, agreeing upon group processes, managing interpersonal conflicts, coordinating task-related activities, balancing study time with work and family roles, and ensuring equal and fair contributions by all team members (Scott-Ladd & Chan, 2008). Reliance on computer-mediated interactions also introduces a greater potential for technological problems, increases the need for efficient coordination and planning among team members, and inhibits the social interaction critical for effective team dynamics (Koh, Barbour, & Hill, 2010; Kreijns, Kirschner, Jochems, & Van Buuren, 2004).

Instructors often fail to grasp the challenges faced by student teams and are themselves inadequately prepared to help teams become successful (Burbach, Matkin, Gambrell, & Harding, 2010). Insufficient instructor involvement can frustrate and disengage students while spawning cynicism and hesitancy to work with others (O'Connor & Yballe, 2007; Vik, 2001). Research shows an instructor's active involvement with teams promotes positive individual and team outcomes (Lizzio & Wilson, 2005; Oakley, Hanna, Kuzym, & Felder, 2007). To maximize the collaborative learning experience instructors must help students understand the importance of teamwork skills, incorporate sound team-based pedagogical design features into the classroom, monitor and effectively facilitate team processes, and provide timely feedback regarding performance assessment (Hansen, 2006; Koh et al., 2010).

Regardless of the source of discontent, dysfunctional student team experiences can have far-reaching consequences. Dissatisfied team members can adversely impact the performance of others, and failed collaborative efforts often compromise learning outcomes (Livingstone & Lynch, 2002). Higher student dissatisfaction has been linked to increased drop-out rates (Suhre, Janse, & Harskamp, 2007), and valuable learning opportunities are missed when future group work is avoided (Volet & Mansfield, 2006).

Promoting Effective Teamwork in Student Teams

There are several ways instructors can approach the development of teamwork skills in the classroom. At a minimum, student teams are lectured on the importance of effective teamwork skills and provided information regarding characteristics of successful teams. For example, the instructor can discuss the characteristics and practical implications of the four stages of team development identified by Tuckman (1965): forming, norming, storming, and performing. The instructor might address the importance of processes and conditions that support the team's development, including individual responsibility, attendance, commitment to the team, effective team structure, long and short-term planning, positive interpersonal interactions, conflict management, consensus decision-making, and successful meeting management. Additionally, the instructor may demonstrate use of electronic tools available to the teams, including video

conferencing, chat, group discussion boards, document exchange, reflective journals, blogs, and wikis (Chen, Sager, Corbitt, & Gardiner, 2008; Riebe, Roepen, Santarelli, & Marchioro, 2010). Students should also have the opportunity to discuss their expectations and concerns regarding teamwork (O'Connor & Yballe, 2007; Willcoxson, 2006).

The instructor can take an even more active approach by not only providing useful information regarding effective teams and teamwork, but actually taking steps to facilitate team processes. For example, the instructor may guide the team in developing its own team charter. A team charter allows the team to clearly identify its purpose and goals, member roles, and operational ground rules, all of which contribute to more efficient and effective team functioning (Hunsaker, Pavett, & Hunsaker, 2011; Page & Donelan, 2003). Instructors may also introduce teambuilding activities specifically designed to accelerate team development and cohesion (Jassawalla, Sashittal & Malhe, 2010; Kapp, 2009). Activities designed to solidify relationships and increase mutual trust, factors associated with higher levels of team performance, become more important as a team's reliance on computer-mediated communication inhibits the development of effective relational links (Buckenmyer, 2000; Dittman et al., 1999).

It is also useful for team members to reflect upon their personal strengths and preferences (and potential weaknesses) in terms of skills related to team effectiveness. For example, team members can learn from self-assessments that indicate preferred conflict management style or interpersonal orientation, and the impact these attributes have on team dynamics (Scott-Ladd & Chan, 2008). Moreover, as the semester progresses and teams have completed various team-based activities, instructors can guide student teams through structured reflective exercises designed to highlight effective and ineffective team practices (Chen et al., 2008; Jassawalla, Sashittal & Malhe, 2010). Team members should also have the opportunity to provide mid-semester developmental feedback to one another to increase learning opportunities (Bolton, 1999; Page and Donelan, 2003).

Using Advice From Other Students

As we have noted, discussions of promoting effective student teams typically focus on the role and impact of the instructor. Regardless of substantive course content, in a teams-based course, a teaching strategy that specifically explicates and fosters teamwork and team development is necessary to overcome significant differences in students' motivations and abilities to work effectively together (Jassawalla et al., 2010). Appropriately, it falls upon the instructor to create a pedagogically sound course while also providing, guidance, feedback and support to student teams (Garrison & Anderson, 2003; Koh et al., 2010; Liu, Bonk, Magjuka, Lee, & Su, 2005).

By heavily emphasizing the role of the instructor in promoting effective collaborative classroom experiences the research literature has neglected another viable source of learning and support for student teams – experienced student teams. Chen et al. (2008, p. 31) noted that students "do not have to learn everything from scratch but can learn from other people's experiences."

Research shows that team performance is improved when team members share information and exchange advice between themselves (Mesmer-Magnus & DeChurch, 2009; van Ginkel & van Knippenberg, 2008; Zhang & Peterson, 2011). Other research from the literature on giving and receiving advice points to conditions that support the positive exchange and acceptance of advice between teams (i.e., teams learning from the advice of other teams). These supportive conditions include: anxiety, emotions, source characteristics (credibility and similarity), multiple advisors, quality, and justification. We will briefly review the way each of these conditions increase the likelihood of student teams seeking and acceptance advice.

Anxiety. Anxiety is often triggered when people perceive adverse consequences stemming from uncertain circumstances (Brooks & Schweitzer, 2011). When people experience anxiety, they are more likely to seek advice and to rely on that advice when it is offered (Gino, Brooks, & Schweitzer, 2012). It is fairly common for students to dread teams-based classroom assignments as they anticipate the potential for personality clashes, team leadership issues, scheduling difficulties, technological problems, cultural and work style differences, interpersonal conflict, and work load imbalances (Schultz, Wilson, & Hess, 2010; Scott-Ladd & Chan, 2008). This anxiety is likely to make these students more open and receptive to advice from others regarding their situation.

Emotions. People often experience negative affective reactions to anticipated future events as they imagine those events inaccurately, unnecessarily emphasizing the troubling or problematic aspects of the events (Gilbert & Wilson, 2007). Receiving advice from someone who has actually experienced the anticipated event encourages more realistic thoughts and less negative emotions (Gilbert, Killingsworth, Eyre, & Wilson, 2009). Students are likely to welcome the advice of others as it serves to counter the unpleasantness of the negative affect.

Source credibility and similarity. Research shows advice is perceived as more helpful if it comes from others with task relevant knowledge and experience (Jungermann & Fischer, 2005; Yaniv & Milyavsky, 2007). An additional factor that influences the acceptance of advice is the perceived similarity of the source to the recipient – people are more likely to be persuaded and influenced by others they perceive as similar to themselves (Perloff, 2008; Silvia, 2005). Therefore, students about to begin team-based assignments should welcome the advice of students who have already had similar experiences.

Multiple advisors. Recipients of advice are more confident in acting upon the advice when the same recommendations, or overlapping recommendations, are received from multiple advisors (Budescu & Rantilla, 2000; Budescu, Rantilla, Yu, & Karelitz, 2003). Students are expected to be more inclined to act on team advice that is received from both the instructor as well as from other experienced students.

Quality. Advice is high in "quality" to the extent it is (a) perceived to appropriately address a problem or situation by posing suggestions or possible solutions that will reduce uncertainty, (b) is pragmatic in its implementation, and (c) is without significant drawbacks. Studies show the perception of quality advice will lead to more positive action by the recipient (Feng & MacGeorge,

2010; MacGeorge, Feng, Butler, & Budarz, 2004). Similarly, Harvey and Fischer (2005) suggested that advice is most helpful when it provides easily interpretable information regarding how performance can be improved. It is likely students will find the data presented in this study as high in quality because it poses specific and feasible suggestions and solutions to their immediate concerns regarding effectively functioning in a student team.

Justification. Studies show recipients of advice prefer the source provide some kind of elaboration or justification for their advice (Sniezek & Van Swol, 2001; Van Swol & Sniezek, 2005). The data presented here go beyond ambiguous or generic advice (e.g., "better communications is helpful") to provide specifics regarding how and why certain actions should be taken by student teams.

Despite the positive implications of receiving quality advice from others found in the extant literature, we could find no published articles offering specific advice from student teams to other student teams. As outlined above, there are compelling reasons to believe why novice teams would welcome and respond to the advice from more experienced student teams. If presented appropriately, such advice would be seen as efficacious and feasible, helping to reduce the anxiety and negative emotions often surrounding collaborative learning experiences in the classroom. With this in mind, we conducted the following exploratory study in which we solicited the advice of experienced student teams with the intention of sharing this advice with future students who would be working on team-based projects.

METHOD

The data for this study were collected from 132 student teams participating in a graduate class titled, *Teamwork and Leadership Skills*. The class is a required course in the Masters of Business Administration program of a large southwestern university. The sample represents teams from sections offered in the fall, spring and summer semesters between 2006 and 2011. All sections were designated in the university catalogue as fully online, and teams were not required to meet in the classroom. However, in reviewing discussion board posts, chat room transcripts, and team assignments, it was evident that many teams chose to meet face-to-face on multiple occasions, at an agreed upon location (usually one that was centrally located to all team members). It is common for teams to have utilized both synchronous and asynchronous communication, supported by face-to-face discussions as well as computer-mediated technologies (Chen et al., 2008).

The class is designed to teach both theory and practical application associated with effective teams and teamwork. Student teams are formed the second class week (in a 15 week full semester, the first class week in a 9-week summer semester) and teams remain intact all semester. The syllabus states students "will learn how to be effective team members and team leaders, and demonstrate competencies related to teamwork and team leadership skills." Among other activities, student teams develop a team charter to identify team goals, member roles, and team

ground rules, take quizzes (over textbook chapters and readings), and collect team-level self-assessment data throughout the semester using various team surveys. Students also receive individual profiles regarding their interpersonal orientation and conflict management style, and participate in activities designed to use this information to increase their effectiveness as team members. Team members receive developmental feedback from teammates at mid-semester regarding member attitude and participation, and receive specific feedback from teammates on six teamwork skill competencies (e.g., communication and conflict management skills) at the end of the semester.

The data presented in this study were generated from a content analysis of student (team) responses to an open-ended question included in the team's final assignment of the semester, the *Team Self-Analysis Report*. This assignment allows each team to reflect upon its development, processes and effectiveness throughout the semester. The data used for the content analysis were the teams' responses to the question "*Summarize what you have learned about teams this semester. What advice would you pass on to future students in this course regarding the process and progress of their teams?"* The responses to this question were imported into the qualitative analysis software package NVivo (by QSR Software) for content analysis.

RESULTS

At the recommendation of Corbin and Holt (2005) an iterative process was performed when analyzing the content of the teams' responses to our advice question. In a first pass of the data, the responses from 132 student teams were examined to identify distinct concepts or events in the data. Any given team response to the advice question often consisted of multiple ideas or recommendations. The purpose of this initial coding (sometimes referred to as 'open coding') was to scrutinize each separate response individually for these disparate components in order to more fully capture what is happening in the data. Every time a distinct concept or idea was encountered in a response, a new node was created within NVivo and associated with that specific text in the team's advice. The initial coding of the team responses yielded over 560 coded comments. During the coding of these comments, identifiable themes emerged from the data. A secondary analytical process, referred to as 'axial coding', was performed in which related comments were categorized under these emergent themes. This subsequent analytical procedure moves the study from simply being descriptive, to an inductive exercise that resulted in core constructs that facilitate team performance. The 560 advisory comments from previous teams yielded ten identifiable themes. The ten themes and sample representative comments from each are presented in Table 1.

Table 1
CODED TEAM ADVICE THEMES AND REPRESENTATIVE COMMENTS FROM 132 STUDENT TEAMS

1. Foster Open and Honest Communication	
• Share your thoughts and ideas with your teammates • Communicate frequently and respectfully with your teammates • Be honest in your communications • Be flexible and open to other points of view • Be open to feedback, even if it is critical • Listen respectfully, and ask questions	• Seek clarity in your communications; everyone need to understand and be on the same page • Appropriately voice your concerns or disagreements / don't stay quiet just to "get along" • Effectively use different communication tools (e.g., F2F meetings, discussion boards, chat rooms, IM, Skype, phone calls, conference calls)
2. Effectively Manage Conflict	
• Normal and healthy, with positive outcomes for the group (avoid tension, decision paralysis and groupthink; more cohesion, creative decisions, improved interpersonal relationships, trust, respect for diversity) • Don't be afraid of disagreement; Encourage sharing personal perspectives and opinions	• Practice appropriate conflict management techniques (supportive communication, assertiveness statements, focus on problems not people, take time to understand others' viewpoint) • Deal with problems as they occur, before they adversely affect team performance • Discuss results of TKI to better understand your teammates
3. Conduct Face-to-Face Meetings Whenever Possible	
F2F meetings have a positive impact on: • Interpersonal relationships / building a bond between team members • Open communication, trust, conflict management, accountability • Team performance (e.g., planning, coordination, goal setting) • Team cohesiveness • Collaboration	• If you cannot meet F2F, use tools like Skype or conference calls • The key is frequent communication; that can be via phone, email, chat, or discussion boards
4. Manage Team Meetings Effectively	
• Use agendas (provide structure/meeting purpose/goals, timeline) • Members should have roles during meetings (e.g., scribe, moderator, timekeeper)	• Document all decisions and assignments • Post/share meeting minutes or summary • Arrive on time, come prepared • Establish and follow ground rules
5. Develop Personal Relationships	
• Create opportunities for team members to get to know one another • Spend time talking about personal lives, not team tasks and team issues • Understand how someone's personal life may impact team participation • The social aspect of teamwork is very important for team development and performance	Knowing your teammates on a personal level: • builds empathy and understanding • builds mutual trust and respect • reduces interpersonal conflicts • creates a more relaxed, enjoyable team environment • promotes a sense of belonging and team spirit • promotes mutual support, especially during difficult personal times • allows for more meaningful communication
6. Careful Planning and Scheduling	
• Helps avoid delays, missed assignments or deadlines, and procrastination • Plan ahead / know what's coming • Start assignments early / allow time to review, discuss and modify	• Set internal deadlines (well ahead of course deadlines) • Manage your personal time; you must fulfill your team commitments • Set milestones, communicate your progress with the team • Hold regularly scheduled meetings

Table 1
CODED TEAM ADVICE THEMES AND REPRESENTATIVE COMMENTS FROM 132 STUDENT TEAMS

• Prepare an "overall" work plan outlining all deadlines/assignments for the semester	• Check Blackboard often
7. Maintain Positive Working Relationships	
• Work to establish trust: follow through on commitments, listen to and value others • Always treat each other with respect • Be supportive, it serves no purpose to judge or make personal attacks • Try hard to understand others' perspectives, needs and motivations • Help a teammate when needed and do not feel "put upon" • Always encourage others / offer understanding, praise and appreciation • Offer constructive feedback, do not simply complain or criticize	• Remember, your way is not the only way Include everyone in decision-making; collaborate and be willing to compromise • Focus on issues and problems, and their solutions – not personalities • Be open to new ideas and perspectives; give others a chance • Actively participate; speak up, engage, volunteer, and don't wait for others to carry the load • Communicate with one another frequently • Value and respect diversity in all its forms • Have fun, see the humor
8. Maintain a Positive Attitude	
• Maintain a high level of commitment to the team • Selflessness is key; the team must come first • Check your ego at the door; this isn't about you	• There is always something you can learn; be open to self-improvement • Keep a positive attitude • Stay motivated
9. Identify the Team's Charter	
• Helps team stay focused / becomes the team's "backbone" • Defines and clarifies expectations (individual roles, tasks / team goals) • Facilitates planning and goal achievement / creating calendar of events important • Develop ground rules • Creates initial bond between members / common identity and sense of purpose	Team Goals • All members should understand team's purpose and direction • Helps focus individual and team effort Increases accountability Team Roles • Manage individual/team expectations regarding contributions and responsibilities • Increases accountability • Reduces confusion, missed assignments or deadlines, and potential for interrole conflict • Roles should play to individual strengths when possible • Facilitates structure, organization, and even workload distribution
10. Identify a Working Leadership Model	
Option A: Designated leader • Better for consistency • Try to select someone with leadership experience/motivation Option B: Everyone a leader / shared leadership • Different leaders for different projects allows everyone to develop/exhibit their leadership skills and helps others become good followers • You don't need a single leader, just mutual accountability, trust, and consensus • Established roles are more important than a formal leader	Any leader should: • Take responsibility • Seek input from others • Communicate with the team • Plan, coordinate and delegate • Enforce ground rules / confront problems or issues

Implementing the Team Advice

There are a number of ways the ten advice themes can be used by an instructor to promote more effective performance in student teams. At a minimum, the team advice can simply be presented at the beginning of a collaborative project or assignment, without additional comment, leaving the student teams to independently consider how the information may be helpful. We urge a more active approach, however, designed to encourage students to consider ways the advice may be directly applicable to their current classroom situation. These alternative approaches vary in the amount of time and interaction required. For example, one alternative is to introduce the advice themes to the class as ten suggestions for effective teamwork from experienced student teams. The class can then suggest ways to implement the advice (given the particular resources or constraints of their current situation), leading to a list of actionable recommendations for effective teamwork. A slightly more involved alternative would be to assign each team in the class one or more of the advice themes and allow thirty minutes to prepare a brief presentation that would introduce the advice and answer the question, "How could a team best utilize this advice to create a successful team experience this semester?" Or, the activity could be designed to tailor the responses to specific team needs. Each team would discuss the ten advice themes and develop one specific "action item" for each theme that the team will take to improve its own effectiveness. To encourage a continued focus on effective team behaviors and processes throughout the semester, the instructor could require teams to collect self-assessment data regarding the implementation of the action items derived from the advice themes. Teams could develop assessment questions based on the themes emphasized, and collect the responses from team members at different times during the semester. For example, after completing a team project the team could collect data regarding members' perceptions of the team's ability to manage conflict, prepare a work plan and meet deadlines, hold productive meetings, and maintain a positive attitude. Each team could submit a graph of the data that was collected, along with a brief report interpreting the results and describing team dynamics.

CONCLUSION

The use of teams in educational settings is a valuable pedagogical approach that develops a highly regarded skill set valued by many organizations. Unfortunately, the overall effectiveness of team-based collaborative learning experiences in the classroom may be undermined by the preconceived ideas and attitudes of students involved in those experiences (Hillyard, Gillespie, & Littig, 2010). Anxious students may lack confidence in their abilities to work well with others, or they may find others' motivations and abilities suspect. Real or imagined, when confronting group work, students can become resistant to the learning effort as they fear a myriad of both task and relationship issues (Schultz, Wilson, & Hess, 2010; Scott-Ladd & Chan, 2008).

It is incumbent upon an instructor to create a classroom experience that actively promotes the development of teamwork skills. Some existing methods for doing this include: lecturing on relevant information regarding the characteristics of effective teams, creating a classroom environment that promotes healthy and positive interactions between team members, conducting team building activities, developing assignments amenable to collaborative learning, intervening when necessary to facilitate within group task or process issues, and providing timely feedback regarding individual and team performance. However, an overlooked and potentially powerful method for developing effective teamwork is the thoughtful consideration and application of the advice of experienced student teams. While an instructor can offer valuable information regarding effective teamwork, students are apt to appreciate the unique perspective available only from other student teams. We encourage instructors to creatively use the advice data presented in this study to enhance the collaborative learning experiences of novice student teams in their classrooms.

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IMPACT OF SELF-EFFICACY ON SAUDI STUDENTS' COLLEGE PERFORMANCE

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ABSTRACT

With the increasing numbers of Saudi students marching into American colleges, the academic achievement and social integration of this student group is essential for the ultimate goal of their matriculation with their intended college degrees. Building upon the self-efficacy theory (Bandura, 1986) as a construct of student academic achievement, the article reports a qualitative study about the case of Saudi students at Riverside State University. After initial site observations and document reviews were conducted, primary data were collected from open ended interviews with students, administrators, and professors at RSU. The findings revealed that various aspects of self-efficacy are either agents or influences given the circumstances of the case. It offers recommendations showing how various aspect of the theory can be utilized to increase Saudi students' self-efficacy and consequently their achievement level.

INTRODUCTION

The vigorous increase in the numbers of a special group of international students enrolled at a Midwestern research university attracted the academic and professional attention of faculty and administrators of the institutions. Available research literature did not provide quick satisfying answers to the questions relevant to the case of this student group. However, a thorough review of the national databases and press releases revealed the noticeable increase of Saudi students in most American colleges and universities. Due to a fully funded Saudi government scholarship program, thousands of Saudi students were able to study at American institutions in various academic levels ranging from the preliminary intensive English courses to doctoral coursework and dissertations (Institute of International Education, 2012). Direct interaction with these students showed a difference as compared to the majority of other international students on campus in goal orientation, motivational drives, and ability beliefs regarding their expectations of degree attainment, and their social integration into college life. In preparation of the current study, an exploratory study was conducted with two Saudi students, a college instructor, and an administrator who was directly involved directly with Saudi students.

RATIONALE OF THE STUDY

As American colleges and universities have witnessed a continuous increase in Saudi students since 2005 as compared to their numbers in previous decades, a closer look to the general numbers of all international students in the U.S. might be informative as to show the relevance of the issue of Saudi students. During the academic year 2011-2012, international student enrollment numbers at American universities have reached its highest numbers as far back as national data can show (Institute of International Education, 2012). Among the several countries of origin of international students, Saudi Arabia stands out with the most continuously progressing numbers acquiring the fourth rank among the top twenty countries of origin of international students for the first time with 34,139 students studying at American institutions (Open Doors, 2012).

Saudi students share several circumstances with other international students like the cultural adjustment, learning environment shift, and the linguistic barriers. On the other hand, Saudi students have a different set of challenges due to economic, academic, social, psychological, cultural, religious, and political constructs (Miller, 2002; Razek & Coyner, 2013). The peculiarity for the case of Saudi students has its significant implications for the work of college personnel, college instructors and top administrators at RSU where Saudi students represent one fourth of the international student body on campus almost matching the numbers of Chinese and Indian students (Office of International Programs, 2012). Therefore, this study endeavors to examine one aspect of this phenomenon at RSU dealing with the self-efficacy beliefs of a sample of these students and their influence on their academic endeavors and persistence toward accomplishment of stated goals.

Research literature has addressed the issue of foreign college students in the United States from several aspects. Including cultural, psychological, and academic circumstances (Adams, 2004; Constantine, Okazaki, & Utsey, 2004; McClure, 2007; Poyrazli & Grahame, 2007; Wang, 2004). Some of the aforementioned work addressed international students' adjustment patterns, linguistic problems, campus involvement, and academic achievement (McClure, 2007; Poyrazli & Grahame, 2007; Wang, 2004). Though not fully comprehensive, a small amount of these research studies examined self-efficacy and motivational aspects of international students (Adams, 2004; Constantine, Okazaki, & Utsey, 2004; Wang, 2004). However, most of these studies addressed international students as one group without differentiation based upon their countries of origins with the exceptions of few studies addressing Chinese or Indian students. Neither of these studies examined Saudi students as an individual group. The current study, therefore, comes as a logical step regarding the scarcity of studies on self-efficacy of international students and the pressing need to study Saudi students as a growing part of the international student body on American campuses. Findings of the study may reveal unknown aspect that can be helpful to stakeholders of higher education in dealing with Saudi students to maximize the outcomes of their learning and to build their self-efficacy beliefs towards academic achievement and goal accomplishment.

PURPOSE AND RESEARCH QUESTIONS

As self-efficacy and its major processes guide the amount of success students expect to achieve as compared to their actual abilities, this study explores the self-efficacy of Saudi students studying for a college degree in the United States in an effort to explore the multifaceted dimensions of their self-efficacy beliefs and the measures that can address their adjustment challenges to maximize their beliefs. The study also offers a deeper understanding of their psychological alienation created by their presence outside their zones of comfort. Related to their academic achievement, the patterns of motivational processes influencing these students while pursuing their degrees will also shed some lights on rarely visited areas of their specific case. We endeavored to answer the following questions: 1) what self-efficacy beliefs Saudi students have when they arrive in the U. S., 2) how their self-efficacy beliefs contribute to their academic choices, and 3) how RSU can introduce support system to help these students.

LITERATURE REVIEW

Self-efficacy is "a belief in one's capabilities to organize and execute courses of action required to produce given attainments" (Bandura, 1997, p. 3) Individuals' perceived self-efficacy is believed to influence their choices of related tasks, their performance levels on chosen tasks, the amount of effort they put into accomplishment of the tasks, and the amount of perseverance they show on task pursuit (Bandura, 1997). Self-efficacy functions through four major processes: cognitive, motivational, affective, and selective (Bandura, 1993).

When researchers targeted self-efficacy within the educational settings, it proved to be positively connected to students' persistence and academic achievement (Chemers, Hu, & Garcia, 2001; Multon, Brown, & Lent, 1991; Stevens & Gist, 1997; Zimmerman, 1989). Researchers found a positive connection between high self-efficacy and high academic performance and found that students who had high self-efficacy utilize their abilities to overcome challenges and succeed in their current endeavors (Buyukselcuk, 2006; Houston, 1995; Schunk, 1984). Students with high self-efficacy showed stronger beliefs in their abilities in achieving success (Buyukselcuk, 2006; Houston, 1995). Researchers also proved that success in academic tasks is usually connected with high self-efficacy beliefs and vice versa (Camgoz, Tektas, & Metin, 2008). Some researchers have been able to establish a positive relationship between self-efficacy as a psychological factor and students' college adjustment and achievement (Ramos-Sánchez & Nichols, 2007; Rittman, 1999). Psychological factors like self-efficacy are essential to understand student academic achievements and should be utilized as a guide in establishing college programs (Devonport & Lane, 2006; Pajares, 1996). Moreover, the sources of self-efficacy, once identified, could guide planning effective interventions that would improve academic achievement through increasing self-efficacy.

The aspect of self-efficacy is a particularly vital construct as related to the case of international students' acculturation and adjustment experiences in their host countries. Sherer and Adams (1983) found that self-efficacy is exposed to possible threats in the experiences of foreign college students. They found that different cultural frame of values and communication obstacles are the basis of these threats. The fact that the countries of origin of nonwestern foreign students are mainly collectivistic cultures that value interpersonal relationships has its own influence in creating stressors and challenges for achievement (Razek & Coyner, 2013). They are also distinguished for high senses of connectedness to family members. Therefore, it is natural that nonwestern foreign students who experience difficulties interacting with Americans may experience some form of psychological or social distress. Constantine et al. (2004) found that international college students from Africa appeared to be feeling worse with regard to their self-efficacy than international students from Asia and Latin America. Adams (2004) studied the influence of peer modeling on the self-efficacy of international graduate students and found that peer modeling can enhance their perceptions of competence for academic presentations. Moreover, the stress created by high expectations and causal comparative factors may urge international students to unethical academic choices involving cheating or plagiarism to compensate for low self-efficacy beliefs in individual's academic achievement (Razek, 2013) Therefore, a positive relationship between self-efficacy beliefs and high academic performance has been empirically established (Pajares & Schunk, 2001).

METHODS

This study utilized qualitative research tools to explore the self-efficacy and the motivational processes of degree pursuing Saudi students at RSU and how they influence students' academic achievements, college involvement and degree persistence. We used document reviews, field observations, and in-depth interviews. We utilized three sampling strategies to increase the objectivity of research findings: typical case, snowball, and information rich case (Paton, 1987). International students at RSU account for almost four percent of its total student population which provides a variety of circumstances, factors, and issues enriching the case studied. Choice of informants and observation sites were guided by nominations faculty, and staff during the pilot study.

Participants

Key informants in this study fell into three categories: 1) two college professors, 2) two college administrators, and 3) five male and three female Saudi students who were recruited through the professors and administrators recommendations as active and reflective students. Except for the eight Saudi students, other informants were involved directly in teaching or coordinating educational services targeting Saudi students. All Saudi students who participated in the study have spent more than a year in the United States. All of them had to start with English

languages courses to get full admission into their academic programs. Their ages ranged between 20 to 27 years old. We tried to make sure that the various categories of Saudi students are represented in the interviewee list. Participants were allowed to choose the pseudonyms used in this article to keep them anonymous. Salwa studies for a master's degree in educational instructional technology. Feras began the course work for the masters in civil engineering. Jehad is an undergraduate student of business administration. Zeyad is a junior majoring in communication technology. Ahmed is a sophomore majoring in technology. Hanan is a freshman majoring in information technology. Rabie is a doctoral political science student. Fadila, unscarfed, is a graduate student pursuing a master in public administration. John, a full professor in the Department of Communication, teaches cross cultural communication techniques. MaryAnn is a College of Education professor who taught three Saudi students last year. Theresa, a university administrator, is very involved with programming, coordination and advising for international students. Richard works as the English Language Institute director. In addition, various individuals who contributed in to ease adjustment problems of Saudi students at RSU were briefly interviewed usually to clarify a relevant point.

Data Collection and Analysis

After obtaining the Institutional Review Board approval, we conducted field observations of activities for international students and reviewed relevant documents issued from the Office of International Programs. It is also worth mentioning that our current as well as previous roles in different institutions facilitated access and full exposure to the realm of activities and measures targeting Saudi students that might be available on a university setting. The primary data source for this study originated from 12 one-hour open-ended individual interviews with the twelve key informants. These were conducted during the fall of 2009. Participants responded to a topical interview protocol eliciting their social and academic experiences at RSU and their self-efficacy beliefs. The several components of self-efficacy explored by the interview questions included: conception of ability, social comparison influences, framing of feedback, perceived controllability, and motivational processes (See Appendix A for a complete list of interview questions). After transcribing the responses, the data were coded and categorized within an emergent framework of relevant themes.

Trustworthiness and Authenticity of Data

During the data collection, coding, and analysis, trustworthiness was ensured through triangulation, contextual completeness and long-term observation. Triangulation was achieved through varying the data collection tools including document reviews, observations and interviews. We endeavored to achieve contextual completeness through full description of the role of the students, faculty, and administrators as key informants of the study and the background of each of them. Done for two consecutive semesters, long-term observation ensured the study's thoroughness as the study lasted for a calendar year that covered the range of introduced activities

that coincided with different occasions and seasons. Open and fair solicitation of informants understanding of their self-efficacy beliefs, roles, and reactions to the case at RSU ensured the authenticity of data. Member validation was employed to ensure the dependability of the data. Participants were emailed a copy of their transcribed interview to check if they wanted to add or modify any of their responses. Member checking asserted the findings are 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. With this knowledge, "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 Families 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.

The high degree of hierarchical social structure present in Saudi students' society of origin forms conceptualized images of where individuals can fit. It also shapes aspirations and expectations that are associated with the individual's expected place in that social order. "I will work as the director of women affairs in my region. The job is waiting for me in Saudi Arabia. … I already had it because they know I am going to success", says Fadila. Such hierarchy offers a framework of expected performance no matter how much effort the individual can offer to exert. "My family expects me to go back with my masters. It is already decided. … There is no possibility I can return without that degree", says Feras.

Saudi student participants at RSU come to the America with their predetermined conception of ability promoted by a very centralized educational system. The educational system available in Saudi Arabia is constructed about the behavioral school of thought allowing very little space for student autonomy. However, not all Saudi students have the inherent capacity view of their abilities. Some aspire to learn and advance due to social and educational circumstances that are not always available for the majority of students in Saudi Arabia. An investigation of these circumstances and their influences on Saudi students conceptions of ability lead to the following informative results.

Saudi participants usually compare themselves with other students around them. Such a factor might have been contextually acceptable while in their home country. However, when they arrive in the U.S., they compare their performance to the majority of American students to gauge

their success. This can provide a belittling evaluation of their academic achievement when considering their limited proficiency in English, the language of instruction. "My language is not as good as theirs. I cannot even imagine I can speak or understand English like them. I usually hesitate to speak in class although some time I have good ideas. But I feel other students will laugh at me", says Zeyad.

Saudi student participants are highly motivated by the feedback systems that are practiced at RSU. Their perception of self-efficacy is usually raised through comments that focus on how much progress they made not how many tasks they accomplished successfully. Fadila responds to a question about the feedback provided by instructor saying,

> In my college in the Kingdom, I used to get the test at the end of the term. I did not even have access to see my answers. I only knew the results. Here, I have different assignments throughout the term. I get my papers back with comments of the professor. I like this because I improve each time. Some professors offer us resubmit opportunities to correct our assignments for a better grade.

Ahmed reflects on a system offered by some of his instructors who provide students with a progress report and the increase of assignment weights towards the end of the semester. He says,

> Three of my professors offer us a personal progress graph on Springboard. It tells you how good you are doing in the class. They always use this graph if we go for an advising meeting with them. They also try to make the grade for the assignments smaller at the beginning of the class this way; I know what the instructor expects from after receiving back my first paper.

Saudi student participants come from a relatively closed conservative society where change is not the responsibility of individuals. They do not look at changing the norms of their society as an easy or even achievable task. They do not usually challenge the established system. Their attitudes towards negotiation of rules and roles are very low. They expect their surroundings to be rigidly fixed and out of control. However, self-efficacious Saudi students usually begin to capture ways they can control their environment through utilizing available resources and development opportunities for them. "I took that as a learning experience. Now, whenever there is something that is against my religion, I go to the professor directly. Some other times, I call two of my American friends and ask them what to do. Another help I usually try is the lady in the international office. It is not her job, but she usually helps me when I go to her for a question about what to do", says Fadila.

This new attitude towards their ability to change the environment leads to the factor of "causal structure". After a semester or two in the American higher learning system, Saudi students change their initial conception of their abilities and begin to utilize their experiences to bring about a systematic change in their beliefs about their abilities. "It is very obvious", says Theresa, "they come to RSU very unconscious of their abilities. They think they will fail. But give them two

semesters or three, and they usually change that attitude. They understand the system. They sometimes try to monopolize it" for their advantage.

Most of Saudi student participants come to the United States with clear goals. They aim at accomplishing their primary task of graduating with a college degree. However, their expectations of the amount of effort required to achieve these goals are usually unrealistic. This is reflected in both in their perseverance to achieve their goals and in their resilience while facing early challenges and failures in their programs. Richard noted,

> Many of my Saudi students did not expect the amount of work we expect them to accomplish in the first year while in ELI. When we stated that their academic program will require more work, they were frustrated. Actually, many of them transfer after English studies completion expecting other universities to be easier.

Due to their governmental economic support and their guaranteed employment opportunities in Saudi Arabia, Saudi student participants at RSU enjoy a high level of control in facing threats of failures or academic stressors. However, such control is not usually well structured to yield positive consequences in their academic endeavors. Theresa says:

> They are not encouraged by an innate need to excel and find a job in the States like other internationals. They seem fully secure in regard to jobs back in their country. . They do not need to work or get involved in any form of activity other than the classes. This may be the cause of their slow social and academic blending process

Richard supports that declaring, "They mainly interact with other Saudi outside of the classroom which limits the speed of their acquisition of English".

Saudi participants build their choices depending on goals rather than self-efficacy beliefs. They have the courage to commit to tasks even if they believe they are beyond their believed abilities and skills. "I chose the program because this is the field I work [in] at home. I know it is difficult but I like this field.... the grades are not important. It is the degree that I need", says Ahmed. However, their skills to obtain external help and change failures into successful learning experiences are usually lacking.

IMPLICATIONS FOR INSTITUTIONS

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. Although sharing some common characteristics with other foreign students, Saudi students at RSU demonstrate distinctive traits which make them unique. Although the research findings focused on Saudi students' self-efficacy beliefs and their

influence on academic and social performance at RSU, they may offer valuable insights for administrators and faculty alike who may find similarities to the Saudi student populations at their institutions.

International program administrators and student affairs administrators bear responsibility to provide co-curricular and social opportunities for students. These opportunities should be 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 motivational patterns. An effective strategy may be to engage them in activities that activate their analytical thinking skills about their performances, goal setting, goal orientation, and appreciation of the developmental aspect of learning rather than the outcome based perspective. Social activities should be organized in ways to promote student interaction and foster connections with students outside of the Saudi community. Designing engaging activities aimed at pairing Saudi and American students while being respectful of cultural norms provides opportunities for socializing. Another strategy that can be employed is to engage Saudi students on campus in designing and planning events for new students. In addition to building relationships, it may improve their own understanding of available resources and opportunities as they guide others.

It is important for faculty and academic departments to consider the self-efficacy beliefs held by these students. Academic departments can design internships or unpaid work experiences which would require Saudi students to remain on campus and compel them to interact with faculty and students, building confidence and providing opportunities for students to ask for help in a non-class setting. Departments could provide training to educate faculty and staff about the characteristics Saudi students possess. Recognizing that these students may hold unrealistic expectations regarding the amount of effort required for degree attainment, departments should provide opportunities to help students understand requirements and the accompanying effort needed to be successful. Orientation seminars and college success workshops should target this aspect in an effort to change the negative influence of social comparisons to a more "outcome based assessment".

Programs that encourage collaborative and cooperative learning strategies can help them acquire needed learning skills and maximize their learning experiences. Academic experiences may occur in an environment where the Saudi students participate and gauge success based on leader-articulated goals, rather than allowing students to follow their inclination to compare themselves to group norms. Since it appears that self-efficacy is increased by feedback based on progress, classroom assessments should be structured to provide periodic evaluations against predetermined objectives. 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 (Adams, 2004). Group

work and collaborative learning experiences offer methods to encourage Saudi students to move out of their comfort zones and engage with other learners.

Further, faculty can structure learning activities that allow decision making and student input into the learning process, providing opportunities for students to build on success and gain confidence in their academic abilities. Faculty can cultivate democratic opportunities for individual influence regarding guidelines and roles thereby offering students insight into how they might be empowered to exert influence and elicit change. Free from the economic pressures facing many American students, Saudi students are not motivated by the fear of consequences resulting from academic failure common to many other students. Faculty may need to focus less on learning activities and assessments that are grade-driven and maximize learning opportunities by concentrating academic content and strategies on performance based criteria. Progress reports would be beneficial for their learning experiences in the United States not only because it will deemphasize the competitive approach but also because it will offer them the opportunity to self-compare their progress on the basis of a developmental guideline. Motivation for these students may not be a final grade, so strategies must be utilized to require students to be engaged in the learning process throughout the class, using rewards other than grades to ensure proficiency.

LIMITATIONS AND FUTURE RESEARCH

The present study had three limitations that restricted its findings. First: the small sample size of key informants limited the degree of generalization of the findings. Therefore, they 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 state 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 at hand and some of the Saudi students at their institutions which may make the implications applicable.

Previous studies which dealt with self-efficacy beliefs of foreign students usually focused on international students as a group. 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 (Adams, 2004; Constantine et al., 2004; Pajares & Schunk, 2001; Sherer & Adams, 1983).

This study showed that, self-efficacy as an agreed upon construct of student academic achievement, can be increased to improve the achievement level of Saudi students at American higher education institutions (Devonport & Lane, 2006; Pajares, 1996). Such increase can be carried out through orientation programs, college success seminars and freshman year programs, student life programs, and multicultural events. An informed decision making process should

guide the design of the aforementioned extracurricular 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 employment and internship opportunities on campus may help them increase their persistence and success rates. Interactive and collaborative learning experiences coupled with periodic evaluations against well-articulated objectives can increase their academic performance.

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 studying the characteristics of a larger number of Saudi students. A collaborative multi institutional study would reveal valuable findings about Saudi students as a fast growing group on American campuses.

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MOTIVATION, PERSISTENCE, AND CROSS-CULTURAL AWARENESS: A STUDY OF COLLEGE STUDENTS LEARNING FOREIGN LANGUAGES

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ABSTRACT

Based on the major theories of motivation and cross cultural awareness, this study investigated the motivation of foreign language college students and aspects that spur them to prolong learning the language beyond the program requirements. The significance of this study stems from the dearth of research literature in this area and the need for exploring constructs of college student motivation to persist in learning foreign language. The study utilizes the aforementioned theories to determine why college students persist in learning a foreign language; how students perceive their abilities of learning as related to their close relationships with peers, instructors, and family members; and how learning foreign language influence learners' cultural awareness of other countries especially those where the foreign language is spoken.

Qualitative data collection tools were used to examine aspects influencing the motivation of college foreign language learners. These tools included classroom observations and open ended interviews with students. Triangulation ensured the trustworthiness of the data. Member checking and participant feedback were also employed to validate findings.

Analysis of the data resulted in revealing several aspects influencing the motivation of college foreign language learners. These included engagement elements in the foreign language classrooms as a trigger of initial motivation, family and peer support, the role of the instructor as a major motivator, instructional immediacy, and early exposure to the foreign language. Participants shared their desire to know more about the culture of the language they studied and expressed dissatisfaction about the insufficiency of cultural aspects in the textbooks.

INTRODUCTION

Although the cognitive, academic, personal, and societal benefits of foreign language learning are undeniable, a limited number of American college students study foreign language in any depth. Students in the United States stop foreign language studies before achieving considerable communicative proficiency (Hayward, 2000; Lambert, 1999; Panetta, 1999). With the new tendency for globalization and no-border economy, it is essential for American students not only to be knowledgeable of other cultures but to be able to communicate with people from these cultures as well. The social importance of language teaching stems from its aptitude to

introduce people to cultures other than their own (Byram, 1990). This process should result in the students understanding the foreign culture and acquiring positive attitudes and acceptance to the speakers of the foreign language and their cultures.

With the new tendency to globalization, the urge for American students to learn foreign languages increased. The scarcity of research studies exploring the constructs surrounding college students' foreign language learning warrants the current study. Moreover, revealing these constructs may inform the expansion of foreign language programs which does not only assert the leadership role of the United States but also sustain its security. The purpose of this study is to examine the motivation of college students enrolled in foreign language classes at a Midwestern university. The study also investigates why some of students decide to continue studying a foreign language beyond the academic requirement. Moreover, it examines the influence of foreign language learning on students' cross-cultural awareness. To achieve the aforementioned purposes, the study endeavored to find answers to the following research questions:

1. What constructs influence college students' persistence in foreign language classes beyond the usual requirement?
2. How does completing a foreign language program influence students' cross-cultural awareness?

LITERATURE REVIEW

It is argued that students in the United States stop foreign language studies before achieving considerable communicative proficiency (Hayward, 2000; Lambert, 1999; Panetta, 1999). Gardner (2000) classifies motivation as one of the most influential determinants of language achievement. Byram (1990) stated that the social importance of language teaching stems from its aptitude to introduce people to cultures other than their own. This introduction should result in the students understanding the foreign culture and acquiring positive attitude and acceptance to the speakers of the foreign language and their culture (Byram, 1990).

Motivation

Motivation means the arousal of certain behaviors directed towards the accomplishment of certain tasks and persisting in exerting efforts that target task achievement (Huitt, 2001). In the field of foreign learning, motivation represents learners' desire and exerted efforts to achieve an aspired level of proficiency in the target language (R. C. Gardner, 1985). The motivated language learner as defined by J. Gardner (2001) is a student who not only exerts the effort to learn the language but aspires to language learning and will enjoy it as well. Despite the controversy about the role that different constructs play in mastering a foreign language, motivation remains as one substantial aspect that influence the different stages of foreign language acquisition (Taha, 2007). The role of motivation in foreign language learning has long been examined by educational researchers (Deci & Ryan, 1985; R. C. Gardner & Lambert, 1972; Graham, 1994; Ryan & Deci,

2000; Weiner, 1985, 2005). Several theories and models shape the educational concept of foreign language motivation in particular. These theories include the theory of integrative motivation introduced during the social-psychological period by R. C. Gardner and Lambert (1972), Attribution theory and its implications for task persistence and goal attainment as developed by Weiner (1985; 2005) and Graham (1994), and the Self Determination Theory with its categories of intrinsic and extrinsic motivation developed during the cognitive-situated period especially the work of Deci and Ryan (1985; 2000).

Integrative vs. Instrumental

In their extensive research regarding the role of motivation and attitudes in L2 learning, R. C. Gardner and Lambert (1972) established instrumental and integrative motivation as the two main modes of motivation constituting the foundations of several later research studies in the field. According to R. C. Gardner and Lambert (1972) and J. Gardner (2001), integrative motivation is mostly manifested when learners aspire to identify themselves with communities that use the target language as their main language of communication. That is, learners want to utilize learning the foreign language to integrate themselves into a community of native speakers of the target language. Dörnyei (2005) argued that integrative motivation does not only motivate the learner to learn the target language but also encourage the learner to willingly interact with the target language communities when available. Peters (2010) found that integrative motivation always denoted positive attitudes to target language communities, cultures, and countries. Instrumental motivation is usually apparent when the learners study the language as a means for reaching a utilitarian goal like securing a job, travelling to a country where the language is spoken, or being able to pursue further studies conducted in the target language Gardner (2001).

Attribution Theory

Originating in the work of Rotter (1966), Attribution theory examines the various causal explanations for success and failure and their influence on behavior. In education, Attribution Theory offers a specific and valuable model that endeavors to explain how learners' perceptions of the causes of success or failure may influence learners' expectations for success, self-efficacy beliefs, emotional reactions to educational task results, and achievement behaviors. Individuals' attributions may be internal stemming from the learner's abilities. They can also be external which are out of the learner's control (Deci & Ryan, 1985; Graham, 1994).

Self- Determination Theory

Stemming from the field of psychology, Self Determination Theory (SDT) suggests that intrinsic motivation has three psychological needs: autonomy, competence, and relatedness where autonomy represents learner initiated actions, competence reflects students' mastery of target content, and relatedness shows the learner's need to be accepted and appreciated by others (La Guardia, 2009). Bernard (2010) asserted the assumption that learners will devote effort, time, and

energy to educational activities that will fulfill the aforementioned psychological drives. In other words, learners will be willing to exert more effort when the educational activity enhances their sense of autonomy, seems suitable for the learners' abilities, and creates an acceptable and respectful self image as perceived by others including peers, family, and community members. Chirkov (2009) argued that one of the major emphases of SDT is the central role of self-motivation and student autonomy as providing positive academic achievement and healthy student development across the globe.

Culture

Culture is an integral component in the human behavior occurring at many levels with intersecting and overlapping domains. Researchers have always argued that culture is an inherent aspect of learning a foreign language (Abdul Aziz, 2011; Janzen, 2008; Tanaka, 2006; Tochon, 2009). Paige et al. (2003) argued that culture is more than a component in foreign language learning because vocabulary and language expressions derive their meaning from cultural contexts of which the language learner need to be fully aware. From the various definitions of culture, Paige, Jorstad, Siaya, Klein, and Colby (2003) offer a workable definition that fits the purpose of the current study. "Culture learning is the process of acquiring the culture-specific and culture-general knowledge, skills, and attitudes required for effective communication and interaction with individuals from other cultures. It is a dynamic, developmental, and ongoing process which engages the learner cognitively, behaviorally, and affectively" (Paige et al., 2003, p. 174). Fox and Diaz-Greenberg (2006) argued that foreign language instructors have the golden opportunity to extend cultural learning beyond food and festivities to enable students to communicate efficiently with families who speaks the target language. Cultural learning has become a basic component of learning a foreign language where the acquisition of intercultural communicational competence becomes a major goal especially in our increasingly mobile and global society (Magosa & Simopoulos, 2009; Sercu, 2006).

METHODOLOGY

The study used a qualitative case study paradigm to explore the motivational constructs and cultural aspects relevant to college students studying foreign languages. The qualitative approach was chosen because of its focus on meaning as it is understood in the context of participants' life experiences inside and outside of the classroom (Creswell, 2003). It is also worth mentioning that the study endeavored to create an understanding of the case from the perspectives of the study participants (Merriam, 1998). This approach is more appropriate for exploring feelings, and the complex influences that affect people's beliefs and perceptions, especially when addressing cultural aspects and choices.

Participants

Sixteen students were chosen based on instructors' nominations to include several foreign language programs from the Modern Language Department. Four students were selected from each advanced level of Arabic, Chinese, French, and Spanish courses. Participants included 14 undergraduate and two graduate students with different majors such as: international marketing, political science, business, computer science, communication, English, French, and education. Pseudonyms were used in this report to protect the confidentiality of the participants.

Data Collection

The primary data source for this study was in-depth interviews with sixteen college students currently studying foreign languages beyond the requirements of their respective programs. Before starting the semi-structured interviews, the participants filled a short demographic survey. Follow up questions were used to clarify certain points and erase the sense of the uncertainty that came with some vague answers (Savin-Baden & Major, 2010). Several questions were added to the interview protocols because of unanticipated topics raised by the participants. Each interview lasted approximately one hour. Secondary data sources were researcher observation of some of the foreign language classes. Triangulation of the data was based on the use of multiple sources and member checks. This combination of data sources and analysis assured that different aspects of the research problem were taken into consideration as possible (Flick, 2006).

Data Analysis

The taped interviews were transcribed verbatim and analyzed for patterns or themes. These were organized into tentative categories and assigned a list of codes. The codes were later categorized under the *emic* list of themes that emerged throughout the data collection and analysis processes. Initial themes that did not offer pertinent information to the topics of persistence, motivation, and cross cultural awareness were eliminated. The categorization under the finalized emergent list of themes helped in chunking the data into meaningful sections that uncovered the various dimensions of the case.

FINDINGS

Several themes emerged from the analysis of data including: engagement in the learning process, various types of support, instructor's role, and curriculum content. The participants' indicated that their goals and early exposure to the language also had some influence on their decision to continue their studies. Cultural competence was another aspect that participants shared as an area where they wanted to gain more knowledge.

Support

Support was one of the constructs that the participants mentioned as motivating them to continue their study of foreign languages. All of them stated that they are receiving support from family members, friends, and peers in the classroom. Teachers represented a great support for them. However, support from the instructor will be handled in the following section. Caroline reflects on the support she gets from her family and peers saying,

> My family supported me being over there [in china]. I mean they didn't try making me come back or make me feel guilty for not being here and they come and visit me a lot. … In my group, we had strengths and weaknesses. We were completing each other with the pronunciation and the pinyin and the characters.

Likewise, Bill appreciates his family support in learning Spanish saying, "my mom loves the language love the food … my family broke their back to get me to Spain to get a firsthand experience with the language." Sarah highlights the help she gets from her classmates and how her mom tries to support her learning through getting her to practice the language outside the classroom. She says,

> During my first semester of Arabic, we formed a pretty close group of friends. We would support each other that way plus working with the TAs …. My mom encourages me to keep learning it. We had to have conversation partners back in the lower level classes. So, I had a conversation partner from Saudi Arabia for two or three semesters. Also, my mom and I go to Middle Eastern restaurants and markets often. She always encourages me talk to them in Arabic. It is so embarrassing but yeah that is pretty much helps.

Sara also expresses the role of the media in honing her skills in Arabic. She says, "Al Jazeera is the help I get. Then, I just like watching foreign movies and trying to see how much I can pick up without the subtitles to see how much I can understand of what they're saying." John expresses how his church group helped him by being tolerant of the mistakes he makes saying, "Within the church group, there was really a nice set up because you have people that wouldn't make you feel bad if you make a mistake. Instead, they were there to help you". He also mentions the help he gets from his sister, "My sister is now an adjunct French professor. She is helps me. My mother also had it in college. So, it is quite a bit in the family. They speak to me in French to let me practice." Sharing a similar experience, Cheryl talks about how having tutor groups supports her learning Spanish,

> We have tutors groups that meet and … chat. We practice that way. I have been meeting with groups online where people from different ages - not necessarily from the university - would get together and talk. These groups had native

> speakers who were happy that we are learning their language. The most helpful thing that helped me learn Spanish is being corrected by native speakers.

Friends have an outstanding role in providing support for foreign language learners. William expresses that he joined the Chinese program because he had a lot of Chinese friends who would help him learning the language. Further, Scott declares that having a model friend who excelled in Russian and got a very good job after college, encouraged him to learn a foreign language. Adding to the role of friends and family in providing support for participants in learning the language, Suzan talks about how having a Spanish boyfriend was of great help to her. She says, "It is actually because of my boyfriend … He got me really comfortable with conversations, like when ordering from a menu or talking to a professor." She also mentions the specific example of "an idiomatic expression" when he would explain the practical meaning better than just reading it from a dictionary.

Support was apparent in participant responses as a major encouragement for their study of the foreign language. The source of this support varied. Some came from immediate family members. Other came from friends and classmates. Significant others had their role in providing such support as well.

Teacher's Role

All the participants stated that they had good learning experiences with their foreign language teachers in high school. Their experiences with college instructors were mainly similar although some of them had unpleasant experiences to tell. Caroline reflects,

> I really appreciate my pronunciation teacher. She … grilled and grilled us … She made us good speakers that way… I had specially one tutor who encouraged me to earn my mistakes … He said, "If you get to the end of the day and you made some mistakes, this means you've learned because you used it enough to say something wrong." This way, I learned a lot.

Ben had the same experience with the Chinese instructor. "The way she taught the class was more of a spoken style. We never spoke in English. She'd ask you a question in Chinese and you have to answer in Chinese." Likewise, Sarah had a very influential relationship with a certain instructor to decide to continue learning the foreign language. She says,

> After the required two years, I … just though I'm just going to quit. But when I found out the instructor was Adam, I was like okay I'll continue. …. Adam is just like a blast. Even if you don't understand what's going on in class, he finds a way to help you out with it. … Adam is just like my ideal kind of teacher. I like the hands on activity. … There's always some kind of constant communication in Adam's class and that helps a lot instead of just strictly doing drills from the book.

Sarah asserts the importance of the instructor for a student to continue the study. She says, "If I didn't have Adam, I wouldn't have wanted to continue." John refers to his French language instructor as his "nice professor". He reflects,

> My nice professor … makes me feel like I am a good student. … She was very encouraging and ... makes me feel good about my ability. … I actually have my professor's cell phone number and I can text her. … Being able to communicate freely with your teacher is really important because you need to understand their expectations for you.

Similarly, Jeremy expresses the different experience he had the Arabic language classes and compared to his Spanish high school classes. He states,

> Once, I got there [to the language classes] and I saw how teachers actually cared about teaching the class They took the time to offer to help you …. The Spanish teachers I had … are very passionate … but they just sit there and they give you vocabulary definition...They lecture in a language class. Then I am writing this down in my notebook and never looking at it again.

Jeremy recalls his feelings about two types of college instructors; the friendly and very relaxed and serious one. He reflects, "I got to be very good friends with Bassam, the Arabic TA. … He is understanding and knows that this isn't our native language and that a lot of us try and a lot of us don't." He expresses his experience with another type of instructor, the serious one, saying, "Anna is a very in your face kind of teacher. I mean she holds you very accountable for what you do and what you don't do that was sort of scary when you first get there." He continues, "If you didn't do your homework, she would say, "You should've done this. You're going to be behind today" … which was beneficial at the beginning because if I didn't have a teacher like that I probably wouldn't have put as much time in it". He asserts that both types of instructors were beneficial to keep him motivated and engaged on the one hand and to push him to excel on the other. Similarly, Suzan expresses her gratitude to foreign language instructors who encouraged her to continue learning Spanish, "I liked how foreign language teachers really value us and make us feel … they just want us to do well more than other subjects." Following the same comparison, Molly says, "In foreign language classes, the teachers are different … I felt comfortable setting in their classes because you've to be creative to speak. When I came to Sophia's class, I felt like she wants everyone to learn and speak Spanish well. So, I kept going on with it because I felt that she expected us to do so."

The aforementioned response excerpts showed the influence of the classroom instructor in motivating college student. Instructors have been reported to have several characteristics that were essential for the learners: patient, dynamic, consistent, engaging, serious, helpful, caring, and supportive.

Classroom Role

Classroom environment has a huge role in shaping foreign language students' skills. Moreover, it is one of the main constructs that help learners decide whether to continue their studying of foreign language or not. Jeremy articulates this fact saying, "I liked it a lot. So, I kept on going. Then the teachers got better and the classes got smaller. It was really easy to pick up and learn well - not easy but the environment made it easy. So, I just kept going with it." He also expresses how foreign language classes are his favorites, "It's been my favorite class to go to and I tell all my friends to take Arabic for one semester and I promise 'You won't regret it'." In describing why the foreign language classes are his best, Jeremy says, "The class was fairly small … in one of those really small classrooms. So, everyone was jam packed in there. So, you really had to talk to the people next to you because you were so close to them. You really didn't have a choice."

Although the first experience in the foreign language classes was not satisfying for many of the students because they did not understand what was going on, for different reasons, some of them made up their minds that they want to continue studying. Jeremy explains this saying,

> The first class was scary but it was at a slow enough pace that you could pick up if you try hard enough … There were a few of us would have all their homework done. We would know what's going on and participated … but, it was scary at first.

When comparing his previous experiences with other foreign language classes, Jeremy stated that the Arabic classes are incomparable to these classes in a positive way. He says, "I've been in Spanish classes and in French classes." Jeremy expresses how he is kept engaged in the Arabic classes whatever the surrounding circumstances are. He says,

> There are days when I never bring my book and I'm more engaged in the class that day ... because it forces you to be confident because you know you to have to participate. Or else, you're going to sound like a fool. You know that everyone else is in the same boat. So, just deal with it and move on. Try your best pretty much and it's just more rewarding. I think it's just the perfect classroom experience, I guess.

Some of the participants described the exercises they have in the foreign language classes and asserted that they have a great impact on creating a very active and fruitful learning environment. John says,

> I think probably the biggest windows into their culture that we've done was when we had to watch the news in French and we had to do a one page report on it. The news can really give you a perspective on what people find important because if it is not worthy it won't be on the news. It … keeps you up with the language but

> also sharpens your understanding of the culture. I think this is extremely effective too on a lot of different levels.

Caroline also describes some of the activities that she had and recommended them to foreign language teachers to use in their classes. She says,

> We all know that the best way to learn is to practice. So, if there is some way that teachers could create more like conversational popcorn classes where they use. … a game or something to see who can respond many times that somehow can take down the shyness and the shame of mistakes and the lack of motivation. It will get students involved because this is where you learn where you're using those language muscles.

She continues to talk about the debate activity she had in the language class saying,

> One teacher often had us do debate that was interesting. She had us prepare so we knew what was going to be on. So, we could prepare some of the language and use it to debate and discuss the topic. … In that sense, we were developing our critical minds in the new language together with learning the words and its uses.

Participants also expressed that having fun in the foreign language classroom is helpful and encourages them to learn. John expresses how fun is important for him saying, "I am the kind of person who if not laughing and having fun, I am not learning. I feel I've wasted my time because I feel … you should learn and have fun". Moreover, some of the participants asserted that they enjoy being in the foreign language classes because they are more fun than other classes like math and science. They also stated that they learn more easily in the foreign language classes. Sarah reflects that the instructor, "finds a way to help you out with [your mistakes] and he makes fun about it. … The teachers' assistants just made class time a little bit more fun while learning". Jeremy had the same reflection about his Arabic instructor. He says,

> I would give a lot of credit to Adams's teaching style because he is just … so enjoyable and he is just so funny…… It's much more freeing to go into that class and know that you can ask questions and you can participate and you can be funny at some points and not always be serious.

Therefore, participants expressed that engaging classroom activities and the focus on practicing the language were very helpful as motivators that made them realize their goals of learning the language. Moreover, the element of fun as part of the learning process had an impact on their intentions of continuing their foreign language study.

Goals

While studying foreign languages to meet the college requirements, students are at a stage where they have to decide on their majors and are thinking of the job market opportunities that

could be available for them in the future. Moreover, some of the participants have the desire to go overseas to make friends and have deeper relationships while using the language they learned during their college journey. Jeremy expresses this saying,

> It's amazing because with an international business degree and speaking Arabic .. I'm not worried about finding a job after graduating because .. there will always be a company .. that is looking for people who can translate or read Arabic in some capacity. So, that's fantastic…. It started mostly for a resume booster and eventually made me change my major to international business.

He describes how he continues learning because of his love for the language. He says, "It became mandatory that I continue taking Arabic by the time I declared my major. But, I was already past the required amount. So, I just kept going because I like the language." Likewise Sarah articulates why learning Arabic is important for her resume and how it will be so helpful when looking for a job. She says,

> Well I'm hoping it'll give me a little leg up when I apply for jobs after I graduate. ... Knowing Arabic is in high demand right now in the political realm. So, I'm hoping … to work in some kind of nonprofit peace organization in the Middle East. I will be comfortable enough. … I will have better options to get a job with learning Arabic.

She describes the job openings she sees on her job search saying,

> . … Some kind of jobs listed like 15 languages. You get ten points if you know how to speak those languages. But if you knew how to speak Arabic and could pass the Arabic test you got 50 points. … Arabic would be more beneficial for my area of study because I'm doing international politics…. I'm on the international track on political science and I feel like there is so much going on between the U.S. and countries in the Middle East. So, I figured Arabic would be the best

However, Sarah's goals are not purely pragmatic. She also developed a passion for the language. She continues, "I just kind of fell in love with whole culture and area and everything. … I really like the whole idea of traveling to the Middle East or possibly working there." She also expresses how her intentions for studying Arabic changed after learning about the culture stating,

> I started taking Arabic and international politics with the thought that I'd go into the FBI or some kind of security job. But after … the culture classes about the Middle East, I really feel myself going towards an organization that helps people in the Middle East or something along those lines or like work for an embassy - not necessarily a security job anymore - but like helping people.

Similar to previous participants, John expresses his pride of learning the language and how he feel accomplish and unique because of his major in French

> Financially, I want to be able to get my foot on the door on places that I otherwise wouldn't. I find it fun and challenge my mind … I feel I'm exercising different parts of my mind … It gives me a sense of confidence that I am proud of what I accomplished and that I can do it. I drive a sense of pride. If you do something you enjoy and can make a living from it that is the key. … I'm interviewing for a job that requires being bilingual that's actually makes me feel good. … It makes a decent amount of money more than other jobs. … It is important to me because I like that extra little work on my resume.

Likewise, Caroline articulates her passion towards the language and her ambition to achieve near native proficiency. She also expresses her desire to travel overseas to use her education and establish deep relationships. She says,

> I am never pleased with my language level … I wanted to go overseas. … I like deep relationships and I actually lived in China for a total of nine and half years. So, I think that is the logical need to understand what people are saying and being able to express to my friends more and discuss deeper things with them. … Some interests and practical needs you only know when you live in a culture every day. That is what you want to take more of … I expect my world to continue being broader and to have deeper relationships with people who speak Chinese the more I learn the language.

Similar to other participants, Amy and Scott state that they planned their career with Arabic. Both of them like to have a job in the Middle East or in the USA where they can interact with people who use the language. Adopting the same goal, Molly says, "The plan for me is to learn French then go to the "Le Cordon Blue" in Paris. It's a French culinary arts institute like a French cooking school…. With a bachelor degree in French, I can make a name for myself when I am there…I want to prepare myself for the culinary school."

Having plans for jobs and careers after graduation influenced participants decisions to choose and persist in learning their specific language. Some had aspirations to work overseas. Others had the goal of joining international business firms. More, some of the participants just wanted to have the language proficiency as a plus that boosts their chances of securing local jobs.

Curriculum Content

Although the participants are from different language programs, they all agreed that the content of the curriculum did not prepare them well to be able to communicate with native speakers of the languages they are studying. They stated that the language they learn in class is different from the spoken language out there in the streets. Caroline says,

> My first experience with Chinese was basically terrible because Mandarin is the common Chinese language of all China. … In class we study Mandarin and we go out on the street and everyone is talking in a different dialects. So, it was very very difficult and frustrating and it felt we were not learning anything for an even a longer period of time because we cannot understand them.

Similar to her, John expresses his first experience in France saying,

> It was a massive shock ... I was out there on my own talking to people and kind of dealing with everything ... I went there with very basic understanding of the language … The French culture that I learned was from a book from 1970. So, we were learning words that were completely outdated. … We need to get away from the textbooks because it is a thing from the past. Really, we need to get into seeing scenes like through videos and interactive actions. … Having native speakers are more interesting in the class. … You can reach out to the internet that is always changing just like the culture you're studying and it can constantly be updated.

Sarah shares her dissatisfaction with the content of the curriculum they have and suggest some recommendations to improve it saying,

> When we grow up you learn like the color and the body parts and days of the week, and numbers and when we were in the lower level of Arabic classes, the book didn't touch base on any of that. We just learned random words and we never got to any of those basics. …

She also speaks about the lack of communicative activities in the course, "I think there should just be a course in how people really communicate in the Middle East should be added to the book to prepare us more." Likewise, Jeremy articulates his experience with curriculum and how he is struggling to communicate with his friends due to the different dialects, saying, "It was very scary because we got a book that was backwards. There wasn't any English but everything that we had to learn was in Arabic. I had no idea what any of it was. It was very difficult."

On the other hand, Peter shares his opinion about how textbooks can hinder the educational process. He says, "The nice thing about textbooks is that they make your assignment more concrete, like this is what you have to do. Fill in all the questions but that does limit your learning. Rather than really learning to understand the material you just fill in the answers." On the contrary, Michelle who was home schooled had a good experience with one of her textbooks. She says, "The good book had audio visual … There was actually a whole website with video clips and website links … So, you can watch and listen because it is really important for learning the language."

The above responses of participants showed the importance of curriculum design and textbooks in motivating foreign language learners. Some mentioned the role of spoken activities. Others highlighted the need for more communicative approach away from the textbooks. Some others stressed the importance of audio-visual aids along with the textbooks.

School Exposure

All the participants in the study had been exposed to at least one foreign language in high school. Every one of them agreed that they did not have too many options of foreign languages to choose from. It was either French or Spanish that they had to choose from. They indicated that the foreign language experience they had in high school was neutral or positive. John talks about his high school experience saying,

> We had only Spanish and French; I did not want to take Spanish because I thought it is an ugly language. … It is too lax in the high school because there is no urgency. You are just you doing it for fun…. There is also a sense that you never going to need to use it to communicate with people to accomplish things.

In his opinion, John argued that the lack of other students' motive to learn foreign languages is due to the United States isolation from the rest of the world and the current education system. He says,

> I think the United States is very isolated culturally …we aren't starting early enough… The younger you learn the language, the better you are because your mind is still developing and still associating things and you are still giving everything in the world a name.

John tells how he was part of a university activity to introduce high school students to university students who are studying foreign language. He suggests that such activities should be done more often and spread to other languages. He says,

> We have … the French Immersion Day. I volunteered … to talk to the kids in high school. If you get the kids in with other university students that are studying the language, I think you can get where I am and you can speak fluently.

Similar to John's experience, Caroline expresses her high school experience and some of her recommendations as well. She says,

> It is good that some middle schools and high schools are offering Chinese. … I have a Chinese friend who is teaching. She invited me to her class to speak Chinese to the students and show them that they can learn like I did. I showed them some of the stuff I brought back from China. … I think that pre-exposure is the best if you start learning a second language at age of 12 because you are old

> enough to remember it and you're young enough that just your brain can take it all in.

Likewise, David says, "After four years in high school, I was pretty close to being able to speak Spanish really well … I wanted to continue because I thought with a little bit more work … I could speak it pretty well." He goes on to state that he gave up his original major, "That's why I decided to give up math and major in Spanish."

All the participants agreed that a previous exposure to the foreign language in high school influenced their decision in choosing a foreign language in college. Although some of them reported a negative experience in high school, they took the decision to learn a foreign language even though it is different from that they learnt in high school. On the other hand, those who had a positive high school exposure continued with the same language. Further, some of them majored in that specific language.

Culture

The study of the foreign language apparently influenced the participants' perceptions towards the cultures of the countries speaking the target language. All the participants showed an appreciation to the cultural influence of the target language. Sarah Says,

> I really got to like the whole culture. I think that is what drove me to keep going. Being an American growing up through nine-eleven, you definitely have these images in your head of what the Middle East is like. But after I started taking classes, I fell in love with it and I'd definitely love to go there and travel and work.

Sarah continues to talk about preconceived images before studying the language.

> Before these courses, I thought that everybody in the Middle East was Muslim and probably ... is hostile, … backwards and uneducated. But these classes really proved differently. I knew the biggest populations of Muslims aren't even in the Middle East. They're in Asia… I've learned that the Middle Eastern people are very hospitable and welcoming and that they are well educated. … From the media, you take everything from a political standpoint which is so biased. Then when you actually start learning, you figure out it's so completely different.

Sarah also turned to be an advocate for her foreign language culture. She describes her conversations with her friends saying,

> My friends will say something really biased like the typical American opinion of the Middle East and I'll be like "What are you talking about? That's not true at all" so I try to at least change the wrong opinions of my family and friends about the Middle East culture.

She also asserts the importance of having the culture courses along with the language courses and suggests adding more about culture to the curriculum.

> I definitely think it helps to have the culture courses along with the language courses because you can go back and forth and realize why you're learning something this way. … The language classes mixed with the history culture classes definitely changed my whole perspective. I mean I went from like wanting to secure the United States to just wanting to go over there and just help just be like peaceful negotiations and the like.

Likewise, John expresses the significance of studying a foreign language and how bilingual people are privileged. He also states that studying about culture beside the language makes a great difference on people's perspectives. He says,

> People, who are bilingual, think differently with an analytic mind. They are able to think quicker through problems. … I enjoy learning about the differences of the French culture. When in France, I learned through an eye opening experience … You've to throw out all your preconceived notions. That is something that I learned. … I have more of an open mind now than before learning the language.

Cheryl expresses how learning a foreign language raises her awareness of her own culture and engages her in the global world. She says, "Learning Spanish helped me better understand my culture… It makes me a better part of the global community." Bill also explains how studying about the culture of the language was an eye opener. He says, "It was interesting because I didn't realize how Spain became Spain. It is just a big melting pot of cultures and because of their open coast line, all these invaders came in …and left their mark."

Although Caroline shared the same opinions with other participants, her long study abroad experience gave her a deeper insight and stronger appreciation of the culture. She emphasizes the influence of the cultural immersion. She says,

> Living in a culture for a long time, you almost soak up a lot from the culture and there is a lot more you can talk about and learn than you realize. … You can tear down some of the prejudice and stereotypes … Language changes opinions because we have open doors to make friends who make all the difference of how you perceive other people. … Before my trip to China, it seemed mystical. After being there, they are not so mystical. They are people too. But I never lost my idea that they are interesting and there is much to learn because they have an ancient culture that is so huge and diversified.

She continues to show her fascination with the Chinese culture and language saying,

> The Chinese language tells a lot about its people and its country for example, they have hundreds and hundreds of idioms and they have special tales behind each of it. … It draws your attention to some deeper meaning; deeper pieces of wisdom. So, all these stories they tell behind the characters give you windows into their culture.

Caroline expresses the significance of learning about the culture of the countries of the target language. She says,

> Being in the language classroom increases your understanding and respect for the culture. … Besides, the languages open the whole world for you because when you're interacting in Chinese, for example, you almost feel like a different person. … But because of the language, you're able to enter their world. It depends on how long you're immersed.

Amy also asserts that language and culture are inseparable. She tells how she got interested in Arabic because of the long history of the language. She says, "When you learn a language you also learn the culture." Ben explains that culture was the main reason for him to join the Chinese language classes in the first place. He says, "I always had interest in sort of the Asian culture like Japanese samurai which is cool. I like the medieval history of it too." He continues to express how he liked the typography of the Chinese language, "Chinese characters are like symbols … it is so different than ours and it looks fascinating." William shares the same passion, "I am really into Marshal Arts, Tai Chi, and Kung fu. These came from China. So, I kind of have that link with China."

Culture showed a great influence on participant motivations to continue their studies of the foreign language. It exceeded that role to influence their level of proficiency in the target language. Although some of the participants reported that culture was their main reason for choosing the language of study, others expressed how they fell in love with the culture during their language study.

IMPLICATIONS

Fun elements in the foreign language classrooms triggered participants' initial motivation and kept them interested in the content introduced in the classroom (Renninger et al., 2008). As the participants expressed how fun in the foreign language classroom has been a motivating element for them to persist in their study, it is recommended that instructors integrate a certain amount of fun in their instructional methods to keep students engaged and motivated. However, not all the participants devalued seriousness. Some of them stressed the importance of seriousness to accomplish their desired goals. Therefore, a mixture of educational fun activities and serious

tasks can be the right recipe for maintaining student motivation and academic achievement at the same time.

Student participants expressed the importance of the support they get from the instructor and their families to continue their endeavors of mastering the foreign language. Therefore, an awareness of the influence of such support among instructors can be empowering for the students (Brophy, 2008; Renninger, 2009). The family role can be influenced through organizing showcase activities where students can bring a family member and share their learning. During these activities, instructors can play an important role in raising the awareness of attending family members about their potential roles in supporting the learners.

The role of the instructor as a major construct influencing students' decision to continue their language study or even enroll in the language course was shared by all study participants. Instructional immediacy was another motivating aspect that was highlighted in observations and interviews. Moreover the instructor's choice of the learning tasks and providing the safe learning environment were stressed by the participants (Brophy, 2008). Therefore, creating a friendly relationship with the students is highly recommended to keep them motivated. Designing classroom activities as relevant to student level and interests can be another aspect that teachers are advised to utilize (Black & Deci, 2000).

The content in the curriculum is usually controlled by the instructors as they choose the textbooks for the courses. However, not all available textbooks are satisfactory for student participants' expectations as lacking interesting activities and the basic language components. Moreover, participants expressed dissatisfaction about the absence of culture aspects in the textbooks. Instructors are encouraged to exert a more deliberate effort in choosing the textbooks that meet the expectations of the students and to design extra material to supplement any deficiency they find in these textbooks (Brophy, 2008).

Early exposure to the foreign language showed a great influence on all participants. However, not all the experience was motivating as three of the participants expressed dissatisfaction with the limited choice of languages they were offered in high school (Matsumoto, 2009; Smith, 2009). Therefore, more collaboration between the university and the school districts can offer other options for students to choose from and to start studying the language of their choice at an early age.

Participants shared their desire to know more about the culture of the language they study. They shared that their knowledge they acquired about the culture not only changed their attitude towards the countries of the target language but also influenced their goals behind studying the foreign language (Magosa & Simopoulos, 2009). As students expressed their willingness to use the knowledge they acquired in the foreign language classroom, engagement activities including guest speakers from the target language can be integrated in the curriculum (1997). Field experience activities that may require students to reach out to nearby communities and share their experiences with their classmates can be beneficial in satisfying that aspiration to keep them motivated (Matsumoto & Obana, 2001).

LIMITATIONS AND FUTURE RESEARCH

The limited choice of the participants was the main dynamic that affected the study results. The study findings are limited to the student participants selected from those enrolled in the advanced levels of foreign language classes in the Department of Modern Languages. That said, the results could only explain the case of these students and cannot be generalized to include students at other institutions. Future research may target a larger sample or utilize findings of this study to generate a survey that may yield more generalizable results.

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TESTING THEORY AND RELATED FACTORS FOR INFLUENCING PROFICIENCY IN QUANTITATIVE RESEARCH

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ABSTRACT

A large majority of university students continue to struggle with quantitative research; and while there is existing literature in this area, little or no work has been done to provide an effective model for mitigating this situation. This study has addressed this gap by employing Knox's Proficiency Theory of Adult Learning as a basis for advancing a solution. Knox's theory was operationalized through multiple regression modeling for addressing research question: What factors will influence students' proficiency in quantitative research? The findings provided a validation of Knox's work; thus supporting the proposition that the right attitude, appropriate knowledge and relevant skill-set are key drivers of performance. More detailed results indicate that student motivation, teacher's influence, understanding statistics and aptitude for data analysis had a significant impact on proficiency in quantitative research; while competence with statistical software and quantitative aptitude were not impactful.

INTRODUCTION

One of the key philosophies of science and of quantitative research in particular is the paradigm of positivism. This suggests that knowledge derived from logical and mathematical treatment of data is the only true source of authoritative knowledge. The positivist view, however, is opposed by the interpretivist who emphases the need to understand or interpret beliefs and motives through a qualitative perspective rather than the quantitative alternative. Notwithstanding the debates and positive arguments, advanced on both sides, all countries and their industries have embraced quantitative methods as the business and econometric tool for analyzing business problems; thus providing a testimony to the importance of quantitative techniques to modern economies. Indeed, the decline in productivity in countries such as the United States has been associated with declining skills among students in mathematics and sciences. More generally, there has been 'talk' that quantitative skills are rapidly declining among students in the West and that this decline could be indicative of the struggling economies of the western world.

In a comparative study of Social Science and Education students, from Finland and USA, Murtonen (2005) found a negative orientation towards quantitative methods among students from both countries. This, he attributed to either difficulties that students were experiencing in learning quantitative methods or a lack of appreciation for empirical work. In reality, many university students continue to suffer from statistical anxiety (which is an aversion the student encounters

when faced with statistics) and a general inhibition to pursue quantitative research (Baloglu et al., 2011; Bradstreet, 1996; Kennett et al., 2009).

Statistical anxiety is experienced by approximately 80% of graduate students; and is found to have a debilitating effect on performance in both statistics and research methods courses (Onwuegbuzie, 2004). Further, seventy percent of graduate students do not read the 'Methods' section when assigned quantitative articles because they find the material complex; and do not understand how methods are linked to the hypotheses being tested (Corner, 2002, p. 671). Thus, it is not surprising that quantitative methods and statistics are reported to be two of the most difficult areas for students at both undergraduate and graduate levels (Murtonen, 2005). With the university being the conduit to the organization therefore, many firms are challenged to produce the required analyses at the cutting-edge as skill sets in research and statistics are woefully inadequate.

It is therefore startling that quantitative methods as well as the science of learning research in general have not been extensively studied despite the difficulties that students experience in this area (Murtonen et al., 2008). Moreover, most of the articles written in this area are of poor methodological quality and lack critical information on the practice of research (Bernard et al., 2004). Indeed, the study of quantitative research should be considered vital in a university's curricula since future management knowledge and theory are developed through research (Corner, 2002). On this basis, this study will investigate the factors that impact students' proficiency in quantitative research and will utilize Knox's Proficiency Theory as the base theory for explaining the research model.

THEORETICAL FOUNDATION

Knox's Proficiency Theory of adult learning postulates that proficiency is the unifying concept for relating *knowledge*, *skills* and *attitude* to improve *performance* of the adult learner (Knox, 1980). Proficiency, he noted, is "the capability to perform satisfactorily if given the opportunity" (p. 378). "This theory of learning is based on the learner's motivation to learn and it assumes that he or she will be able to learn at a proficient level" (Froelich & Puig, 2009, p. 12). Thus, if the student has acquired the knowledge, gained the skills and displays the right attitude towards the subject matter, then he or she will perform 'satisfactorily', ceteris paribus. Knox further suggests that the gap between desired and actual proficiency provides a motivator for the student to learn as long as the student possesses self-confidence and the perceived benefits of learning are worthy of the effort (Brez & Taylor, 1997).

RESEARCH MODEL AND HYPOTHESES

The review of the contemporary literature in this stream of research has led to six separate factors that could influence proficiency in quantitative research. These are *student motivation* (Breen & Lindsay, 1999), *competence with statistical software* (Proctor, 2002), *quantitative aptitude* (Schuhmann et al., 2005), *aptitude for data analysis* (Onwuegbuzie, 2000), *understanding statistics* (Corner, 2002; Murtonen, 2005) and *teacher's influence* (Knox, 1988).

Student Motivation and Proficiency in Quantitative Research

The relationship between student motivation and academic performance is quite complex since motivation is often confounded with other variables such as intelligence, interests and attitudes (Breen & Lindsay, 1999). Despite this complexity, "there are clear associations between what motivates students and how they perceive research" (p. 87). It was found that students who considered proficiency in research as important to the world of work had a deeper approach to learning and found it easier to learn research methods than other students (Murtonen et al., 2008). Students, for example, are often mistaken in their views about future work requirements and consequently may not be motivated towards learning and selecting courses, such as statistics, that will eventually turn out to be of value to them in the world of work (Murtonen et al., 2008). Moreover, "if students do not see the value of these skills for their future life and work, they may have problems in their motivation to learn research skills" (p. 609). Thus, it is proposed that:

H1: Student motivation is positively associated with proficiency in quantitative research

Competence with Statistical Software and Proficiency in Quantitative Research

Competence with statistical software was found to be a positive indicator of performance in quantitative research (Proctor, 2002). In his study of Excel and SPSS users, Proctor (2002) found that students who were randomly assigned to use Excel for statistical analysis reported higher levels of proficiency in quantitative methods than those randomly assigned to use SPSS. It was also found that Excel users had a better understanding of, and competence with, the software than SPSS users. Hence, it is proposed that:

H2: Competence with statistical software is positively associated with proficiency in quantitative research

Quantitative Aptitude and Proficiency in Quantitative Research

The absence of quantitative aptitude or quantitative skills among students has been associated with bad experience with mathematics; and would usually lead to apprehension or anxiety towards quantitative courses such as statistics and research methods (Onwuegbuzie, 2000). Thus, it can be assumed that quantitative aptitude is necessary for performance in quantitative courses. Notably, quantitative aptitude was found to be a very important determinant of performance in economics on both pre and post course surveys (Schuhmann et al., 2005). Hence, it is proposed that:

H3: Quantitative aptitude is positively associated with proficiency in quantitative research

Aptitude for Data Analysis and Proficiency in Quantitative Research

One of the keys to data analysis is to understand the concept of measurement, the relationship between measurement and constructs and to know what measurements are appropriate for the selected analytic technique (Corner, 2002). Thus, understanding of measurements and aptitude for data analysis are expected to be highly correlated. Corner (2002) further suggested that knowledge of measurement will deepen the student's capacity for quantitative research; and

therefore implies a positive relationship between performance in data analysis and proficiency in quantitative research. Thus, it is proposed that:

H4: Aptitude for data analysis is positively associated with proficiency in quantitative research

Understanding Statistics, Teacher's Influence & Proficiency in Quantitative Research

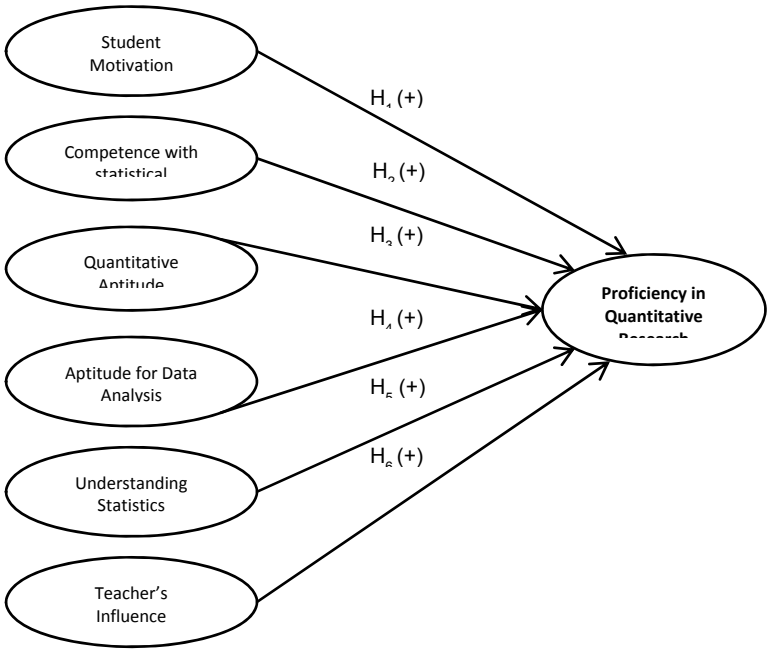

Figure 1: Research Model

Teachers of research and quantitative methods are often faced with the deep-seated challenge of delivering on these courses as students' perceptions of the discipline of research are shadowed by statistical anxiety and negative attitudes (Corner, 2002; Murtonen, 2005). Also, it is not uncommon for students enrolled in quantitative research courses to consider these courses as unnecessary to their future careers. This begs the question as to whether this could be due to bad teaching or some other factors (Murtonen et al., 2008). In addition, it has been found that redesigning statistics course by combining qualitative and quantitative data analysis, within the same framework, can vastly improve the student's understanding of statistics (p. 34). With statistical anxiety and negative attitudes being so prevalent, teachers of quantitative research should make effort to lessen anxiety, especially for those students who are most threatened (Bell, 2003). Thus, the importance of good teaching in this area must be underscored as "helping adults to learn new tasks or behaviors through training to improve performance is a well understood bottom line" (Knox, 1988, p. 55). Taken together therefore, it is proposed that:

H5: Understanding statistics is positively associated with proficiency in quantitative research

H6: Teacher's influence is positively associated with proficiency in quantitative research

Based on the six factors that emerged from the literature and justifications for positing research hypotheses, the associated research model is summarized hereunder (Figure 1, above).

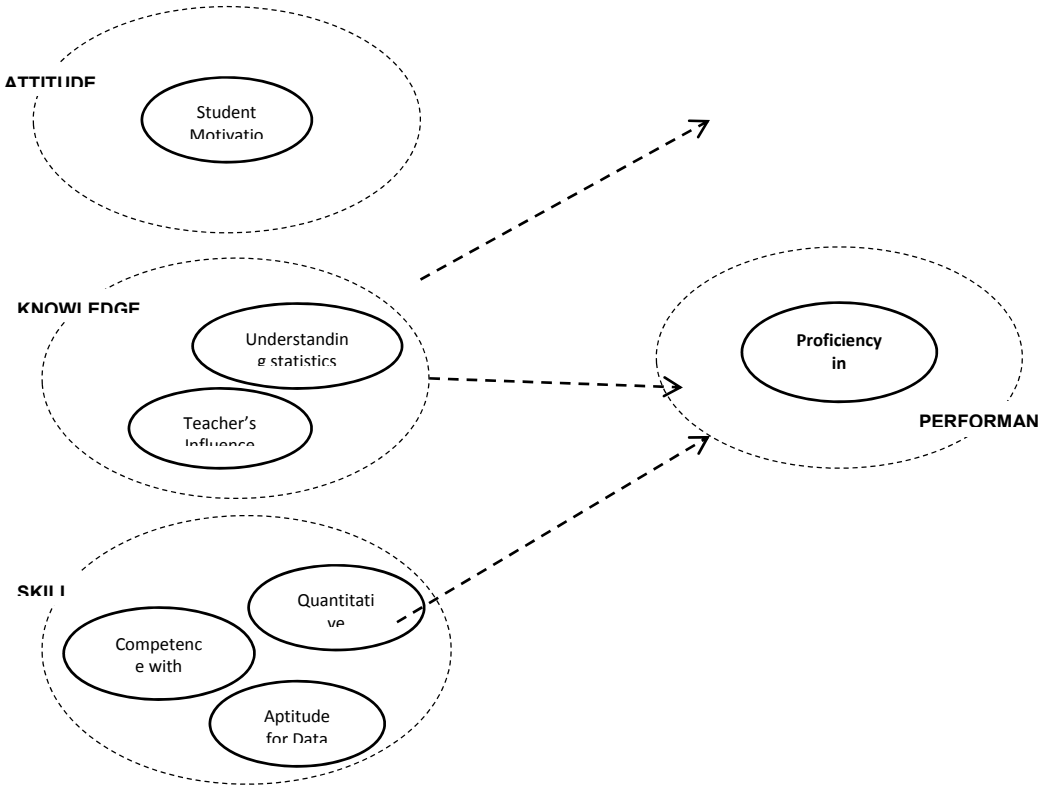

Figure 2: Relating Base Theory to Research Model

The study provides a test of Knox's Proficiency Theory of the Adult Learner and an application of this theory to the proposed research model vis-à-vis factors that impact students' proficiency in quantitative research. This Theory postulates that *attitude*, *knowledge* and *skills* are key drivers of *performance* in the adult learner. In testing the theory and its associated model, the main building blocks were operationalized as follows:

- ***Attitude*** *modeled as* ***student motivation***
- ***Skills*** *modeled with three separate constructs, namely:* ***competence with statistical software***, ***quantitative aptitude*** *and* ***aptitude for data analysis***

- ***Knowledge*** *modeled with the constructs of* ***teacher*** *and* ***understanding statistics****; and,*
- ***Performance*** *modeled as* ***proficiency in quantitative research***

Thus, the model will attempt to validate Knox's Theory and empirically determine the factors that would influence proficiency in quantitative research. See Figure 2 above for illustrating the relationship between base theory and research model.

METHODOLOGY

Sample

The sample consisted of 91 respondents who had all completed quantitative research course(s) at the University of the West Indies, Mona campus, in Jamaica. Females represented 59% of the participants while males constituted the remaining 41%. The large majority (76%) was students currently registered in degree programs and the remaining 24% were students waiting to graduate, data collected over the summer of 2011 when many students were not registered in any program and were waiting to graduate. Seventy five percent of participants were either currently or last registered with the Faculty of Social Sciences, 9% with Humanities and Education, 9% with Pure and Applied Sciences and the remaining 7% with the Faculty of Medical Science. Eighty one percent of the respondents were either currently or last registered in Bachelor's programs, 17% in Masters programs and 2% in Doctoral programs. All respondents were aged 45 years and less: 29% were between 18 and 21; 54% between 22 and 25; 9% between 26 and 30; 6% between 31 and 35 and 2% between 36 and 45.

Instrument and Measures

The instrument consisted of eight parts. First, a filter question was used in part 1 to ensure that only respondents who had previously done a quantitative research course with The University of the West Indies were selected in the sample. Other background questions were asked in this section aimed at describing the sample and verifying with university records that the courses the respondents indicated as being quantitative research courses were in fact so. In parts 2 to 8 which follows, all scales utilized were developed from the general education literature with each item being measured on a 5-point Likert scale anchored from strongly disagree through strongly agree. The scales were then checked for reliability with the Cranboch's Alpha test. Part 2 consisted of eight items. These were measures of the construct *understanding statistics* and include: 'I have a good understanding of statistical tests', 'I have a good understanding of p values' and 'I have a good understanding of the concept of confidence intervals'. The scale of eight items was tested for reliability and returned an Alpha of .895, and was therefore judged reliable (Hair et al., 2006). Part 3 consisted of two items that provide a measure of *competence with statistical software*. These were: 'I am hands-on with at least one statistical software (e.g. SPSS, EXCEL, SAS, MINITAB)' and 'I am able to effectively apply the software to research hypotheses'. This scale returned an Alpha of .847; and was therefore deemed to be reliable. Part 4 consisted of four measures of the construct *student motivation with quantitative research.* These were: 'I am motivated by quantitative research', ' I believe quantitative research is very important to my future career', 'I

do not enjoy quantitative research' and 'I would say that quantitative research is boring'. This scale returned an Alpha of .610 and was therefore reliable but "deemed the lower limit of acceptability" (Hair et al., 2006, p. 102). Part 5 consisted of three attributes for measuring the construct *quantitative aptitude.* These were: 'I would say I'm strong at quantitative courses', 'I tend to be a bit uneasy with number crunching' and 'quantitative courses are difficult'. This scale was found to be reliable on testing with Alpha equal .736. Part 6 consisted of four measures of *aptitude for data analysis*; for example, 'I am comfortable with quantitative data analysis' and 'I am confident with analyzing data'. The aptitude for data analysis scale was found to be reliable on testing, returning an Alpha of .853. Part 7 consisted of four items that represented the construct of *teacher's influence*. Examples of these items are 'the lecturer/tutor (combined) was excellent for the quantitative research course(s) done on the UWI campus' and 'the teaching techniques utilized in quantitative course (s) done at UWI were not effective in advancing my understanding of quantitative research'. The teaching scale was found to be reliable on testing with Alpha of .851. Finally, part 8 consisted of two measures of the dependent construct – *proficiency with quantitative research*. These were 'I would rate myself as proficient at the level of quantitative research that I have studied' and 'my behavior to quantitative research has been positive after having done quantitative research course(s) at UWI, the second item was included as a measure of proficiency as there is consensus on learning theories that proficiency is attended by positive behavioural changes. The proficiency scale was found to be reliable on testing with Alpha equal .733.

Data Analysis and Results

SPSS version 16 was used for describing the sample and testing the predictive model *vis* six factors that could influence proficiency in quantitative research. Table 1 presents the descriptive statistics and correlations for the variables in the model. Almost all correlations were significant at $p<.01$; and the issue of multicollinearity was not material as the Pearson's r was considerably below the threshold of 0.9 in all instances (Pallant, 2007, p. 149).

Table 2 presents the results of the predictive model where H1, which proposes that the greater the motivation of the student, the more proficient he/she will be at quantitative research was supported ($p<.01$). However, contrary to expectation, H2, which proposes that the more competent the student is at statistical software, the more proficient he/she will be at quantitative research was not supported. Similarly, H3, which proposes that quantitative aptitude was a positive driver of proficiency in quantitative research, was not supported. However, in accordance with expectation, H4, which proposes that students with aptitude for data analysis will be more proficient at quantitative research than student with less aptitude was supported ($p<.05$). Similarly, H5, which proposes that better understanding of statistics will lead to more proficiency at quantitative research, was supported ($p<.01$); and finally, and consistent with expectation, H6, which proposes that better teaching will lead to more proficiency in quantitative research was supported ($p<.10$). The detailed discussion and implications on these results will be presented in the section below.

Table 1
Means, Standard Deviations and Pearson Correlation Coefficients N=91

Variables	Means	S.D.	1	2	3	4	5	6
1. Understanding statistics	3.5192	.8895						
2. Competence with statistical software	4.0165	.9928	.597**					
3. Student motivation	3.4368	.8592	.372**	.275**				
4. Quantitative aptitude	3.2747	1.001	.508**	.467**	.504**			
5. Aptitude for data analysis	3.5907	.8720	.766**	.646**	.410**	.576**		
6. Teacher's influence	3.3269	1.111	..353**	.247*	.275**	.378**	.355**	
7. Proficiency in quantitative research	3.4011	.9581	.728**	.527**	.536**	.575**	.709**	.429**

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed)

Table 2
Results of Regression Analysis of Factors and Proficiency in Quantitative Research

Independent Variables	Beta	S.E.	p-value
Constant	-.462	.329	.164n/s****
Understanding statistics	.400	.110	.000***
Competence with statistical software	.031	.083	.711n/s
Student motivation	.247	.083	.004***
Quantitative aptitude	.085	.082	.302n/s
Aptitude for data analysis	.242	.122	.050**
Teacher's influence	.101	.060	.099*
R^2	.663		
Adjusted R^2	.639		
F(6, 84)	27.596***		

N = 91
*p<.10
**p<.05
***p<.01
**** Non-significant intercept does not affect validity of the model and can be ignored as the regression is not computing a total score.

DISCUSSION

The study provided a validation of Knox's Proficiency Theory of Adult Learning with results supporting the view that the right attitude, appropriate knowledge applied and relevant skill-set are key drivers of performance in quantitative research. New ground was broken with this project as a thorough review of extant literature revealed that little or no work was previously done to empirically authenticate this very important theory. In operationalizing Knox's theory by employing student motivation as a proxy of ***attitude***, understanding statistics and teacher's influence as constructs of ***knowledge***; and competence with statistical software, quantitative aptitude and aptitude for data analysis as proxies of ***skill***, the study also contributed a new model to the literature for predicting students' proficiency in quantitative research. Indeed, a model that

was badly needed (see Bernard et al., 2004 and Murtonen et al., 2008) in light of the challenges that students are experiencing in this area of study.

The results showed that all three constructs (attitude, knowledge and skill) were relevant in advancing quantitative competencies. However, in the case of skill, only one of its three proxies (aptitude for data analysis) was impactful on performance, making skill a partial driver of proficiency in quantitative research. Notably, the other theoretical constructs of knowledge and attitude were fully impactful on students' performance in quantitative research. More specifically, the results of the regression model accounted for 66% of the variance observed in proficiency in quantitative research; and showed that student motivation, teacher's influence, understanding statistics and aptitude for data analysis had a significant impact on proficiency in quantitative research; while competence with statistical software and quantitative aptitude were not impactful.

The positive relationship found between student motivation and proficiency in quantitative research is consistent with expectation and accords with Murtonen et al. (2008) where it was found that students who were more motivated to do research found it easier to learn the subject and consequently would be more proficient than students who were less motivated. And so, while it is felt that the relationship between student motivation and proficiency in quantitative research is quite complex and could be confounded with other variables such as interest and intelligence (See Breen & Lindsay, 1999), it can safely be assumed that motivated student would have the right attitude to the subject and, on balance, would be more likely to perform than their less motivated counterparts.

On the knowledge construct which was measured by understanding statistics and teacher's influence, both proxies were found to be positively related to proficiency in quantitative research. Again, this is not surprising as the more knowledge the student has in this area, the better the performance is expected to be. Indeed, a good understanding of statistics should help to mitigate statistical anxiety (Onwuegbuzie et al., 2010) and would therefore assist with the students' performance. Needless to say, there is no substitute for a good teacher, especially in this area, since quantitative methods and statistics are deemed to be two of the most difficult courses for students at both undergraduate and graduate levels (Murtonen, 2005). Teachers, who are so motivated, would no doubt provide a positive influence on students' performance particularly in cases where they employ strategies for improving the students' perceived understanding of statistics, allow students to share their level of apprehension about the subject and apply statistics to real-world situations (Onwuegbuzie et al., 2010, pp. 29-30).

Intuitively, it would seem that quantitative related skills possessed by the student are expected to positively impact performance in this area. This argument is supported by literature as attributes of skill such as competence with statistical software (Proctor, 2002), quantitative aptitude (Schuhmann et al., 2005) and aptitude for data analysis (Onwuegbuzie, 2000) were each adjudged to have a positive influence on students' performance. However, in testing the research model, the findings suggest that only one of the three constructs of skill, namely, aptitude for data analysis, was a key driver of performance, thus rendering skill an incomplete predictor of proficiency in quantitative research. This, of course, does not invalidate Knox's theory as the result shows that skill provides an influence on proficiency albeit a partial influence as evidenced in the instant case.

There are a few possible explanations for the absence of a relationship between competence with statistical software and quantitative aptitude vis-à-vis proficiency in quantitative research. First, competence with statistical applications such as SPSS or Excel could lead to a modicum of comfort with quantitative research. However, this could be misleading, as many students are proficient with these software applications but scarcely understand the concept of measurements, the relationship between measurement and constructs and what measurements are appropriate for the selected analytic technique (Corner, 2002). Moreover, understanding of the application of measurement is precursory to the understanding of data analysis; and performance in data analysis, in turn, is antecedent to proficiency in quantitative research. Second, most of the respondents surveyed (75%) were registered with the Faculty of Social Sciences with the large majority of these students pursuing a business curricula by doing Management Studies degrees. Notably, quantitative analysis curricula in most universities would generally include research methods, statistical analysis, management science and problem solving courses (Waugh et al., 1994) and so many Management Studies students would have recorded high scores on quantitative aptitude with their quantitative analysis competences restricted in management science courses such as productions and operations management with limited competences in research methods and statistics. Quantitative research, on the other hand, is generally assumed to constitute research-oriented courses and concentrates on social research and statistics while the more applied quantitative courses will concentrate on management science techniques (Waugh & Hy, 1985). Thus, it can be argued that many of these students, being business oriented, did not consider themselves proficient at quantitative research although they felt they had a quantitative aptitude.

For educators, the results indicate that helping students to be proficient at quantitative research can be approached on three fronts. First, students' ***attitude*** could be aided by teachers who should motivate students to do research. And, while this could be viewed as a contradiction against the notion that students have the responsibility to motivate themselves, it is believed that motivating students through a system of rewards (which could include: verbal recognition, bonus marks or exemption from aspects of course work) could lead to repeat and improved performance. Other motivational tips that could be employed by teachers of quantitative research are to: encourage and reassure students that they can do the work, use humor and teaching gimmicks for imparting concepts; and generally be more patient and understanding with students who are challenged (Onwuegbuzie, et al., 2010). Second, ***knowledge*** should be enhanced though improving the students' understanding of statistics as this is required for proficiency in quantitative research. Understanding statistics involves the ability to accurately *comprehend*, *interpret* and *evaluate* data; and consequently the teacher should develop the curriculum based on the three benchmarks. Third, ***skills*** should be honed particularly in the area of data analysis. This data analysis process should focus the concept of variables (categorical vs. continuous), the univariate, bivariate and multivariate relationships/ assembling of these variables; and the concepts of hypotheses and statistical testing to be employed based on proposed research questions. And while competence with statistical software and quantitative aptitude cannot be ignored in the skills honing process, it would seem that, these constructs, in and of themselves, will not influence proficiency in quantitative research but could influence data analysis skills, Competence with statistical software (.646) and quantitative aptitude (.576) are highly correlated with aptitude for

data analysis and are therefore expected to positively influence data analysis skills, which are required for proficiency in this area.

Notwithstanding the rigor adhered to in this study, there are few important constraints that must be highlighted. First, the study is subject to response bias that characterizes survey-based research, particularly in measuring proficiency as an attitudinal construct where over reporting is likely to take place. Second, the sample may be considered small for a model which has six independent and one dependent variable, Estimates suggest that ideal sample size for regression type models is 20 x number of independent variable which would amount to 120 (20x6) for this study. However, this study utilized 91 respondents; which is an acceptable sample size albeit not an ideal standard. Third, the survey was administered on one campus of the University of the West Indies which would have implications for generalization.

CONCLUSION

This study has provided an empirical validation of Knox's Proficiency Theory of Adult Learning; thus supporting the proposition that attitude, knowledge and skills are key building blocks of performance of the adult learner. There has been conceptual support for Knox's work (Brez & Taylor, 1997; Froelich & Puig, 2009); however, new ground has been broken by this project as a thorough search of extant literature has uncovered little or no evidence of an empirical endorsement of this work. The application of the theory to the model developed in this study for predicting students' proficiency in quantitative research is also a needed contribution in light of the struggle and anxiety that students are experiencing in pursuit of quantitative research courses.

Detailed results showed that student motivation, teacher's influence, understanding statistics and aptitude for data analysis had a significant impact on proficiency in quantitative research; though competence with statistical software and quantitative aptitude were not impactful. Taken altogether, the findings suggest that these four factors will directly influence proficiency while the other factors (competence with statistical software and quantitative aptitude) may not directly influence but will drive other determinants such as aptitude for data analysis which, in turn, is required for proficiency. Educators should therefore incorporate these factors in their curricula for delivering quantitative research courses in a bid to ameliorate this worrisome situation of quantitative paralysis and to improve students' competencies in this area.

Further research should replicate the model presented in this paper for testing Knox's work, largely because of the paucity of literature in this very important area. Further research should also substitute other proxies for representing the troika of attitude, knowledge and skills. There should also be a substitute of the attitudinal measure of *proficiency with quantitative research* modeled with actual grades in further research. In the final analysis, it believed that a fulsome validation on this theory can only be accomplish through replication and with substituted proxies.

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SELF-ASSESSMENT OF MANAGEMENT COMPETENCIES AND INTENTION TO CHANGE

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ABSTRACT

The purpose of this research is to investigate the effects of student self-assessment of management and leadership competencies on their intentions to change competency levels and on perceptions of actual change behavior. Increasingly, books and courses used in business schools typically contain some form of pre-assessment of competencies in test or survey format. Many university faculties use these self-assessments of competencies to help guide learning and practice in courses. Some use the assessments found in texts; some go beyond these to use learning contracts and action plans to guide further learning. Others do this in the context of a school or program competency model and across the curriculum. There is, at present, ample research discussing self-grading of assignments and self-feedback against various forms of rubric in experiential learning. That research primarily shows that students over-estimate their performance. There is also research on non-graded pre-assessment before beginning instruction showing that it increases motivation to learn. However, there is little research concerning self-assessment of leadership competencies. In addition, there is virtually none showing that complex self-assessments of competencies in the curriculum have any effect on student learning, intent to learn, or increased behavioral or affective competence in the short or long-term. This study showed that such self-assessment of competencies changes attitudes and behavior toward learning and that writing an action plan enhanced it even further. Self-efficacy and other co-variants such as gender were found to have little effect. Thus, this study begins to answer the question of the usefulness of non-graded pre-assessment of competencies now commonly found in business management textbooks.

INTRODUCTION

Four issues motivated the research presented here: 1) educational accrediting agencies have changed their assessment focus from inputs to outputs, 2) schools of business have been challenged to improve relevancy and provide more behavioral skill training, 3) more books and courses used

in business schools contain pre-assessment tools for self-assessment of competence, and, 4) there is little research showing this self-assessment has any effect on student learning. The purpose of this research is to study the effect of student self-assessment of competencies using surveys in a pre-learning situation on intent to improve level of competence and on perceptions of actual behavior directed toward change.

The concept of self-assessment has different meanings for researchers with different backgrounds. One definition concerns the learner's self-grading of a piece of work (Sitzmann, et al. 2010). Research using this definition usually looks into the validity of the grades by comparing the grade given by the learner with that given by the teacher (Bell and Federman, 2010). In the present study, self-assessment takes on a different interpretation. It refers to the learner's evaluation and appraisal of his or her own competence and performance in comparison to an established competence model or performance rubric. It is designed to motivate the learner to perform at a deeper level in class (Paris and Paris, 2001). Instead of making judgment on the validity of the learners' self-evaluation (their capacity to grade themselves), this study makes use of the learners' self-assessment to build the motivation of the learners. Self-assessment in this sense is a tool for enhancing the knowledge of the learner about his or her own competence. It is also a tool for motivating the learner to perform at a deeper level in class and in extra-curricular activities. This type of self-assessment is becoming a critical skill because of the change in program assessment to that of competency outcomes and the stated desire of many schools of business to develop life-long learning. Examination of this form of self-assessment is also important because of the level of self-assessment exercises/surveys and knowledge checks (Wirth and Perkins, 2012) used in business textbooks today. There is little proof that these textbook enhancements improve learning. This study helps investigate the usefulness of this kind of self-assessment used in classes. It also will help understand if the addition of action plans increases intent to learn and to improve competence.

Competency Assessment in the Curriculum

Schools of business have been assessing their programs for decades. Recently, accrediting agencies have changed the assessment focus from inputs to outputs; specifically the output of competency-based learning (Garman and Johnson, 2006; Gardiner, Corbitt and Adams, 2010). Furthermore, many critiques have challenged schools of business to improve relevancy and become more accountable to market needs (Keys and Wolfe, 1988; Rubin and Dierdorff, 2009). Navarro (2008) surveyed business schools and found a lack of emphasis on multidisciplinary integration, experiential learning, and teaching of soft skills such as leadership, negotiation, team building, etc. The misalignment between required career skills and academic teaching has spurred different teaching and assessment methods. Garavalia, et al. (2003) suggest that assessment depends on the nature of the learning. They describe three distinct types of knowledge - declarative, procedural, and conditional. Declarative knowledge is "knowing that" something is

so and is typically assessed using multiple-choice or other types of tests. Procedural knowledge is "knowing how" to execute a skill or apply concepts and principles to specific situations and is assessed through performance. Conditional knowledge is "knowing when and why" to utilize declarative or procedural knowledge. Business competency is complex and faculty should assess students in terms of relevant performance; for example, students should be able to fill out their own tax returns. These types of skills can only be apprehended and appreciated if the student performs them. Thus, pedagogy based on behavioral learning and competence assessment is increasing in business schools. Because assessment of behavioral skills is cumbersome and expensive and it is difficult to determine each student's starting point, there is an increase in self-assessments.

Self-Assessment

Hand, et. al. (1996) have shown that the most significant single influence on student's learning is their perceptions of the assessments – most students deliver what their teachers will reward. "The tightening of resources is inevitably driving academics towards lower contact times (p.118)" but this does not necessarily mean we must have lower quality assessment and learning. There are ways to use assessment to drive learning.

Sitzmann, et al. (2010) provide resolution to diverse research findings about using self-assessments to measure knowledge and skill attainment. Their meta-analytic findings consistently show that self-assessments of knowledge are generally not a valid measure of cognitive learning and should not be used to assess learners' cognitive knowledge level or improvement. In their review, however, self-assessment was strongly correlated with motivation and reactions than with knowledge. Bell and Federman (2010) suggest future research focus on teasing apart different types of self-assessments, on understanding the conditions under which these assessments are more and less valid and can help address these gaps and advance our understanding of learners' self-assessments.

Sitzmann, et al. (2010) found that factors in course design and implementation might moderate the accuracy of self-assessments in relation to learning. For example, Ford, et. al. (2009) suggest "students who lack work experience upon which to base self-assessments will need other means to develop a personalized understanding of the competency domains (p. 193)." Feedback during the course, the type of learning strategy employed, the availability of natural task-based feedback, opportunities for practice of self-assessment, and feedback on the accuracy of self-assessments may increase the connection between self-assessment and cognitive learning. Further, these attributes of course design and methodological approaches may have interactive or synergistic effects. Formative feedback from non-graded self-assessment may stimulate learners to identify strengths and weaknesses and may stimulate interest in learning. Feedback promotes accurate self-assessment that enables learners to focus their work efforts appropriately.

McMillan and Hearn (2008) have argued that clear learning targets, self-evaluation, and reflection are important pedagogical tools to enhance the social cognitive effect in education. Self-assessment in this sense enhances the knowledge of the learner about their own competence and motivates the learner to perform at a deeper level in class. Kato (2009) shows that self-assessment was accepted by more students than goal setting in a comparison of the two processes in a class. Saade (2007) has shown that intrinsic motivation had the most influence on intentions to learn in a course and perceived ease of use of the learning tools in the course had relatively little importance. Clearly, there are research findings that may suggest self-assessment of competence is connected to motivation to learn.

While the research about non-graded self-assessment as used in business texts and courses is sparse, there is research across many disciplines indicating that self-assessment, and particularly guided self-assessment may be useful for behavior change. McDonald and Boud (2003) have shown that self-assessment can have impact on students' perceptions of their careers and that self-assessment training had a significant impact on the performance of those who had been exposed to it. The use of self-assessment training as part of the curriculum provides a way of laying the foundation for the kinds of skills students will need as lifelong learners. Learning in work and life are not formulated as examinations but rather in identifying criteria for successful performance and developing a plan to achieve it. Consequently, there may be room to argue that self-assessment guided by competence models (and even action plans stating future intention) may be a useful pedagogical tool in business education.

Despite the considerable previous research regarding self-assessment, a number of gaps in our understanding of this construct and its usefulness in management competency development remain. There is no clear taxonomy separating different forms of self-assessment in the literature. As will be noted from the above, most existing literature is not related to business or health care administration and may not generalize to contemporary business students. Much of it is speculation. Similarly, the use of self-assessment tests and surveys or knowledge checks imbedded in textbooks is not common in other areas and has not been examined. Thus, much of the research done may not apply to current situations and contexts in business education. Research attempting to gain a firmer understanding of the how survey-based self-assessment of required and salient competencies affects the intention of students to learn is in order. The present research seeks to address these issues.

Contracts and Action Plans

Taras (2010) compares different models of self-assessment and argues that the strongest design is the use of learning contracts. Cowan (2006) suggests what is particularly interesting about learning contracts is a holistic context of learning and assessing; both are inextricably integrated where students are truly the decision makers. This model relies heavily on the belief in the autonomous learner. It is comparable to the Alverno model (Loaker and Jensen, 1988) where

self-assessment also permeates all levels of the curriculum, the learning process and assessment at institutional level (http://www.alverno.edu/). Andrade and Valtcheva (2009) argue the purpose of self-assessment is to identify areas of strength and weakness in one's work in order to make improvements and promote learning. They show that criteria-referenced self-assessment has been shown to promote achievement. Mok, et al. (2006) examined a method of self-assessment where, at the beginning of learning, students were asked what they knew, then in the middle, what they wanted to know, and at the end, what did they learn. This simple study indicated that students found the approach supportive of their learning and self-assessment. Students were more aware of their learning and thinking processes at the end of the study.

Finally, Fluckiger (2010) discusses the "single point rubric" which is a tool for each student to indicate the following: "a) I know where I'm going; b) I know where I am now; c)I know how to get there; and, d) I know how to go beyond (p.18)." While there is little research directly examining the validity of using some sort of action plan concerning a student's self-assessment, there is much anecdotal evidence suggesting such an approach would enhance learning and even teach students how to continually self- assess later in life.

Intent to Change

Peterson (2009) in a meta-analysis and Soric and Palekcic (2009) suggest that interest is needed for learning, especially self-directed learning. Prochaska, et al. (1992) have shown that the modification of addictive behaviors involves progression through five stages—pre-contemplation, contemplation, preparation, action, and maintenance—and individuals typically recycle through these stages several times before termination of the addiction. They suggest multiple studies provide strong support for these stages as well as for a common set of change processes used to progress through the stages. These researchers have determined that efficient self-change depends on doing the right things (processes) at the right time (stages). While this work concerns addiction rather than education, probably the most obvious and direct implication for this application are 1) contemplation causes preparation which causes action, and 2) there is a need to assess the stage of a one's readiness for change and to tailor interventions accordingly. Self-assessment of a student's current competence state may help do that. Prochaska, et al. argue two frequent mismatches occur. First, some individuals appear to rely primarily on change processes most indicated for the contemplation stage—consciousness raising, self-reevaluation—while they are moving into the action stage. They try to modify behaviors by becoming more aware, a common criticism of business education (Navarro, 2008): Insight alone does not necessarily bring about behavior change. Second, other individuals rely primarily on change processes most indicated for the action stage—reinforcement management, stimulus control, counter conditioning—without the requisite awareness, decision making, and readiness provided in the contemplation and preparation stages. They try to modify behavior without awareness, a common criticism of radical behaviorism: Overt action without insight is likely to lead to temporary change. The implication of this is that awareness is required for intent to change, and intent is required for action. It is a complicated model, but argues strongly that self-assessment without preparation is insufficient for change. We

would therefore argue that a clear and specific action plan would be a necessary step between self-assessment and actual learning and behavior change. We also argue that Prochaska's five-stage model—pre-contemplation, contemplation, preparation, action, and maintenance—would be a satisfactory method for assessing intent to change in competence training.

Self-Efficacy

Mann (2010) suggests that self-efficacy influences future performance in relation to the difficulty of tasks undertaken, how much effort is invested, and how long we persist in the face of challenges and obstacles. Therefore, positive self-efficacy perceptions may play an important function in maintaining optimism and confidence (Bandura, 1997). Social Cognitive Theory suggests that outcome expectations influence performance as well as choice (Bandura, 1997). Therefore, we would accept that individuals who expect positive benefits from a course or action plan of some type would be expected to be more motivated than those who do not expect positive benefits and to persist more in their attempts to learn. Social Cognitive Theory holds that expectations about the consequences of behavior are a strong force guiding individuals' actions (Compeau and Higgins, 1995). Therefore, it would be reasonable to believe that those students with higher self- efficacy may be more likely to draw benefit from self- assessment of competencies as a pre-learning activity. The co-variants which may be surrogates for self-efficacy such as number of management classes completed, years of experience as a manager, and whether self-assessment had been done in other classes will be tested in this study. It is not expected that other co-variants such as student work or educational experience and other prior learning will have any effect on the study variables (see Brinke, et. al., 2010)

Hypotheses

The purpose of this research is to investigate the effect of student self-assessment of competencies by survey on their intent to change their level of competence and on their perceptions of their actual behavior directed toward change of competence.

Hypothesis 1: Completing self-assessment inventories related to a salient competence model will create intention to change.

Hypothesis 2: Completing self-assessment inventories related to a salient competence model will develop perceptions of actual change.

Hypothesis 3: Completing self-assessment inventories and writing a detailed action plan (specifying what will be done, when, and how increases in competence level will be assessed) will affect intention to change and perceptions of actual change more than completing self-assessment inventories only.

Hypothesis 4: Self-efficacy will moderate the relationship between completing self-assessment inventories related to a salient competence model and intention to change and perceptions of actual change.

The overall goal of the project is to show that the self-assessment of competence done in business and healthcare administration classes using self-administered competency surveys and student-written action plans warrants continued use and should be a vehicle for future studies.

METHODS

Table 1 Demographic characteristics and reports of completing an action plan	
Demographic Characteristic:	**Percentage of Total (n=164)**
Gender	
Females	53%
Males	47
Total	100%
Graduate vs. undergraduate degree seeking	
Undergraduate	19%
Graduate	81
Total	100%
Taken previous classes in management	
No previous class	46%
One previous class	17
Two previous classes	14
Three or more previous classes	13
Unsure/Can't recall	10
Total	100%
Previous management experience	
No previous management experience	44%
One year or less	11
Two to three years	10
More than three years	35
	100%
Completed a competency self-assessment in another class	
Yes	32%
No	68
Total	100%
Completed an action plan	
Yes	47%
No	53
Total	100%

The 164 subjects in the study were volunteers from four undergraduate introductory management, two undergraduate healthcare administration, and two graduate healthcare

administration classes taught in a single semester at a southeastern Texas university. One fully online, two partially on-line and five face- to-face delivery courses were used in the study.

Table 1 above reports the demographic characteristics of the study subjects as well as the percentage who reportedly completed an action plan as part of the investigation.

Design

A separate sample post-test only, control group field experiment was conducted to test the hypotheses. Subjects were randomly assigned to condition across classes with relatively equal numbers in each class. All assessment instruments used except for completing the two surveys (the dependent variable) and completion of an action plan were currently being used in three of the classes used. All students completed self-assessments using four short surveys of competencies required to be learned in their programs (three were taken from the textbooks used in the introductory management courses; one was taken from a graduate healthcare course. Two groups were compared: a self-assessment only group and a self-assessment with action plan group. The dependent variables were the answers to questions on a survey administered mid semester and at the end of the course. Analysis of variance was used to analyze the data. No special incentives were given for participation in this study. All students eventually received all of the study material. A "no-assessment" group was not used because all students in these programs do self-assessments in conjunction with program competency models and all students using textbooks including survey-based self -assessment are assumed to do some or all of it. The interest here is not whether self-assessment affects students but rather how it affects the students and what conditions enhance this effect. The dependent variable assessed progression through five stages of subsequent behavior—pre-contemplation, contemplation, preparation, action, and maintenance -- as discussed above. (see Prochaska, et al., 1992).

Procedures

The first step for each condition was to verbally describe to students the procedures to be followed, inform the subjects that no identifiers would be collected, and that participation was voluntary. At the same time, an informed consent form was administered to each participating subject. All groups described in the preceding paragraph received the same readings and the same lecture on each of the topics - stress management, work-life balance, need for control and tolerance of ambiguity - as is typically done in introductory management classes. In general, a number of self-assessments are typically utilized in these courses. The four instruments chosen to be included in this study were chosen because the authors believed they would have 1) salience for the students, and 2) the most variance in scores among the students. All groups are given the competency model used in the programs and understand the importance of competence in business education and job hunting.

The differences between the experimental groups were the following: 1) the "self-assessment-only group" was asked to complete the self-assessments, received all written feedback materials about them, were asked to not discuss them with other students (there is typically no between-student discussion on these self-assessments as they are individual tasks and no class discussion of results is required or encouraged), were asked to write a short paragraph about their findings from the assessment with no guidance on structure or format, and finally, were asked to complete a survey instrument that measured the dependent variables of the study. 2) "The action plan group" was asked to do everything as subjects in the self-assessment group except complete the paragraph about their findings. Instead, they were asked to complete an action plan to detail their planned activities to deal with the results of the assessments. The action plan directions included a spreadsheet template detailing what was to be included. All subjects were eventually given the same feedback on the assessments – both in lecture and written - about the content of the instruments, and what the scores mean to the student.

The results of the self-assessment instruments were not collected. Only the two surveys and the action plans were collected. The action plans were assessed for completeness and to judge the relevance to future research. They were then returned to the students with feedback for improving them as would be expected in any class.

Instruments

The four self-assessment instruments included short self-administered surveys concerning work life balance, time management, stress management, and self-limiting behavior. The first two instruments and the feedback about them were taken from Schermerhorn (2010, pp. 221,111). The stress management survey and feedback can be found in Robbins (2009, pp. 94-95). The last instrument was developed by one of the authors (Decker, 1994) and measures four dimensions: the need for control, the avoidance of accountability, the need for predictability, and the use of pseudo-self-esteem – all behavioral tendencies thought to self-limit managerial excellence. This instrument and the feedback given can be obtained from the authors. All instruments are incorporated in the various competency models of the two programs involved (management and healthcare administration) and are required to be completed in one or more of the classes used in this study. They have been found, from the authors' experience, to be salient, and of interest to our students.

The Dependent Variables

The dependent variables were collected by written survey administered at two times in the semester several weeks after the self-assessment had taken place. A total of 149 students returned the first of these surveys while a total of 164 students returned the second. A series of five questions based on the work of Prochaska, et al. (1992) were asked to assess whether the subjects 1) expected to change, 2) had been thinking that they might want to do something about changing,

3) intended to make changes, 4) actually made some changes, or 5) just needed a "boost " to maintain improvements in each of the assessed areas: work life balance, time management, stress management, and self-limiting behavior. Finally, a series of five questions to assess self-efficacy also were asked of the subjects (see Mann, 2010, and McMillan and Hearn, 2008) as well as six demographic questions concerning management classes, degree and experience which have been reported above.

Data Analysis

As already noted above, the subjects involved in this research came from eight courses, taught by five instructors, across graduate and undergraduate programs. Further, they varied widely in personal demographics and experience. The first concern in analysis was to rule out the possibility of instructor effects, course effects, and length of management experience effects, undergraduate vs. graduate program effects, and effects that might result from the length of time in one's program. Statistical models appropriate to the level of measurement (nominal or ordinal) were employed, either lambda (nominal level variables) or gamma (for ordinal-level variables). We chose to emphasize the strengths of relationships among variables and chose not to report tests of statistical significance. In particular, we chose not to report the results of statistical significance tests for several reasons. First, we could not be certain that the observations we collected were, in fact, independent, an important assumption underlying significance tests. After all, students might have colluded in completing self-assessments and even in completing surveys. Second, as we are all aware, a large enough sample will always generate results at statistically significant levels, even when the results are only marginally different. Finally, ultimately it is the theoretical parameters -- as measured by the strengths of relationships among constructs -- that interest us here, not whether they depart from zero at a selected confidence level. On all of these points we find these statistical arguments in accord with those of Hoel (2003).

The tables below show the strengths of relationships between possibly confounding or interacting influences and each of the four self-assessment item scores. That is, as noted above, we examined instructor; course; prior management courses; prior management experience; graduate vs. undergraduate standing; years of graduate study; and manner of course delivery (face to face versus totally online) effects on each of the students' overall self-assessment scores.

Table 2: Instructor effects: Strength of relationship (lambda)* between a particular instructor and reported behavior.

Self-Assessment Item:	Mid-Semester Survey	End of Semester Survey
Work life balance	.10	.03
Stress Management	.00	.00
Time management	.09	.00
Self-limiting behavior	.07	.02

*Note: Lambda (sometimes referred to as "Goodman and Kruskal's lambda") is a measure of the strength of a relationship between two variables measured on a nominal level (or as categories). The value of lambda can

range between 0 and 1.0. When the value of lambda is 0, there is no relationship between the two variables. When lambda is 1.0, indicating maximum strength, one can perfectly predict the values of one variable from the other. Even though the self-assessment items could be treated as measured on an ordinal scale (as we do below), because name of instructor was measured as a category we chose to err on the conservative side and in this and the table immediately below chose the lambda statistic. (On these points see Andrews, et al., 1981, p. 10.)

Table 3: Course effects: Strength of relationship (lambda) between a particular course and reported behavior.

Self-Assessment Item:	Mid-Semester Survey	End of Semester Survey
Work life balance	.00	.02
Stress Management	.06	.00
Time management	.06	.02
Self-limiting behavior	.07	.03

Table 4: Prior management courses taken: Strength of association (Gamma)* between the number of prior management courses taken and reported behavior.

Self-Assessment Item:	Mid-Semester Survey	End of Semester Survey
Work life balance	.08	-.10
Stress Management	-.09	-.19
Time management	-.04	-.18
Self-limiting behavior	.00	-.21

*Note: Gamma (sometimes referred to as "Goodman and Kruskal's Gamma") is a measure of the strength of a relationship between two variables measured on an ordinal level or scale. The value of Gamma can range between -1.0 and +1.0 with a value of -1.0 indicating a perfectly negative or inverse relationship and a value of +1.0 indicating a perfectly positive or direct relationship. (Andrew, et al., p. 8.) In this and the tables following both the self-assessment items and the variable controlled in the table were measured as ordinal level variables.

Table 5: Management experience: Strength of association (Gamma) between number of years of management experience and reported behavior.

Self-Assessment Item:	Mid-Semester Survey	End of Semester Survey
Work life balance	-.01	.10
Stress Management	.02	.05
Time management	-.07	-.11
Self-limiting behavior	-.17	.11

Table 6: Effects of undergraduate versus graduate standing: Strength of relationship (Gamma) between being an undergraduate student or graduate student and reported behavior*

Self-Assessment Item:	Mid-Semester Survey	End of Semester Survey
Work life balance	.14	.17
Stress Management	.16	.12
Time management	.16	-.12
Self-limiting behavior	.09	.04

*Note: Encoding of graduate versus undergraduate standing was that undergraduate standing was the higher value. This means that in general being a graduate student did not (with the exception of time management) increase behavior change.

Table 7: Effects of year in one's undergraduate program. Strength of relationship (Gamma) between year as an undergraduate and reported behavior.		
Self-Assessment Item:	**Mid-Semester**	**End of Semester**
Work life balance	-.18	-.04
Stress Management	.00	-.07
Time management	-.09	-.10
Self-limiting behavior	.14	-.04

Table 8: Effects of years in one's graduate program. Strength of relationship (Gamma) between years of graduate study and reported behavior.		
Self-Assessment Item:	**Mid-Semester**	**End of Semester**
Work life balance	.13	-.03
Stress Management	.21	-.12
Time management	-.04	-.04
Self-limiting behavior	.14	-.11

Table 9. Manner of course delivery effects (Face-to-Face versus Totally Online). Strength of relationship (lambda) between manner of course delivery and reported behavior.		
Self-Assessment Item:	**Mid-Semester**	**End of Semester**
Work life balance	.00	.03
Stress Management	.00	.00
Time management	.03	.00
Self-limiting behavior	.00	.00

As is apparent, the relationships in the above tables are all either weak or negative. Further, they sometimes lack consistency between mid-semester and end of semester surveys. (An example of the latter is in Table 8; note that stress management and one's year in a graduate program have a strength of association of .21 at mid-semester and a -.12 by the end of the semester.)

Thus the conclusion to be drawn is that the relationships observed below (especially in Tables 10-13) are <u>not</u> spurious artifacts of, and thereby are not attributable to the effects of the variables examined above. In other words, the evidence is consistent with the conclusion that assigning self-assessment instruments to students in class leads to changes in behavior.

The major question of the study was whether an instructor's assigning students to complete a set of self-assessment exercises leads to students modifying their behavior – intent to change and perceived actual change. Tables 10-13 show the frequency of answers to the dependent variable questions by assessment instrument and by time of the survey

Survey Question 1: During this semester's class, you completed a self-assessment about your work-life balance and about managing that balance. Please look over the categories below and check the ONE CATEGORY (ONLY!) that is <u>closest</u> to how you presently assess yourself:

Table 10: Responses to survey question about work-life balance		
Response category	**Mid-semester survey**	**End-semester survey**
In the next few months, I do not expect to change the way I presently balance my work and personal life.	11%	5%
I have been thinking that I might want to do something about changing the way I balance my work and personal life.	34	18
Even though I have not actually done so in the past, in the next month or so I intend to make changes in my work-life balance.	28	29
I have made some changes that have improved the balance between my work and personal life.	28	36
Sometimes I need a reminder or a "boost "to maintain the improvements I have already made in my work-life balance.	Not asked on this survey	12
Totals	100% * (n=149)	100%* (n=164)

Notes: Here and below, some columns may not sum to 100% because of rounding.

Question 2: Besides balance, you also completed a self-assessment and read about stress and about managing stress. Please examine the categories below and place yourself in the ONE CATEGORY (ONLY ONE, PLEASE) comes closest to how you presently assess yourself:

Table 11: Responses to survey question about stress and stress management		
Response category	**Mid-semester survey**	**End-semester survey**
In the next few months, I do not expect to change the way I presently manage stress in my life.	16%	7%
I have been thinking that I might want to do something about changing the things that cause stress in my life.	24	18
Even though I have not actually done so in the past, in the next month or so I intend to make changes in things that cause stress in my life.	24	20
I have made some changes that have improved the things that cause stress in my life.	36	44
Sometimes I need a reminder or a "boost" to maintain the improvements in things that presently cause stress in my life.	Not asked on this survey	11
Totals	100% (n=149)	100% (n=164)

Question 3: Another topic you read about and about which you completed a self-assessment was that of time management. Please examine the categories below and place yourself in the ONE CATEGORY (ONLY ONE, PLEASE) comes closest to how you presently assess yourself:

Table 12: Responses to survey question about time management.		
Response category	**Mid-semester survey**	**End-semester survey**
In the next few months, I do not expect to change the way I presently manage my time.	9%	7%
I have been thinking that I might want to do something about changing the way I manage my time.	26	18
Even though I have not actually done so in the past, in the next month or so I intend to make changes in how I manage my time.	31	22
I have made some changes that have improved the how I manage my time.	34	46
Sometimes I need a reminder or a "boost "to maintain the improvements I have already made in my time management.	Not asked on this survey	7
Totals	100% (n=149)	100% (n=164)

Question 4: The last topic you read about and about which you completed a self-assessment was that of self-limiting behavior. Please examine the categories below and place yourself in the ONE CATEGORY (ONLY ONE, PLEASE) comes closest to how you presently assess yourself:

Table 13: Responses to survey question about self-limiting behavior.		
Response category	**Mid-semester survey**	**End-semester survey**
In the next few months, I do not expect to change the way I presently balance my work and personal life.	12%	7%
I have been thinking that I might want to do something about changing the way I balance my work and personal life.	30	21
Even though I have not actually done so in the past, in the next month or so I intend to make changes in my work-life balance.	28	20
I have made some changes that have improved the balance between my work and personal life.	30	39
Sometimes I need a reminder or a "boost "to maintain the improvements I have already made in my work-life balance.	Not asked on this survey	13
Totals	100% (n=149)	100% (n=164)

These data are certainly consistent with the expectation that assigning self-assessment instruments to students in class leads to perceived changes in behavior.

One of the interesting things about these data is that the effect of assigning self-assessment instruments is rather uniform across all four sets of self-appraisal items. This further enhances confidence that these results are not spurious. Note also that the effect of assigning self-assessment instruments increases over time during the semester.

Thus, *Hypothesis 1- "*Completing self-assessment inventories related to a salient competence model will create intention to change," and *Hypothesis 2- "*Completing self-assessment inventories related to a salient competence model will develop perceptions of actual change" are both supported by the evidence.

The second major question in this study was whether the apparent effects observed in the preceding section were enhanced by the requirement of students' devising an action plan to work on each of the matters as opposed to only completing the self-appraisal instruments? These data are presented in Table 14.

Table 14: Relationship (Gamma) between having an action plan and reported behavior (Question 4 – "I have made some changes that have improved the . . .").

Self-Assessment Item:	Mid-Semester	End of Semester
Work life balance	.460	.594
Stress	.320	.597
Time management	.418	.590
Self-limiting behavior	.484	.412

As is evident from the above table, requiring students to have an action plan as opposed to merely completing the instruments is associated with more behavior change. Thus, *Hypothesis 3- "*Completing self-assessment inventories and writing a detailed action plan (specifying what will be done, when, and how increases in competence level will be assessed) will affect intention to change and perceptions of actual change more than completing self-assessment inventories only" is supported. Furthermore, these data further support the conclusion that utilizing self- assessment instruments in class leads to changes in behavior. This latter point is so because the data show that the effect of utilizing self-assessments can be enhanced by having students go beyond merely self-assessing and developing a plan to do something about the results of their self-appraisal. We call this an "enhancing assignment effect."

Finally, the third major question was whether personal efficacy and motivation to complete the self-assessment might enhance any impact of utilizing the self-assessment measures. The first step in answering this question was a factor analysis to establish that the four items are measuring the same construct, self-efficacy. The results of the self-efficacy questions were factor analyzed utilizing a principal components resolution method with squared multiple correlations in the main

diagonal of the factor matrix and orthogonal rotation to final solution. Further, only those component matrices with an eigenvalue greater than unity were computed.

The results are shown below in Tables 15-16.

Table 15: Factor Analysis Results of Mid-semester Survey[a] (Component Matrix)		
Item #	**Item**	**Component 1**
a	I have control over most things	.555
b	I can do well in personal life	.680
c	I can do well as a management professional	.711
d	I do things I never dread of	.475
	Eigenvalue (Extract Factor >1) Total Percent of the Explain Variance	1.501 38%

[a] Method of Extraction: Principal Component Analysis

Table 16: Factor Analysis Results of End-of-Year Survey[a] (Component Matrix)		
Item #	**Item**	**Component 1**
a	I have control over most things	.609
b	I can do well in personal life	.676
c	I can do well as a management professional	.582
d	I do things I never dread of	.543
	Eigenvalue (Extract Factor >1) Total Percent of the Explain Variance	1.463 37%

[a] Method of Extraction: Principal Component Analysis

As is evident, for both the mid-term and the end of semester surveys results, only one factor was found for each. This indicates the uni-dimensionality of the set of self-efficacy items. *In short, the four items were found to be measuring the same thing on both surveys.*

The second step in the analysis was to create scales based on weighting individual survey items based on their factor score coefficients and then to examine the relationships between self-efficacy and each of the four self-assessment items – work life balance, etc. We chose to treat self-efficacy and each of the self-assessment items as having been measured on an ordinal scale and again utilized Gamma as the statistical model.

Table 17: Strength of relationship (Gamma) between self-efficacy and change behavior.		
Self-Assessment Item:	**Mid-Semester**	**End of Semester**
Work life balance	-.02	.08
Stress	-.04	-.03
Time management	-.02	-.13
Self-limiting behavior	-.04	.00

Arguably, this is a more conservative approach since we can only make claims for monotonicity and not linearity in the findings. The results of this step are shown above in Table 17.

These data in Table 16 indicate that self-efficacy was not strongly related to behavior change with regard to any of the four sets of self-appraisal items. Thus, *Hypothesis 4*-"Self-efficacy will moderate the relationship between completing self-assessment inventories related to a salient competence model and intention to change and perceptions of actual change" was not supported.

CONCLUSIONS

Because educational accrediting agencies have changed the assessment focus from inputs to outputs, there has been a greater focus on competency assessment in business schools. Schools of business have also been challenged to improve relevancy and provide more behavioral skill training. Yet, there is little research showing this accreditation-driven assessment has any effect on student learning and behavior change. Self-assessment of competencies, as studied here, refers to the learner's evaluation and appraisal of their own competence and performance and is designed to motivate the learner to perform at a deeper level in class. The purpose of this research was to study the effect of student self-assessment of competencies using surveys in a pre-learning situation on intent to change level of competence and on perceptions of actual behavior directed toward change. Three of the four hypotheses were supported. This study showed that such self-assessment of competencies changes attitudes and behavior toward learning. It was also found that action plan writing enhanced it further. While it was hypothesized that personal traits and experience may affect the study variables, self-efficacy and other co-variants such as gender and experience had little effect on the relationship. The effect was powerful enough to overcome differences in educational and managerial experience as well as instructor, gender and degree level differences. It is clear from this research that self-assessment of competencies does motivate students towards action to improve competence.

This study points to the importance of understanding the survey-based assessment tools that are increasingly being used in management and other textbooks. These assessments can have a positive effect on student learning, intent to learn, or possibly increased behavioral or affective competence if used - particularly if used with a detailed action plan. This research suggests that professors should incorporate these self-assessments of competencies in the formal curriculum to help guide learning and practice in the course. This may also enhance the use of school or program competency models across the curriculum.

Implications for future research include the need to determine if these effects go beyond perception to actual increase of competence. More research should be done to examine what students do to increase known competency weaknesses and if those weaknesses are corrected.

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DO STUDENTS LEARNING STYLES IMPACT STUDENT OUTCOMES IN MARKETING CLASSES?

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ABSTRACT

The objectives of this study are to investigate the impact of course design on student outcomes and to determine if student learning styles moderate or modify that impact. Data were gathered from 563 students at a major university. Student respondents were enrolled in a business course with one of three different course designs: experiential, participative, and traditional. Results indicate course design influences student's outcomes in the courses. In addition, student learning styles moderate this influence and have the greatest impact on student outcomes in the experiential course designs, but also have an impact in both participative and traditional designs.

INTRODUCTION

Many changes have been introduced into marketing education recently. The view that marketing education needs to be revised and revamped has become more noticeable since the turn of the century and even accrediting agencies are beginning to alter their guidelines for designing these classes. AACSB guidelines suggest marketing students need a better understanding in many areas, including ethics, international marketing, communication skills, professionalism, etc. Marketing departments and business schools have responded positively. For example, one study reported a recent fivefold increase in the number of ethics courses being offered in business schools (Christensen et al. 2007). In addition, much marketing curriculum has been designed to equip students with strong communication skills, flexibility, decisiveness, professional skills, and professionalism by providing more active learning elements in the marketing classroom (Glaser-Segura et al. 2010; Peltier, Scovotti, and Pointer 2008).

Large corporations themselves recognize the need for more effective methods of training and education and have begun to adopt newer, active learning designs (e.g., Fritz, Kaestner, and Bergmann 2010). Some industries even recognize that hands-on, or experiential, education inspires students to become innovators (Almgren 2010). It is essential, then, that business schools in general, and marketing programs specifically, heed these concerns and continue to utilize the most effective educational methods possible to provide students with necessary knowledge and skills. Continuing to explore and identify characteristics or styles of education that can have the greatest and most permanent impact on students is therefore becoming an increasingly crucial issue.

This important mission of marketing professors, however, is complicated by the changing student, and made even more complex because many colleges and universities are seeing an

increase in non-traditional older students. Trying to create a classroom experience that will maximize learning for all types of students is almost dauntingly difficult. Differences in these varied populations of students may best be reflected by their learning styles.

Learning style refers to the inclination each one of us has to perceive, interpret, and respond to information in a certain way (Whetten and Cameron 2002). To be successful, everyone must be constantly learning. If people stop learning, they quickly become outdated and out of touch in their professions. Lifelong learning is a key requirement, therefore, to successful lives and careers. Marketing professors are responsible to get our marketing students on the path of this lifelong learning of marketing so they will be able to maintain their preparedness throughout their lives. It is necessary that we take into account the different learning styles and attempt to create favorable learning environments for students of all learning styles.

This paper reports results from a study that considered student data from three different types of course designs – traditional, experiential, and participative. The study examines the moderating effects of learning styles on the student outcomes in these three course designs.

LITERATURE REVIEW

Course Designs

A review of the existing course design literature indicates that a clear distinction exists between active and passive types of designs. Active course design, in all its forms, incorporates increased student involvement in the classroom, whereas passive designs are more instructor-centered. Active course designs are based on the assumption that an active learner, or one who is more engaged in the learning process, learns much more effectively and the learning experience is more intense and permanent than it is for passive learners enrolled in a traditional lecture-style course (e.g., Allegretti and Fredrick 1995; Derrick and Carr 2003; Hargrove 2003; Klein, Schnackenberg, and Smith 1997; Kolb 1983; Labinowicz 1980; Orsmond and Stiles 2002; Sharan 1980). Recent research has specifically examined business students in colleges and universities and shows that course design can significantly impact student performance (Black 2010; Black and Wingfield 2008; Filbeck and Smith 2001; Keltgen 2006; Laditka and Houck 2006; Sims 2002; Smith 2005; Tucker, Stewart, and Schmidt 2003; Wingfield and Black 2005).

A preponderance of recent business education literature suggests business schools' curriculum is experiencing a shift from passive course designs to active course designs (e.g., Frontczak 1998). Empirical evidence suggests business students prefer designs that are active over more passive designs (Nulty and Bennett 1996). Evidence also suggests that favorable attitudes toward course design leads to higher achievement (Young, Klemz, and Murphy 2003) and that matching course design with learning styles results in greater learning (Dunn et al. 1990).

Experiential learning is a type of active course design. It can be defined as *"the process whereby knowledge is created through the transformation of experience" (Kolb 1983, p. 38). Kolb indicates the crucial first step is to provide the experience from which the learning comes.* Experiential educators are generally aware that experiences alone are not inherently effective for

learning. The experiences have to be relevant to the learning goals and then the learners must have time and opportunity to reflect on the experience. Kolb's definition is based on six assumptions: "Learning (a) is a process, not an outcome; (b) derives from experience; (c) requires an individual to resolve dialectically opposed demands; (d) is holistic and integrative; (e) requires interplay between a person and the environment; and (f) results in knowledge creation"(from Kayes 2002, pp. 139-140). These assumptions intimate that learners will be required to respond "to diverse personal and environmental demands that arise from the interaction between experience, concept, reflection, and action in a cyclical … fashion" (Kayes 2002, p.140).

Keeping these assumptions in mind, experiential learning can encompass a wide array of methodologies spanning from outdoor, adventure-based learning such as Outward Bound, to other forms that are more conducive to a classroom setting. Case studies are commonly used in many business classes. In addition, giving students self-learning instruments also provides experiential learning opportunities. Many universities offer business credit for internships which are also effective experiential learning experiences. Also, many in-class activities are experiential in nature. In addition, assignments can be experiential if they require students to apply concepts learned in the classroom to things they will be expected to do in the "real world" after they graduate. For example, professors may require students to write a marketing plan, create an actual advertisement or develop a performance appraisal system or a compensation plan. Experiential methods rely heavily on discussion and practice, emphasizing personal application of material and encouraging students to develop belief systems, understand how they feel about an area of study, and take appropriate actions given a specific environment (Jones and Jones 1998).

Participative learning is also a form of active learning. It can be defined as engaging the learner in the learning process (Mills-Jones 1999). Many may be confused by a similar term known as cooperative learning. Cooperative learning is a mode of learning that requires students to work together in groups and participate in class discussions. Participative learning, on the other hand, gives students the opportunity to take an active part in determining the types of activities and/or assignments they perceive will best help their learning. Methods that can be utilized in the classroom to assure participative learning include the following: student participation in the syllabus design, students writing potential exam questions, student participation in determining the grading scheme for a course, student participation in class and small-group discussions, etc. By involving students in these decisions, participative learning theory suggests the students will feel more accountability for completing assignments, etc. (Mills-Jones 1999).

Traditional lecture classes create an environment for passive learning. This course design emphasizes learning of conceptual knowledge by focusing on facts and theoretical principles (Jones and Jones 1998; Thornton and Cleveland 1990; Whetten and Clark 1996). The conceptual emphasis of this design can be important to the development of a strong theoretical foundation upon which students can build in future courses. This design typically involves few opportunities for students to learn experientially or to participate in the decisions in the classroom. Professors or instructors basically provide a syllabus and class schedule, they deliver daily lectures, and the majority of grades are based on exams, especially exams made of multiple-choice, true-false and matching items.

It has been suggested that students learn more effectively when they are able to experience learning through active participation in the learning process (Allen and Young 1997).
Active learning is also linked to critical thinking (Paul 1990), experiential learning (Kolb 1983), and reflective judgment (King and Kitchener 1994; Kitchener and King 1981). Research also suggests experiential learning leads to higher levels of retention for student learning (e.g., Van Eynde and Spencer 1988); however, while others have suggested there are no significant differences exhibited by students on measures of comprehension or satisfaction when different course designs are utilized (Miner, Das, and Gale 1984).

Learning Styles

It seems clear that active course designs are generally more effective for imparting knowledge to students. However, it is possible that students with certain learning styles actually learn better in a more traditional, passive classroom. Therefore, in designing the most effective classroom, it is important to consider student learning styles also.

Learning style refers to the inclination each one of us has to perceive, interpret, and respond to information in a certain way (Whetten and Cameron 2002). When individuals encounter information, they are more inclined to concentrate on and learn from certain kinds of inputs than others (Kolb 1983). Kolb's (1983) work identifies and measures four distinct learning styles.

Some people are more inclined to take in information through direct experience. They learn by tangible, concrete, and sensual encounters. The perceptible, felt qualities of information are easier to capture, so these individuals tend to immerse themselves in situations in order to learn from them. They learn best through experience and involvement. People with these tendencies are likely to interact with other people to get their information. This learning style is known as *concrete experience*. This learning style represent a receptive, experience-based approach to learning that relies heavily on feeling based judgments. People with this learning style tend to be empathetic and people-oriented. They generally find theoretical approaches to be unhelpful and prefer to treat each situation as a unique case. They learn from specific examples in which they can become involved. They tend to be oriented more towards peers and less towards authority in their approach to learning, and benefit most from feedback and discussion with people with the same learning style (Kolb 1983).

Other people tend to best take in information that is abstract, symbolic, or theoretical. They learn most effectively when they encounter ideas and theories and then have a chance to think about them logically and analytically. They are more likely to learn from information that they can rationally examine or intellectually explore. People with this learning style are likely to get their information from books, rather than from interacting with others. This learning style is known as *abstract conceptualization.* This learning style indicates an analytical, conceptual approach to learning relying heavily on logical thinking and rational evaluations. People with this learning style tend to be oriented more towards things and symbols and less towards other people. They learn in authority-driven, impersonal learning situations that emphasize theory and systematic designs. In addition, they frustrated by and benefit little from unstructured discovery learning approaches, like exercises and simulations (Kolb 1983).

After encountering information, other people are inclined to examine it from different

perspectives, to ruminate about it, and to explore the various meanings that might be present. They are inclined to observe and scrutinize information. Quick judgments are avoided by these learners, and pondering and reflecting about the information is typical. This learning style is known as *reflective observation*. This learning style indicates a tentative, impartial and reflective approach to learning. People with this learning style rely heavily on careful observation in making judgments and prefer learning situations, such as lectures, that allow them to take the role of impartial objective observers. They also tend to be introverts (Kolb 1983).

Conversely, still other learners are inclined to act immediately on the information they receive. They respond by being proactive, by testing out the new information, or by applying it to an immediate problem or situation. They experiment to investigate the implications and utility of the information. By actively applying it, they can form alternative hypotheses about it. Kolb (1983) describes this learning style as *active experimentation*. This learning style indicates an active doing orientation to learning that relies heavily on experimentation. People with this learning style learn when they can engage in such things as projects, homework, or small-group discussions. They dislike passive learning situations, such as lectures. They also tend to be extroverts (Kolb 1983).

In a recent meta-analysis, Loo (2002) found that marketing students tended to have the learning styles of concrete experience and reflective observation. On the other hand, students majoring in accounting, a more quantitative business discipline, tended to have a combination of active experimentation and abstract conceptualization learning styles. These results suggest the possible importance of learning styles to selections of majors and ultimately, selection of professions.

In addition to students with certain learning styles selecting majors, there is evidence that student learning styles impact their selection of other more specific course alternatives. Morrison, Sweeney, and Heffernan (2003) identified learning style differences between students in on-campus classes and students in off-campus classes. Further, the selection of class size may also be related to learning styles (Karakaya, Ainscough, and Chopoorian 2001).

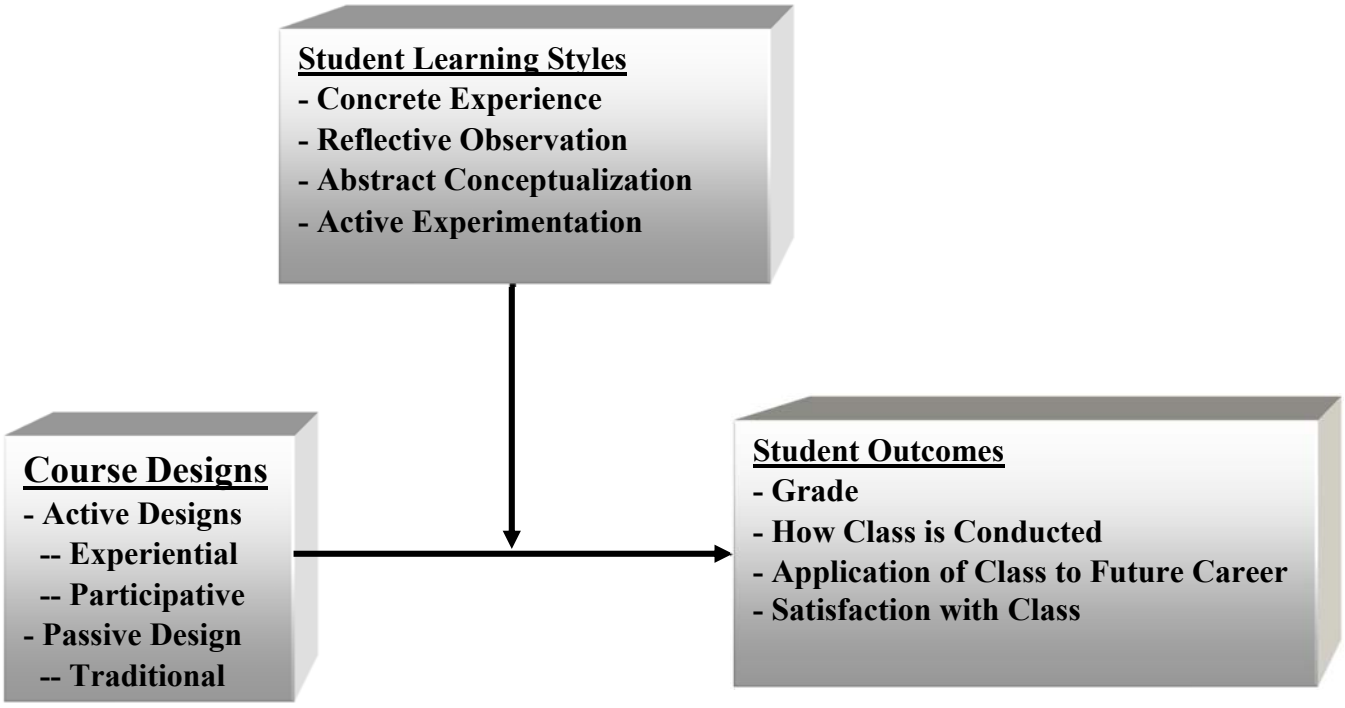
Cultural differences have also been examined in relationship to learning styles. One study found differences in learning styles between Australian and Chinese business students (Heffernan et al. 2010). Another study examined differences in learning styles between U.S., Indian and Korean business students (Jaju, Kwak, and Zinkhan 2002). Thus, culture and perhaps the secondary education system in these countries have an impact on how a person develops his or her learning style.

Subsequently, some scholars have recommended tailoring courses to best fit the student population's learning styles, as much as possible (e.g., Court and Molesworth 2003; Morrison, Sweeney, and Heffernan 2003; Morrison, Sweeney, and Hoffman 2006). Other scholars advocate that such an approach has the possibility of excluding effective learning for those students in a class with a learning style other than the prevailing one. These scholars suggest classes be designed with a wide range of learning experiences and course designs to appeal to a wider range of learning styles (e.g., Karns 2006).

The effect of student learning styles on student performance seems to be what the marketing education profession should be focused on. Research has indicated a significant impact of learning styles on student performance (Tom and Calvert 1984).

HYPOTHESES

Figure 1: Model of the Moderating Effect of Learning Styles



Based on the literature review, a model of the moderating impact of learning styles on the effects of course design on student outcomes is examined. The model is presented in Figure 1. Specific hypotheses for these relationships could be formed. However, this is the first research to examine these specific relationships, so a general set of hypotheses assessing the various relationships suggested by the model are offered. Therefore, it is hypothesized that student learning styles will impact the effects of course designs on student outcomes.

METHODOLOGY

To test the hypotheses, investigators prepared and delivered courses for the three types of designs—experiential, participative, and traditional. Elements were infused into each course design to assure that students could differentiate between the designs and to insure that each design provided the appropriate type of learning experience. The *traditional lecture* courses were

designed to present knowledge to the students through lectures given by the instructor. Evaluation of how students performed in these classes was based on reading the textbook, taking notes during lectures and performing well on exams, quizzes, and assignments, which were based solely on the textbook and the lectures.

The *experiential* courses gave practical experience that could be used by the student in an occupation related to the course. In these courses, students completed exercises and assignments that helped them understand how to apply the knowledge they gained during the semester. Also, they studied the actions of different companies through case studies and were tasked to apply their responses to similar situations. They also completed exercises and assignments that gave them insights about them and "hands on" experiences.

The *participative* courses allowed students to have a great deal of control over how they would be evaluated by including them in the decisions on how these classes would be conducted. Students participated in syllabus design and decisions concerning grading options, basically, deciding how performance would be evaluated in the course. In addition, about two-thirds through the semester, the instructors came up with several different grading options from which each student could choose to help them focus on the last part of the semester and to reinforce their participation. Finally, instructors utilized group work, presentations and in-class discussions providing opportunities for students to impart information to each other.

Toward the end of the semester, a survey designed to measure the variables described in the hypotheses was administered in each of the targeted classes. Using the information from the various marketing and management courses, each of which used a different design, 563 useable questionnaires were collected. Some characteristics of our sample are as follows. There were 203 students enrolled in classes with the traditional lecture design, 151 students in classes with the experiential design, and 209 students in classes with the participative design. Of the total, 339 were females and 224 were males. Also, 58.6% (n=330) of the students were Caucasian, 34.8% (n=196) were Hispanic, 2.5% (n=14) were African Americans, 2.3% (n=13) were Asian American or Asian, .4% (n=2) were Native American, leaving 1.2% (n=7) from other ethnic backgrounds. The average age of the student respondents was 24.41 years. Of the different majors in the classes, 38.5% (n=217) were marketing majors, 21.7% (n=122) were management majors, 7.8% (n=44) were accounting majors, 4.1% (n=23) were finance majors, 3.9% (n=22) were MIS majors, and 23.4% (n=) were general business majors. Nearly all students were juniors (n=168, 29.8%) or seniors (n=376, 66.8%), but 6 students (1.1%) were sophomores, and 13 students (2.3%) were graduate students. The majority of the students were employed at least part-time (n=415, 73.7%) and most had several years of work experience (mean=6.62 years). The majority of the student respondents were average-to-good students with an average GPA of 3.10 and an average grade for the manipulated classes of 2.94. Finally, 58 students (10.3%) were primarily *concrete experience* (CE) learners, 119 students (21.1%) were *reflective observation* (RO) learners, 104 students (18.5%) were *abstract conceptualization* (AC) learners, and 268 (47.6%) were *active experimentation* (AE) learners.

The questionnaire included a manipulation check to ensure that students actually perceived the various course designs to have key associated characteristics. Results of the manipulation check indicated that students perceived differences in the three course designs based on specific characteristics of each. The questionnaire also included multiple-item measures for each of the three self-reported outcomes. The other outcome was the actual grade the student received in the course, converted to its number equivalent.

RESULTS

Reliabilities were checked for each of the three multiple-item measures using Cronbach's alpha (Cronbach 1951). The hypothesized relationships were then statistically analyzed using both regression (OLS) and t-tests. Results of the reliability analyses are as follows. Four items were designed to measure student perceptions of how the class was conducted and this unidimensional measure was reliable (Cronbach's α = .91). Six items were designed to measure student perceptions of the usefulness of the class to their future careers and this unidimensional measure was also reliable (Cronbach's α = .92). Finally, nine items were designed to measure student satisfaction with the class and this unidimensional measure was found to be reliable (Cronbach's α = .95). These measure reliabilities exceed the minimum suggested level of Cronbach's α = .70 (Nunnally 1978).

Results of hypotheses testing are found in Tables 1 and 2. First, Table 1 reports results of assessing the direct effects of course designs on student outcomes. Regression analysis indicates some support that there are significant differences between active (experiential and participative) and passive course designs. Courses with active designs resulted in better student grades than did courses with passive (traditional) designs ($t = 2.414$, $p < .05$). In addition, active designs resulted in more positive student perceptions on how the course was conducted than did passive designs ($p = 1.719$, $p \leq .10$). However, there were no significant differences between active and passive designs in satisfaction with the course and student perceptions of how useful the course would be in their futures.

Table 1: Results of Hypothesis Testing

	Student Outcomes			
Course Designs	Grades	Satisfaction	Course Usefulness	Course Conduct
Active Designs vs. Passive Designs	2.414**	0.233	0.514	1.719*
Experiential Design vs. Lecture Design	1.755*	0.268	0.806	0.218
Participative Design vs. Lecture Design	3.076***	1.105	0.107	2.177**
Experiential Design vs. Participative Design	4.466***	0.740	0.868	2.141**

*** Significant at $p \leq .01$

** Significant at $p \leq .05$

* Significant at $p \leq .10$

Regression analyses also partially indicated differences between experiential and passive course designs. Courses with experiential designs resulted in better student grades than did courses with passive designs ($t = 1.755$, $p \leq .10$). However, there were no significant differences between experiential and passive designs in satisfaction with the course, student perceptions of how useful the course would be in their futures, and student perceptions on how the course was conducted.

Table 2: Results of Hypothesis Testing

Course Design	Learning Styles	Student Outcomes			
		Grades	Satisfaction	Course Usefulness	Course Conduct
Traditional	Concrete Experience vs. Reflective Observation	0.105	0.211	0.550	1.104
	Concrete Experience vs. Abstract Conceptualization	0.609	0.008	0.619	1.183
	Concrete Experience vs. Active Experimentation	1.109	2.017*	2.283**	1.210
	Reflective Observation vs. Abstract Conceptualization	0.629	0.217	0.062	0.064
	Reflective Observation vs. Active Experimentation	1.379	0.653	0.950	0.015
	Abstract Conceptualization vs. Active Experimentation	0.673	0.933	0.888	0.086
Experiential	Concrete Experience vs. Reflective Observation	0.104	2.850***	2.220**	2.162**
	Concrete Experience vs. Abstract Conceptualization	0.854	1.623	1.700*	1.778*
	Concrete Experience vs. Active Experimentation	1.059	0.818	0.024	0.088
	Reflective Observation vs. Abstract Conceptualization	0.896	1.109	0.501	0.317
	Reflective Observation vs. Active Experimentation	1.149	2.164**	2.675***	2.200**
	Abstract Conceptualization vs. Active Experimentation	0.037	0.926	2.015**	1.804*
Participative	Concrete Experience vs. Reflective Observation	1.119	2.573***	2.419***	0.938
	Concrete Experience vs. Abstract Conceptualization	1.413	0.040	0.058	0.470
	Concrete Experience vs. Active Experimentation	0.350	0.501	0.438	0.758
	Reflective Observation vs. Abstract Conceptualization	0.477	1.379	1.098	0.508
	Reflective Observation vs. Active Experimentation	1.102	2.049**	1.801*	1.982**
	Abstract Conceptualization vs. Active Experimentation	1.623	0.794	0.601	1.446

***Significant at $p \leq .01$ **Significant at $p \leq .05$ *Significant at $p \leq .10$

Further, regression analyses suggest some differences between participative and passive course designs. Courses with participative designs resulted in better student grades than did courses with passive designs ($t = 3.076$, $p \leq .01$). In addition, participative designs resulted in more positive student perceptions on how the course was conducted than did passive designs ($p = 2.177$, $p \leq .05$). However, there were no significant differences between participative and passive designs in satisfaction with the course and student perceptions of how useful the course would be in their futures.

Finally, regression analyses found some differences between the two active designs, experiential and participative. The participative design resulted in both higher grades in the course ($t = 4.466$, $p \leq .01$) and a more positive student perception of how the course was conducted ($t = 2.141$, $p \leq .05$) than did the experiential design.

Table 2 reports the results of hypotheses testing when student learning styles are added. For the traditional course design, the only significant differences were shown to be between the *concrete experience* (CE) and *active experimentation* (AE) learning styles. Students with an AE learning style were more satisfied with the course ($t = 2.017$, $p \leq .10$) and were more positive about how useful they thought the course would be in the future ($t = 2.283$, $p \leq .05$).

For the experiential course design, more differences between learning styles became apparent. First, differences between *concrete experience* (CE) and *reflective observation* (RO) learning styles indicate that students with the CE style are more satisfied with the class than those with the RO style ($t = 2.850$, $p \leq .01$); CE students are also more positive about the application of the class in their futures ($t = 2.220$, $p \leq .05$) and are more positive toward how the class was conducted ($t = 2.162$, $p \leq .05$) than are the RO students. In addition, CE students are more positive about the application of the class in their futures ($t = 1.700$, $p \leq .10$) and are more positive toward how the class was conducted ($t = 1.778$, $p \leq .10$) than are the students with an *abstract conceptualization* (AC) learning style. Further, students with a *reflective observation* (RO) learning style are less satisfied with the class than are students with an *active experimentation* (AE) learning style; RO students are also less positive about the application of the class in their futures ($t = 2.675$, $p \leq .01$) and are less positive toward how the class was conducted ($t = 2.200$, $p \leq .01$) than are AE students. Finally, students with an *abstract conceptualization* (AC) learning style are both less positive about the application of the course to their futures ($t = 2.015$, $p \leq .05$) and less positive about how the class was conducted ($t = 1.804$, $p \leq .10$) than are AE students.

The results in Table 2 also indicate differences in the participative classes. CE students were both more satisfied with their course ($t = 2.573$, $p \leq .01$) and were more positive about its application to their future ($t = 2.419$, $p \leq .01$) than were RO students. Also, RO students were not only less satisfied with their course than were AE students ($t = 2.049$, $p \leq .05$), they were also less positive about the application of the course to their futures ($t = 1.801$, $p \leq .10$) and were less positive about how the course was conducted ($t = 1.982$, $p \leq .05$).

DISCUSSION AND CONCLUSIONS

The results of this study, while indicating that active course designs are clearly more effective on student outcomes than are traditional designs, also suggest that these results are modified by student learning styles. Learning styles do not play much of a role in the effects of course design on student outcomes for the traditional designs. The only results occur when comparing students with a *concrete experience* (CE) learning style with students with an *active experimentation* (AE) learning style, with more positive results for students with the *active experimentation* style. Since AE students tend to learn best when engaged in such things as projects and homework, while CE students find theoretical approaches to be unhelpful, these differences make sense. Traditional classes offer some features that would be consistent with AE learners, but favorable features are not as plentiful for CE learners.

Learning styles made the most difference in the experiential learning styles. CE learners had more favorable outcomes than both *reflective observation* (RO) learners and *abstract conceptualization* (AC) learners. Since RO learners prefer learning situations, such as lectures, this result is no surprise. AC learners learn best in authority-directed, impersonal learning situations that emphasize theory and systematic analysis and are frustrated by and benefit little from most unstructured experiential learning approaches, so the result is not surprising in this case either. In addition, AE learners had more positive results in experiential classes than both RO learners and AC learners. Some features of experiential courses, such as experiential-based projects, would tend to appeal more to the AE learner and not so much to the other two learning styles (RO and AC).

Learning styles also moderated significantly in participative courses. As is the case with experiential courses, CE learners have more positive outcomes than do RO learners. Additionally, similar to the discussion for experiential learning, some features of participative courses, such as small-group discussion, would tend to appeal more to the AE learner and not so much to the RO learner, making sense of this result.

Another interesting result of this study is that no significant results were found among the learning styles for actual grades for the courses. This finding suggests that learning styles have an impact on student perceptions of the various course designs, but not on their actual performance in the course.

One weakness of this study is the fact that the analysis was conducted using a sample of students from only one university and using only marketing and management courses. To be able to make stronger and more general conclusions, the impact of a greater number of universities and courses across all areas of the business curriculum should be examined. In addition, other student characteristics, such as personality, level of stress, ability or inability to trust, etc., might further interact with the course designs to confound the findings. Further research should be conducted to attempt to identify the factors that might influence how meaningful and long-lasting a business student's education will be.

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ESTIMATION OF GENERAL EDUCATION PROGRAM ENROLLMENT

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ABSTRACT

This study examines the differential effect of various factors on three categories of general education program enrollment. Cross-correlation analysis reveals that the relationship between middle core and outer core is positively related. Moreover, the strength of the relationship stays strong and statistically significant up to lag3 (about year and a half). Thus, this study provides evidence suggesting middle core and inner core categories exhibiting long memory. In general, associations between outer core and middle core and middle core with inner core are found to be positively correlated after controlled for trend. This exhibits long-term statistical dependence in these factors. However, the magnitude and the nature of dependency comparatively differ between inner core with middle core and middle core with outer core. These cross-correlations are not widely examined and suggest an additional link between tiered academic programs and factors that are involved in the student enrollment dynamics. In addition, regression results provide confirming evidence of the contrasting effect of semester and time trend on the inner core, middle core, and outer core enrollments.

INTRODUCTION

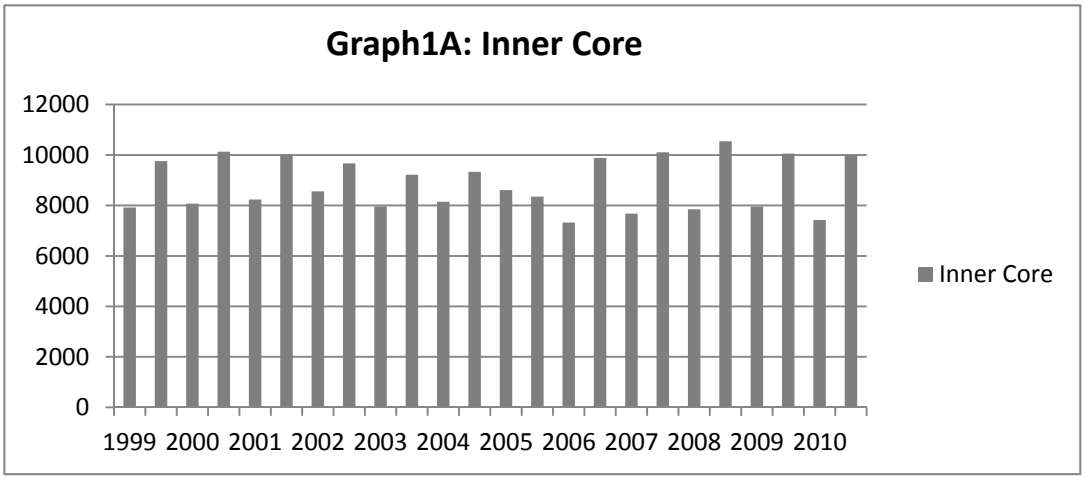
Course schedules are prepared and submitted by departments and schools well in advance of the start of the semester so that students are able to make plans for the timely completion of their academic degree programs. At this mid-western university, course schedules for the next fall semester are due at the beginning of November of the previous year, when admissions estimates, course pass rates, and student retention report are unavailable. However, the freshmen enrollment numbers stay relatively steady at around 3200, rarely differing by more than 100-200 students each fall. The schedules are available to students and advisors by the second week of November, early registration for continuing students begin in mid-March after spring break, spring grades are recorded in May, and freshmen and transfer student orientations begin in early June. Occasionally new instructors have to be hired to meet unexpected needs or current instructors have to have their

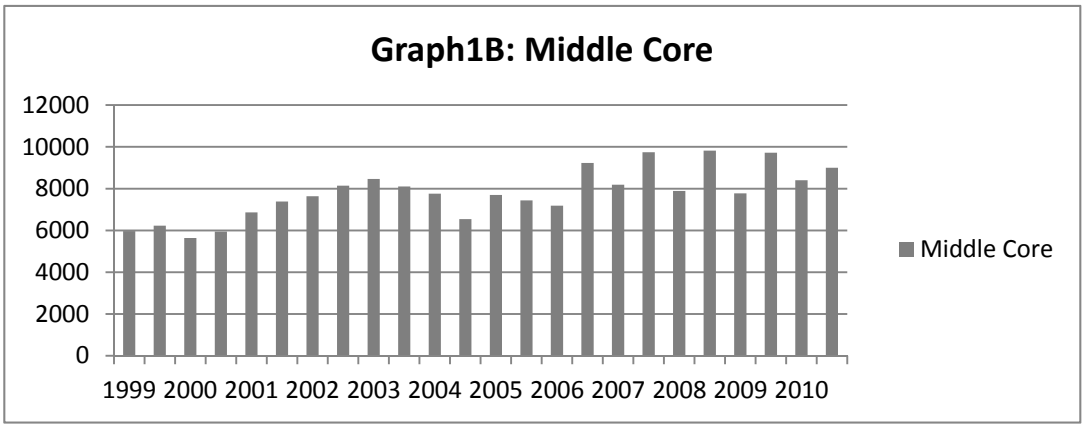
schedules adjusted because of shifting demand. It is difficult for those instructors who are hired near the beginning of the semester to adequately prepare. It is also difficult for those students who are on a waiting list. Making precise predictions when preliminary schedules are constructed and adjusting these estimates as soon as possible are extremely important. Although complete relevant information on enrollment is not available at the time of prediction, an analysis of historical data makes it possible to construct generic course prediction models that are robust and fairly accurate for estimating the enrollment. This type of course prediction model can facilitate releasing additional seats to new students by better estimating seat requirement. New student registration is distributed over the summer preceding the fall semester through a series of sessions where students may register for courses. Universities use seat release systems to give similar enrollment opportunities to all incoming students. A seat release system also hedges fall course predictions by partially filling each section over time rather than filling each section in sequence. The model we present establishes the estimated demand for seats among three categories of General Education courses, namely Inner Core, Middle Core, and Outer Core courses. The model we present establishes the estimated demand for seats among three levels of General Education courses that were designed to be largely sequential, namely Inner Core, Middle Core, and Outer Core courses.

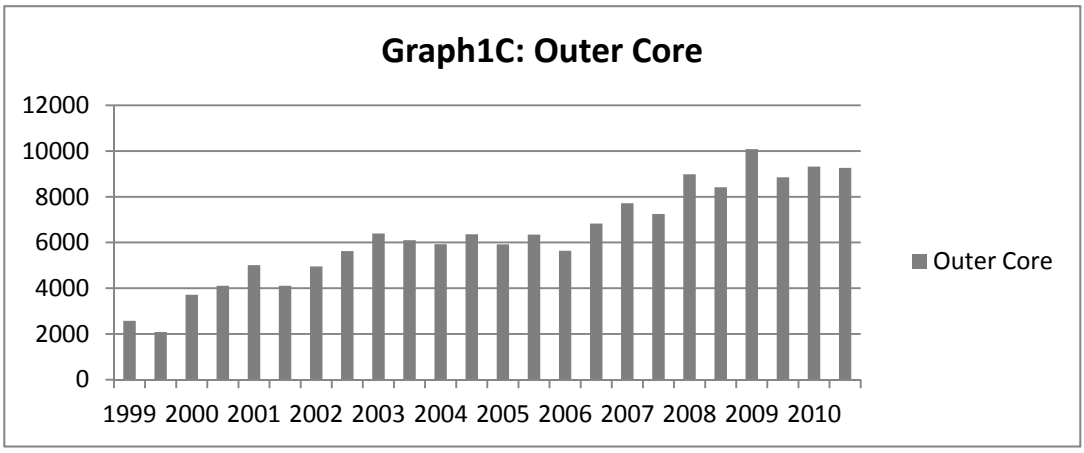
Enrollment prediction for general education courses, which provides information to the decision makers for budget planning and other aspects of planning, is important in many ways for the institution. Because of such importance, researchers have proposed many prediction methods to improve the accuracy of the enrollment estimation. However, obtaining accuracy on enrollment estimation is not an easy task, as many factors have impacts on the enrollment numbers. Many methods have been proposed and applied in enrollment prediction. Different models generate different results. The growth curve model by Weiler (1980) that was used for forecasting enrollment at the University of Minnesota, generated much variation in forecasting errors. Guo and Zhai (2000) applied survival ratio techniques to a four-year university enrollment. Song and Chissom (1993) applied the fuzzy time series approach to the enrollment prediction. Tsui & Murdock (1997) reviewed seven prediction models and analyzed the margin of errors on those models to comprehend the accuracy of the models.

As accuracy is an important concern in prediction, researchers engage in including more and more factors in their forecasting models. Some of the complex models combine the retention study and enrollment projection study together. These models also include such variables as high school and college grades, SAT or ACT scores, student demographic information, and their economic status. These factors could provide information about whether a student would return next semester or not, thus they might increase the accuracy of prediction of enrollment in the near term. However, models that are applied for the long term enrollment prediction will have little power with such factors. In addition, estimation of more parameters will hurt degrees of freedom and may not sustain the long-term characteristics of those factors over time. Thus, models with parsimonious parameterization characteristics are preferable over complex systems for projecting into the future. Estimating the demand for courses or a group of courses becomes more complicated

by the fact that different students have different needs and requirements for their majors, in addition to varying needs for electives, minors, accreditation, etc. Moreover, a variety of choices makes the forecasting model more difficult to build. In addition, new course(s) as well as addition and/or deletion of existing course(s) may force students to make different choices. This paper examines three step projection models for the total general education enrollment projection using historical data of twelve years (both spring and fall). Thus, the process starts with Inner Core enrollment prediction, then Middle Core, and then Outer Core enrollment. Combining these three estimates will provide the total general education enrollment estimate.







General Education

One of the continuing concerns for any college or university is to provide enough seats in General Education classes to all students who need them. General Education provides a basic structure for students in terms of knowledge and skills in such foundational areas as writing, speech, and mathematical and scientific literacy. It is necessary to have these courses early in a student's academic career in order to prepare him or her for more advanced classes, including those in the major. Despite many challenges, it's necessary to come up with some type of model to predict the number of seats that are needed in different categories so that students stay full time, become well prepared for more advance academic classes and their major, and are able to be exposed to the variety of liberal arts that make up general education.

At this University, there is a three-tiered system in which students take foundational courses in writing, speech, mathematics, and science in their first year, and build on that foundation in subsequent semesters in multidisciplinary courses in the Middle Core in areas such as Quantitative Reasoning, Language in the Humanities, United States Traditions, Individuals and Civic Life, and Individuals and Society. The Outer Core is more discipline specific in that students need one course in each of four different areas: Social Sciences, Fine Arts, Humanities, and Science, Mathematics, and Technology.

The program's overall structure is designed to ensure that developmental objectives are achieved through the coherent and sequential interrelationship of courses. Inner Core courses provide basic knowledge and skills upon which Middle Core courses build, and those courses in turn prepare students for courses in the Outer Core. The complete General Education Program consists of 14 courses (42 semester hours), which is approximately one third of the total credits required for graduation. Students will take most General Education courses during their freshman and sophomore years, along with some courses in their major or other elective courses.

Inner Core: The Inner Core courses focus on the acquisition and practice of specific academic skills: language, mathematics, and science. These courses offer a structured context for the development of abilities and understanding, and are important to subsequent undergraduate course

work. Students are expected to take Composition as Critical Inquiry or Communication as Critical Inquiry the first semester of their freshman year and the other course in their second semester. The mathematics and natural science requirements are to be completed as early as possible.

Middle Core: This General Education category is of two varieties. Quantitative Reasoning and Language in the Humanities courses provide opportunities for the continued development of academic skills applied to a range of topics and involving a variety of disciplinary perspectives. Courses in the other Middle Core categories: United States Traditions, Individuals and Civic Life, and Individual and Societies foster the application of academic skills to traditional knowledge bases. Students take one course from each of the five categories.

Outer Core: These courses give insight into the varied nature of disciplinary knowledge; introducing students to the ways that specific disciplines create knowledge and examining the interplay between disciplinary inquiry and the larger world in which such an inquiry is situated. Students take one course chosen from each of four discipline groups: Science, Mathematics, and Technology; Social Sciences; Fine Arts; and Humanities.

DATA AND METHODOLOGY

Data were collected from the enrollment record of General Education courses for twelve consecutive years and thus provides us a time-series data for 24 semesters. Enrollment numbers were grouped into three different General Education categories. The General Education Program at this university is an integrated set of courses that focuses on the development of communication and problem-solving skills and abilities, such as persuasion, listening, and argumentation; logical and quantitative thinking; and understanding varying perspectives on issues. These skills and abilities provide an essential grounding for work in the student's major. The program's overall structure is designed to ensure that developmental objectives are achieved through the coherent and sequential interrelationship of courses. Inner Core courses provide basic knowledge and skills upon which Middle Core courses build, and those courses in turn prepare students for courses in the Outer Core. Therefore, we hypothesize that Outer Core enrollment depends on Middle Core enrollment and Middle Core depends on Inner Core enrollment. In addition, semester (spring and fall) can also be a determinant for enrollment projection. We therefore, include semester as a categorical (dummy coded) independent variable during the model building phase.

TABLE-1A: Summary Statistics of Inner Core, Middle Core, and Outer Core Enrollment numbers for year (1999-2010).

Variables	N	Mean	Std Dev	Minimum	Maximum
Inner Core	24	8866.83	1026.78	7320.00	10541.00
Middle Core	24	7781.88	1203.68	5638.00	9823.00
Outer Core	24	6316.71	2150.54	2082.00	10087.00

TABLE-1B: Summary Statistics of Inner Core, Middle Core, and Outer Core Enrollment numbers for Spring Semester (1999-2010).

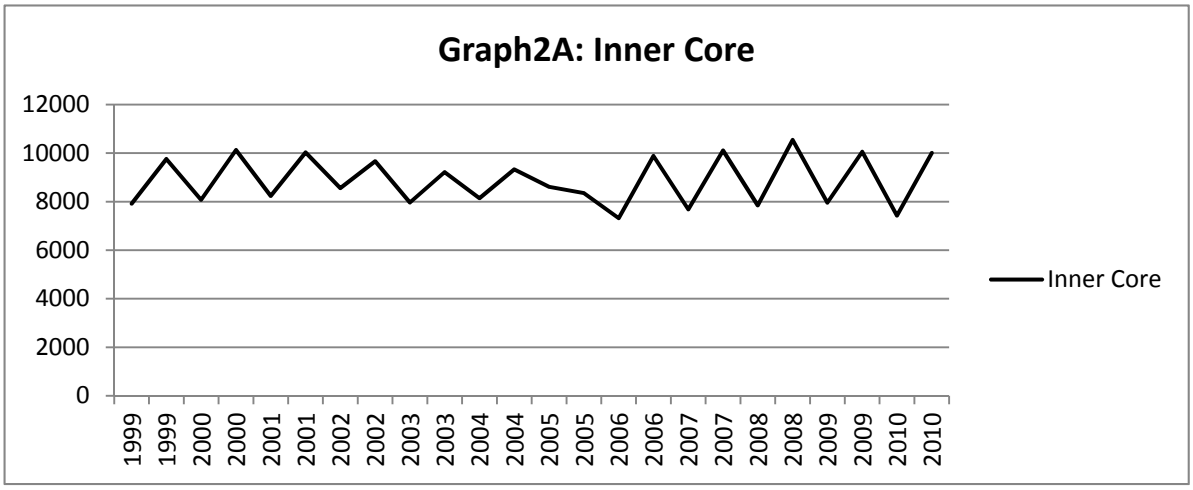
Variables	N	Mean	Std Dev	Minimum	Maximum
Inner Core	12	7977.67	391.17	7320.00	8609.00
Middle Core	12	7455.58	897.08	5638.00	8463.00
Outer Core	12	6353.83	2285.03	2575.00	10087.00

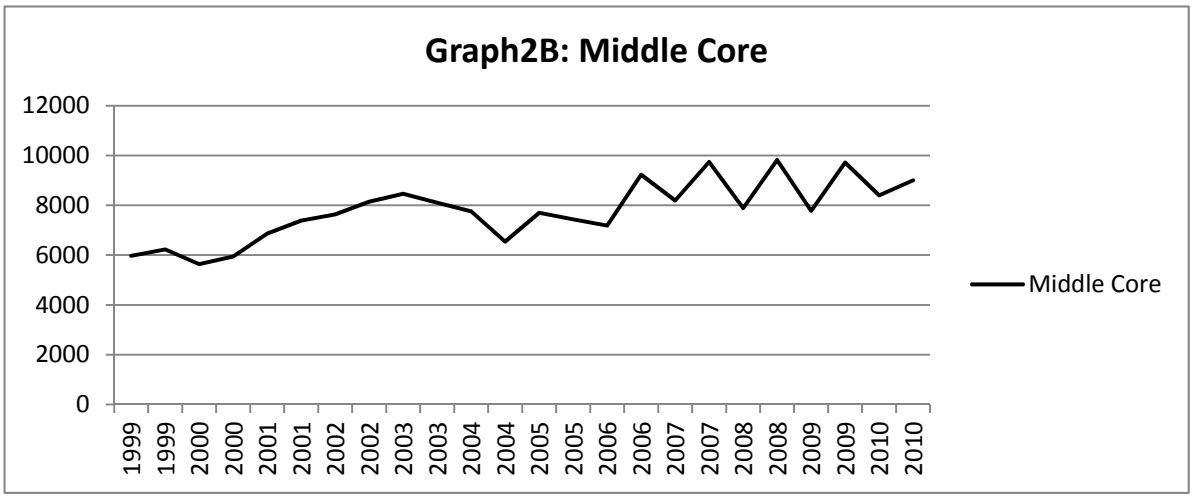
TABLE-1C: Summary Statistics of Inner Core, Middle Core, and Outer Core Enrollment numbers for Fall Semester (1999-2010).

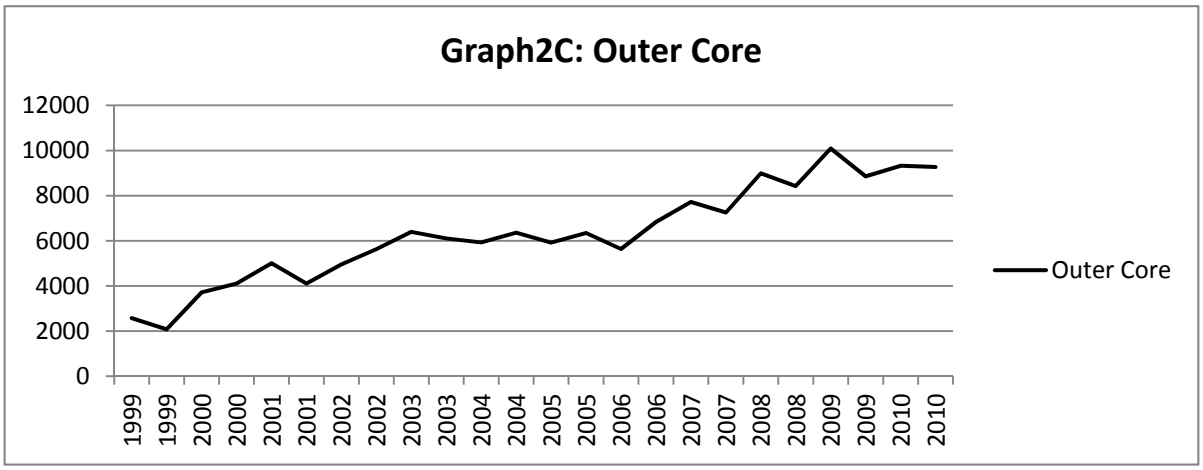
Variables	N	Mean	Std Dev	Minimum	Maximum
Inner Core	12	9756.00	571.31	8344.00	10541.00
Middle Core	12	8108.17	1411.51	5945.00	9823.00
Outer Core	12	6279.58	2108.49	2082.00	9264.00

Table 1(A,B,C) shows the distributions of Inner Core, Middle Core, and Outer Core enrollments for the time period mentioned above. As observed in Table 1A, the average number of Inner Core enrollment is 8,866.83 for an academic year (spring and fall). However, enrollment is observed to be much higher in the fall compared to the spring (see Table 1B & 1C). In addition, variability is much lower when observed by semester compared to year. This implies that the Inner Core enrollments are homogeneous within the semester and heterogeneous between semesters. Thus, the semester can be an important predictor for enrollment projection for Inner Core. Similar but smaller differences can be observed for Middle Core enrollment. The Middle Core enrollments

do not show much difference, if any, due to semester differences. Thus, we can hypothesize that semester differences can be useful to predict Inner Core enrollment, but not for Middle Core or Outer Core. The range for Outer Core (8,005) is much higher than the range for Middle Core (4,185), or Inner Core (3221) for the time period considered (see Table 1-A) in this paper. Similar results can also be observed by semester. This outcome instigates us to examine possible trend behavior in the enrollment data. In fact, there is an observable upward trend for Outer Core enrollment (see graph 1C and 2C), whereas the trend in the Inner Core enrollment is nonexistent as depicted in graph 1A and 2A. Therefore, we hypothesize that time trend can be an important predictor for Middle Core and Outer Core enrollment projection. In addition, there may be time lag effect of Middle Core on Outer Core and Inner Core on Middle Core.







To examine our hypotheses we perform our research analyses as follows. First, we use the cross-correlation analysis with lag predictors to examine the direction of the association and whether the Inner Core or Middle Core enrollment exhibit any long memory to influence the projection; the term refers to long-term statistical dependence in time series data. Second, we use time-series regression to examine the magnitude and significance of Inner Core, Middle Core, and Outer Core enrollment using semester as one of the factors over time and to observe any acceleration /deceleration of the momentum of the enrollment. Specifically, we regress the enrollment (Inner Core, Middle Core, or Outer Core) on the semester, time trend, and a relevant preceding core enrollment. In our study, we examine all these factors' differential effect to obtain a superior forecasting model to estimate three different enrollment quantities for Inner, Middle and Outer Core categories.

Additionally, Durbin-Watson statistic of ordinary least squares (OLS) estimates indicated the presence of positive autocorrelation. Longitudinal studies, in general, exhibit autocorrelation significance in the regression model (see, Choudhury, 2010). Durbin-Watson test statistic is not reliable to detect autocorrelation for processes other than the first order (see Harvey, 1981; pp. 209-210). Therefore, we have evaluated the autocorrelation function (ACF) and partial autocorrelation function (PACF) of the OLS regression residuals using SAS procedure PROC ARIMA (see SAS/ETS User's Guide, 1993). This allowed the observance of the degree of autocorrelation and the identification of the order of the residuals' model that sufficiently described the autocorrelation. After evaluating the ACF and PACF (see Box, Jenkins, & Reinsel, 1994), the residuals' models are identified and estimated as below.

$$InnerCore_t = \beta_0 + \beta_1 Semester_t + \nu_t \qquad \text{------- (1)}$$

and $\nu_t = \phi_5 \nu_{t-5} + \varepsilon_t$.

InnerCore = number of Inner Core enrollment, Semester = 0 , if spring and Semester = 1, if fall.

$$MiddleCore_t = \beta_0 + \beta_1 TimeTrend_t + \beta_2 InnerCore + \nu_t \quad \text{------- (2)}$$

and $\nu_t = \phi_1 \nu_{t-1} + \phi_2 \nu_{t-2} + \varepsilon_t$.

MiddleCore = number of Middle Core enrollment, TimeTrend = 1 to 24 in one unit increment.

$$OuterCore_t = \beta_0 + \beta_1 TimeTrend_t + \beta_2 MiddleCore_{t-3} + \nu_t \quad \text{------- (3)}$$

and $\nu_t = \phi_1 \nu_{t-1} + \varepsilon_t$.

OuterCore = number of Outer Core enrollment.

Maximum likelihood estimation method is used instead of two step generalized least squares to estimate the regression parameters in the regression model. Maximum likelihood estimation is preferable over two step generalized least squares, because of its capability to estimate both regression and autoregressive parameters simultaneously. Moreover, maximum likelihood estimation accounts for the determinant of the variance-covariance matrix in its objective function (likelihood function). Further discussion on different estimation methods and the likelihood functions can be found in Choudhury, Hubata & St. Louis (1999); also SAS/ETS User's Guide, 1993 for the expression of the likelihood functions. Likelihood function of the regression model with autocorrelated errors can be expressed as follows:

$$L(\beta, \theta, \sigma^2) = -\frac{n}{2} \ln(\sigma^2) - \frac{1}{2} \ln |\Omega| - \frac{(Y - X\beta)' \Omega^{-1} (Y - X\beta)}{2\sigma^2}$$

Table-2: Lagged Correlations between Inner, Middle, and Outer Core

	Year	Semester	Inner Core	Inner Core Lag1	Inner Core Lag2	Inner Core Lag3	Middle Core	Middle Core Lag1	Middle Core Lag2	Middle Core Lag3	Outer Core
year	1.0000 24	0.0000 1.0000 24	-0.036 0.8644 24	0.0476 0.8252 24	0.0361 0.8700 23	0.0679 0.7639 22	0.7469 <.0001 24	0.74407 <.0001 24	0.74688 <.0001 23	0.72642 0.0001 22	0.9550 <.0001 24
Semester	0.0000 1.0000 24	1.0000 24	0.8846 <.0001 24	-0.826 <.0001 24	0.8184 <.0001 23	-0.809 <.0001 22	0.2769 0.1902 24	-0.01590 0.9412 24	0.04128 0.8516 23	0.01905 0.9330 22	-0.017 0.9348 24
Inner Core	-0.0368 0.8644 24	0.8846 <.0001 24	1.0000 24	-0.759 <.0001 24	0.7871 <.0001 23	-0.757 <.0001 22	0.3440 0.0997 24	-0.10862 0.6134 24	0.10147 0.6450 23	-0.07652 0.7350 22	-0.040 0.8495 24
Inner Core Lag1	0.0476 0.8252 24	-0.826 <.0001 24	-0.759 <.0001 24	1.0000 24	-0.743 <.0001 23	0.7736 <.0001 22	-0.227 0.2845 24	0.30377 0.1490 24	-0.14097 0.5212 23	0.03665 0.8714 22	0.1731 0.4185 24
Inner Core Lag2	0.0361 0.8700 23	0.8184 <.0001 23	0.7871 <.0001 23	-0.743 <.0001 23	1.0000 23	-0.721 0.0001 22	0.3582 0.0933 23	-0.17682 0.4196 23	0.35475 0.0967 23	-0.06008 0.7906 22	0.0336 0.8789 23
Inner Core Lag3	0.0679 0.7639 22	-0.809 <.0001 22	-0.757 <.0001 22	0.7736 <.0001 22	-0.721 0.0001 22	1.0000 22	-0.162 0.4706 22	0.31992 0.1467 22	-0.21888 0.3278 22	0.30077 0.1738 22	0.1430 0.5253 22
Middle Core	0.7469 <.0001 24	0.2769 0.1902 24	0.3440 0.0997 24	-0.227 0.2845 24	0.3582 0.0933 23	-0.162 0.4706 22	1.0000 24	0.57133 0.0035 24	0.72581 <.0001 23	0.50969 0.0154 22	0.7301 <.0001 24
Middle Core Lag1	0.7440 <.0001 24	-0.015 0.9412 24	-0.108 0.6134 24	0.3037 0.1490 24	-0.176 0.4196 23	0.3199 0.1467 22	0.5713 0.0035 24	1.00000 24	0.56327 0.0051 23	0.71006 0.0002 22	0.8062 <.0001 24
Middle Core Lag2	0.7468 <.0001 23	0.0412 0.8516 23	0.1014 0.6450 23	-0.140 0.5212 23	0.3547 0.0967 23	-0.218 0.3278 22	0.7258 <.0001 23	0.56327 0.0051 23	1.00000 23	0.55574 0.0072 22	0.7750 <.0001 23
Middle Core Lag3	0.7264 0.0001 22	0.0190 0.9330 22	-0.076 0.7350 22	0.0366 0.8714 22	-0.060 0.7906 22	0.3007 0.1738 22	0.118 <.000 2329	-0.308 <.000 2329	-0.240 <.000 2329	1.000 2329	0.385 <.000 2329
Outer Core	0.9550 <.0001 24	-0.017 0.9348 24	-0.040 0.8495 24	0.1731 0.4185 24	0.0336 0.8789 23	0.1430 0.5253 22	0.143 <.000 2329	-0.448 <.000 2329	-0.326 <.000 2329	0.385 <.000 2329	1.000 2329

EMPIRICAL ANALYSIS

We report the results of statistical analysis investigating the association between enrollment, semester, and preceding core enrollment (contemporaneous and lagged). Table 2 presents lead-lag correlations along with their p-values for three different core enrollments and enrollment effect up to 3 semester (year and a half) lag. Strong positive correlations are observed with Outer Core and the Middle Core. Even though the association remains statistically significant up to 3 semesters long, the strength of the association diminishes slowly indicating the impact on Outer Core is more pronounced during the recent semesters than distant past. In contrast, correlations between Middle Core and Inner Core are weaker and oscillate between positive and negative correlations in alternative lag periods and slowly diminish. This is perhaps due to the interaction effect of semester that plays a role on affecting Middle Core enrollment in conjunction with Inner Core enrollment. Results also show that Middle Core exhibit stronger long memory on the Outer Core. The concept of long memory in a time series is used to indicate statistical dependence in which the autocorrelation function decays at a much slower rate than in the case of short-term statistical dependence. Long-term dependence has only begun to be addressed recently in macroeconomic and financial time series data (Abderrezak, 1998). The positive impacts of Middle Core on Outer Core become statistically significant even after year and a half delay. This delayed positive impact is consistent with the idea that more student enrollment in the Middle Core increases the supply of students that are eligible to take Outer Core courses and consequently impacts the enrollment number in the outer core courses. This result is consistent with other research findings in that it suggests protracted upward spiral momentum of the process mechanism known as domino effect (Choudhury & Campbell, 2004).

Table 3: Regression Results for Inner Core Enrollment (Maximum Likelihood Estimation).

Independent Variables	Maximum Likelihood Estimates of Parameters	Standard Error	t Value	Approx Pr > |t|
Intercept	6346	233.4308	27.19	< 0.0001
Semester (Spring & Fall)	1653	149.1943	11.08	< 0.0001
R-Squared	0.83	0.78 (OLS)		
Durbin-Watson	1.70	1.42 (OLS)		

Note: The regression residuals model is identified as, $\nu_t - \phi_5 \nu_{t-5} = \varepsilon_t$ and the estimated fifth order autoregressive (AR) parameter from SAS is, $\nu_t + 0.4647\ \nu_{t-5} = \varepsilon_t$.
$(1.94)^*$.
Autoregressive parameter's t-statistic is reported in the parentheses. It is significant at the ten (*) percent level of significance (with p-value = 0.065).

Regression results reported in Table 3, 4, and 5 provides confirming evidence of the contrasting effect of Inner Core and Middle Core on the Middle Core and Outer Core respectively. Time trend is positively associated with Middle Core and Outer Core; however, the effect is almost twice as much on Outer Core compared to Middle Core (432 vs. 244, see Tables 4 & 5), suggesting a rapid expansion of Outer Core enrollment. On the other hand, there is no apparent trend visible in the Inner Core enrollment and thus makes it a steady process. We applied forward, backward, and mixed stepwise methods to select the regression model through the R-squared statistics and significance level as a criterion to add variables into the model or delete variables from the model. Moreover, the model resulting from stepwise selection provided the same conclusion that time trend, preceding core enrollment including lag effect, and semester difference (in case of Inner Core), are significant factors in impacting the projection of student enrollments.

Middle Core enrollment including lag and time trend have direct impact on the Outer Core enrollment, as indicated by the positive coefficients that resulted in increasing enrollments of Outer Core. More specifically, one can assert that if the time trend increases by one semester, Outer Core enrollment increases by approximately 432 students. Similarly, an additional increase of four students in the Middle Core enrollment in a year and a half ago, current Outer Core enrollment will be increased by one more student (approximately).

Table 4: Regression Results for Middle Core Enrollment (Maximum Likelihood Estimation).

Independent Variables	Maximum Likelihood Estimates of Parameters	Standard Error	t Value	Approx Pr > |t|
Intercept	-484462	92823	-5.22	<.0001
Time Trend	244.0590	46.2815	5.27	<.0001
Inner Core	0.3418	0.1507	2.27	0.0351
R-Squared	0.77	0.70 (OLS)		
Durbin-Watson	1.97	1.36 (OLS)		

Note: The regression residuals model is identified as, $\nu_t - \phi_1 \nu_{t-1} - \phi_2 \nu_{t-2} = \varepsilon_t$ and the estimated first and second order autoregressive (AR) parameters from SAS are, $\nu_t - 0.4711\ \nu_{t-1} + 0.3825\ \nu_{t-2} = \varepsilon_t$.

$(-2.07)^{*}$ $(1.64)^{-}$

Autoregressive parameter's t-statistic is reported in the parentheses. First parameter is significant at the ten (*) percent level (with p-value = 0.052) and the second parameter is not significant at ten percent (with p-value = 0.117).

On the other hand, Inner Core enrollments do not exhibit any statistically significant time trend, but they do differ due to semester differences. Specifically, one can assert that estimated demand for Inner Core seats would be 1653 more in the fall as opposed to the spring semester. In

addition, this one explanatory factor alone explains 83% of the variation in the Inner Core enrollment after adjusted for autocorrelation. After being adjusted for autocorrelation, the Durbin-Watson test-statistic (DW=1.70) indicates that the errors are not correlated.

Table 5: Regression Results for Outer Core Enrollment (Maximum Likelihood Estimation).

Independent Variables	Maximum Likelihood Estimates of Parameters	Standard Error	t Value	Approx Pr > |t|
Intercept	-862375	130915	-6.59	<.0001
Time Trend	432.4971	65.5636	6.60	<.0001
Middle Core_Lag3	0.2613	0.1100	2.37	0.0289
R-Squared	0.93	0.91(OLS)		
Durbin-Watson	1.73	1.25 (OLS)		

Note: The regression residuals model is identified as, $\nu_t - \phi_1 \nu_{t-1} = \varepsilon_t$ and the estimated first order autoregressive (AR) parameters from SAS are, $\nu_t - 0.3658\ \nu_{t-1} = \varepsilon_t$.

$(-1.62)^*$.

Autoregressive parameter's t-statistic is reported in the parentheses. It is not significant at the ten (*) percent level of significance (with p-value = 0.121).

CONCLUSION AND DISCUSSION

This paper makes a number of significant contributions to the literature. It provides additional evidence of differential effect of various factors on three categories of General Education enrollment. In addition, it also provides evidence suggesting the number of enrollments display long memory. Associations between Outer Core and Middle Core and Middle Core with Inner Core are found to be positively correlated after controlled for trend. However, Inner Core projection does not require any other factor(s) except for semester information to be able to project into the future. These results while important are not unexpected given the dynamic structure of the three tier General Education program.

Considering Inner Core enrollments dependency only on the semester and not on any other factors illustrates how policy makers can benefit from this simplicity and using the results of this study for Inner Core enrollment projection. In addition, the three forecasting models for three different categories that we have developed in this study can be estimated sequentially without any simultaneous consideration. Since the association between Middle Core and Inner Core, and Outer Core and Middle Core are positive and separated; preceding core enrollment can be used as an indicator for understanding the future trend movement of Middle or Outer Core enrollment. Therefore, understanding the mechanism of lead-lag relationship between different core

enrollments will provide an advantageous position to the policy makers to prepare an appropriate policy design for enrollment projection.

Thus, these results add another dimension to the study concerning the effect of factors on the enrollment activity in higher education. Additional theory development is needed, particularly with regard to the linkage between factors and their interaction effect on the enrollment dynamics. To determine further whether the association between Inner Core and Middle Core or the association between Middle Core and Outer is stationary, future research could examine these structures over different institutions and different time periods.

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EMPLOYING THE CITIZEN CENTRIC REPORT INITIATIVE IN THE CLASSROOM

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ABSTRACT

The "Citizen-Centric Report" (CCR) initiative was founded by the Association of Government Accountants (AGA). The instructor used this initiative as a team project that requires each team to prepare a four (4)-page report of a government agency or organization. This project challenges students to work as a team while exercising their communication, research, and technology skills in gathering information and preparing the report. The team is to develop a CCR that identifies the organization's mission and goals; identifies performance measurements; translates financial statements into laymen's terms; and identifies the economic challenges and future outlook of the agency or organization.

BACKGROUND

The learning objectives of this project are for students to demonstrate critical thinking, the ability to gather and synthesize information for management problems, the ability to communicate and associate relevant financial and non-financial information effectively, and to demonstrate competency in the use of information technology in accounting or business environments.

To enhance student learning in the government accounting environment, the instructor used this initiative to provide students with real-world experience by using the actual data of the research organization. The instructor found this assignment to be a particularly useful tool in helping students to better understand the concepts taught, especially if students have a difficult time comprehending the textbook contents. The "Citizen-Centric Report" project is appropriate for upper-division undergraduate or graduate level courses.

LITERATURE REVIEW

The "Citizen-Centric Report" (CCR) initiative originated with the Association of Government Accountants (AGA). The AGA started the Government Finance Case Challenge in 2008, in which students were to prepare a 4-page citizen-centric report that summarizes the organization's background, performance measurements, financials, and challenges and outlook. The national competition will begin in the fall semester with results announced during the spring semester. The completed report was judged based on the AGA's CCR content and design guidelines (AGA, 2013).

Miller (2013) affirmed that the CCR competition was "a way to introduce college students to the government – no matter what level." He further stated that the competition "promises to challenge students' moral reasoning, raise their awareness of the importance of accountability and open doors to a career in government."

Stocker (2012) mentioned in her paper that the competition served as a learning opportunity for students. Students shared that they had little knowledge about the financial operations of a city government and were able to gain knowledge during the CCR competition. Furthermore, the competition gives students the opportunity to learn the operations of a government and about citizen participation (AGA, 2012).

The instructor for this course used this project to expand students' knowledge about government accounting while raising awareness about their government's operations and services. The project exposed students to their government and also addressed several core competency frameworks identified by the American Institute of CPAs.

Detailed Project Description

Student teams were required to select an agency or other entity from within the Government of Guam. Each team was required to prepare a "Citizen-Centric Report." The CCR is designed to serve as a snapshot of an organization and is prepared in such a way that any average citizen would be able to understand all of the information provided.

The general process the teams followed to develop the CCRs is as follows:

1. Select an agency or entity of the local government;
2. Research the selected organization, including the mission and structure of the organization;
3. Review the selected organization's audited financial statements;
4. Prepare and present the CCR.

Team Selection and Evaluation

Students were allowed to form their teams voluntarily. Once teams were formed, those groups of students were to work with each other throughout the semester. At the end of the semester, each team was required to present their report to the class. Each student was required to rate each team member (including themselves) in the areas of preparation, participation, interpersonal relations, and communications. A student's self-evaluation serves as his or her individual reflection of how he or she fared as a member of the team.

Citizen-Centric Report Contents

Suggested content for a CCR is provided by the AGA (AGA, n.d.). The content of the report was graded based on the following guidelines.

Page 1 Background Information

The first page of a CCR should include a table of contents and should present background and general information about the organization, including the organization's vision or mission statement; the strategic goals of the organization; a brief description of how the organization is structured; and a brief description of the organization's general clientele, whether they be members of the general public or otherwise.

Page 2 Performance Measurements

The second page of a CCR should serve as a non-financial performance report of the organization in that it should contain information describing the services provided by the organization, based on the vision or mission statement (as described in page one) and the organization's success, or lack thereof, in providing those services to meet the vision/mission described. Students are to identify and illustrate possible outcome measures to analyze the organization's overall performance in meeting its mission, based on interpretations of the data gathered. For example, the mission of the Guam Board of Accountancy (GBOA) is to "maintain professional standards and practices to safeguard the public interest, through certifying, licensing, and/or regulating all Certified Public Accountants (CPA) practicing in the Territory of Guam." Then possible outcome measures to consider is the number of participants sitting for the exams, the number of participants who passed the exams, how many individual licenses are issued, or the number of CPA firm permits issued. This can be measured from one year to the next, and offers one way to determine the level of performance of GBOA.

Page 3 Financial Information

The third page of a CCR should provide a snapshot of the financial data of the organization, to include the costs of providing the services required to meet the mission of the organization, as previously identified. In addition to the costs or expenditures of the organization, this section of the CCR should also clearly explain how these costs are covered. What is the income source for this organization? How much of this income is spent on programs, or on the different expense categories, such as personnel, contracts, supplies, or miscellaneous? Page 3 of the CCR should make use of the various tools available to more easily communicate financial data, including bar graphs and pie charts, to name a few. This page should also include a comparison of the organization's finances from one year to another, and lastly, it should include the results of the annual independent audit of the organization.

Page 4 Future Challenges and Economic Outlook

The fourth page of a CCR should reflect the anticipated future challenges and economic outlook for the organization. This may include items specific to the organization or community, for example, the "internationalizing" of the U.S. uniform CPA examination; taking into consideration infrastructure development for public works agencies; or tourism market conditions

for the local visitors' bureau. Page 4 may also include the contact information for the organization (if such information is not included elsewhere in the report), as well as a list of references used in preparing the report.

Citizen-Centric Report Design

The design of each report was graded based on the following guidelines, which are also suggested by the AGA (AGA, n.d.).

Visual Appeal & Readability

The physical design and the way in which the report is written are just as important as the information the report contains. If the report does not look visually appealing, then no one will want to read it. Students are advised to include pictures from the community, or of the organization itself, and charts and graphs wherever possible. Including a graphic of the organization's seal/logo on the front page is also strongly advised.

Another important factor in considering visual appeal and readability of a report is to avoid the use of accounting jargon and other technical language. Students are also advised to refrain from using acronyms. They are reminded that these reports are geared toward average citizens, most of whom do not have a degree in accounting. It is also suggested that students do not attempt to cover every inch of each page with information. Instead, leave some "white space" (empty areas), which helps to emphasize more critical information and adds to the visual appeal of the report.

Physical Layout

For ease of relaying information to the reader, a consistent column grid should be used. Aligning objects such as charts, text boxes, images, and graphics to the edges of a column in the grid allows for clear page organization and easy-to-read data. Each page should have the same margin width, the same number of columns, and a header or footer that is consistent throughout the report to keep it cohesive. White space should not be "trapped" between two or more elements, but, if used, should be kept to the outer edges of the main content.

Colors and Fonts

The report should use a limited color palette, ideally no more than two or three unique colors. Lighter shades of the same color can be used to add variation without distracting the reader from finding the core text and data provided. For similar reasons, overly bright or clashing colors should not be included in the color palette.

Images and Graphics

Any images or photos included should take into consideration the distribution method of the report. For any reports distributed electronically (as a PDF via e-mail or the Internet), the required image resolution should be at least 72 dots per inch (dpi) at actual size. If the report is to be submitted for printing in a newspaper or other printed publication, images will need to be at

least 300 dpi at actual size. Any graphics such as tables, charts, or graphs should be consistent throughout the report in general execution (size, colors used, type size/font of captions, and labels).

Type and Fonts

Fonts should be limited to two font families, generally a serif font (such as Times New Roman) and a sans serif font (such as Helvetica or Arial). Font size should be no smaller than 10-point size to accommodate easy reading, lack of crowding, and to reduce temptation to add too much extraneous information to the page so that the audience can glean relevant and pertinent information quickly from the report. To convey an obvious hierarchy of information, headlines, subheadings, and body text treatments should remain consistent throughout the report. This includes the text size, font, and color.

Presentation

Each team is required to present their "Citizen-Centric Report" at the end of the semester in a professional newsletter format. Each team is required to use a PowerPoint slideshow of no more than 10 slides, and to conduct a presentation, 15–20 minutes in length, discussing each part of their report. Each presentation was followed with a "Question & Answer" session. Students are required to submit the team evaluation form, which includes self-reflection questions.

AICPA CORE COMPETENCIES ADDRESSED

The AICPA core competency framework "defines a set of skills-based competencies needed by all students entering the accounting profession" that facilitates the transition from students to professionals (AICPA). The following core competencies were applicable to the CCR project.

Functional Competencies

Reporting

The CCR project addresses this competency in that students learn how to present accounting data (financial and non-financial), in both written and oral forms. Page 1 presents a general overview of the organization and its vision/mission; Page 2 presents a non-financial performance report; Page 3 presents a financial report; and Page 4 presents the economic outlook.

Research

The CCR project addresses this competency in that the preparation of the entire report requires student research from start to finish. Student teams must thoroughly research their selected organization to gather the data required for inclusion throughout the report. To gather all the necessary information, students must reference a variety of sources (AGA, 2013).

Leverage Technology

The CCR project addresses this competency in that the preparation of the report requires students to use either Microsoft Publisher or Microsoft Word, and Microsoft Excel software to create their reports in a professional newsletter format and to submit their reports electronically.

Broad Business Perspective Category

Strategic/Critical Thinking

The CCR project addresses this competency in that strategic and critical thinking skills are enhanced by the students' requirement to analyze the data they gather and to make various determinations regarding the performance of government entities based on the data gathered.

Industry/Sector Perspective

The CCR project addresses this competency in that students are required to familiarize themselves with the economics and accounting principles of the selected government agency or organization.

Personal Category

These competencies are addressed by the overall preparation of CCRs. In the process of preparing their reports, students sharpen their interpersonal communication skills during their interactions with each other, with fellow students, with the organization staff, and with members of the general public. When gathering data, students must properly and effectively communicate the intent and the purposes of their project. Students learn the importance of approach, as they will find that their attitude and demeanor affect their ability to gather information. When their reports are complete, students must present all the information gathered to the class. Furthermore, each student team identifies a team leader, who leads the group in completing the project and serves as the main point of contact for the group in interacting with the instructor and others.

RESULTS AND DISCUSSION

The participants from this study were students who were enrolled in the government accounting course from the spring 2010 to the fall 2013 semesters at the University of Guam (UOG). Students enrolled in the spring semesters participated in the Citizen-Centric Report (CCR) project. Most of the students who enrolled in the fall semesters did not participate in the CCR project. It is noted that during fall 2011 and fall 2012, 4 students from each semester (total of 8 students), participated in the CCR project due to being selected to represent the UOG team in the Government Finance Case Challenge sponsored by the Association of Government Accountants. Their research project scores were included in the CCR group.

The following hypotheses were tested:

H_0 *There is no difference between the mean score of students who used the CCR project.*

H_1: *There is a difference between the mean score of students who used the CCR project.*

Group Statistics

	Type	N	Mean	Std. Deviation	Std. Error Mean
Score	CCR	66	83.70	8.91	1.10
	NonCCR	51	79.53	12.21	1.71

The mean score of the CCR group was 83.70 (SD = 8.91) and the mean score for the NonCCR group was 79.53 (SD = 12.21). According to the *t*-test, we reject the null hypothesis. There was enough evidence to suggest a significant difference between the scores of the two groups of students, $t(88) = 2.05$, $p < .05$.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval	
									Lower	Upper
Score	Equal variances assumed	0.293	0.589	2.137	115	0.035	4.17363	1.95273	0.30565	8.04160
	Equal variances not assumed			2.054	88.092	0.043	4.17363	2.03153	0.13644	8.21081

A Levene's test for equality of variances indicated that the variances of the two groups were significantly different; a two-sample *t*-test was performed that does not assume equal variance. There is evidence within the setting observed that those students who participated in the CCR project performed better on average than those students who did not participate in the CCR project. The mean score for those who participated in the CCR project (M = 83.70, SD = 8.91, N

= 66) was significantly higher than those who did not participate in the CCR project (M = 79.53, SD = 12.21, N = 51), $t(88) = 2.05$, $p = .043$.

CONCLUSION

Employing the CCR project in the classroom did enhance student learning. In addition, participation in the Government Finance Case competition, by creating a CCR, challenges students' moral reasoning and raised students' awareness of the importance of accountability (Miller, 2013). Several colleges and universities are now taking this project into the classroom (AGA, 2012). In an interview with the team leader, Sara Crabtree (case challenge champions from the graduate level), she shared the following in regards to creating a CCR for the competition:

> "I think that the competition is a great opportunity for students to learn more about the operations of city government finances and citizen participation. In addition, students learn valuable communication skills involving working in teams and problem solving challenges, public speaking, report presentations, and building on their research skills. All of which are essential abilities and skills to have in any profession." p. 3.

The instructor's government accounting course was the first to create such reports for various Government of Guam agencies; therefore, not only did this project enhance student learning, but it also led to the enactment of Public Law No. 30-127, "An Act Relative to Adopting the Association of Government Accountants' Citizen-Centric Report Initiative" in Guam. After the enactment of law, several government agencies called upon UOG students in the government accounting course to assist with helping to create their CCR (V. Duenas, personal communication, November 30, 2011). Students' involvement in our community supports the mission of UOG, which states in part, "The University exists to service its learners and the communities of Guam…" (Crisostomo, 2012; UOG, 2014). The UOG team won the undergraduate-level case challenge in spring 2012 and spring 2013 (AGA, n.d.).

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MARKETING DEPARTMENT CHAIRS AS KEY INFORMANTS – THE ROLE OF GENDER IN JUDGING THE CONSEQUENCES OF STUDENT MARKET ORIENTATION WITHIN AACSB MEMBER SCHOOLS

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ABSTRACT

Phillips (1981) suggests that key informant characteristics (such as gender) are among several factors that can impact variable measurement and "systematic sources of error" (p. 396), and that researchers should take note in attempting to measure organizational characteristics. This manuscript reports the results of a national survey of AACSB business schools examining the impact of student market orientation on overall business school performance, employee esprit de corps, and employee organizational commitment. We extend previous research by the authors into the moderating influence of key informant gender, examining causal models for male and female respondents and also examining Pearson correlation analyses of the consequence variables for males and females. Specific differences in perception (or bias or error or unique insight) are identified and discussed. Marketing department chairs served as key informants in the study.

INTRODUCTION AND LITERATURE REVIEW

Phillips (1981) suggests that key informant characteristics (such as gender) are among several factors that can impact variable measurement and "systematic sources of error" (p. 396), and that researchers should take note in attempting to measure organizational characteristics. Practitioners, in turn, should take note as they form strategy and make policy decisions based on studies that incorporate key informant judgments of organizational characteristics. The influence of gender on perception of professionals has been reported previously in numerous marketing studies. Gender, for example, has been found to affect managers' social orientation (Marz, Powers, and Queisser 2003), ethics judgment (Marta, Singhapakdi, and Kraft 2008; Lund 2008), and perceptions of sales force control tools (Bingham and Quigley 1995).

This study reports the results of a national survey of marketing department chairs at AACSB business schools. Part of a larger effort, the study is an extension of previous research by the authors ( ) which indicated a significant moderating influence of key informant gender on the causal relationships between student market orientation components and selected consequence

variables within AACSB member schools. In this study, we examine these causal relationships more thoroughly for key informant gender.

We use scales from Jaworski and Kohli (1993) to measure overall performance, esprit de corps, and organizational commitment (reworded somewhat for use within higher education). We use the Narver and Slater (1990) scale as reworded and employed by Hammond, Webster, and Harmon (2006) within higher education to measure the three components of student market orientation (customer orientation, competitor orientation, interfunctional coordination).

RESEARCH OBJECTIVES

Though part of a larger effort, the focus of this study is limited. As stated earlier, we further examine the influence of key informant gender on the relationships between student market orientation and three different performance measures within AACSB member schools, employing marketing department chairs as key informants. We split the respondents into two groups, male and female, and examine the responses from each group separately. As stated above, we know from previous research that certain of the causal relationships are significant overall, and that gender moderates those relationships.

The first two research objectives for this study are to identify the statistically significant causal relationships between the student market orientation components (customer orientation, competitor orientation, inter-functional coordination) and selected consequences (overall business school performance, esprit de corps, organizational commitment), as perceived by

(1) male chairs of marketing departments within AACSB member schools, and (2) female chairs of marketing departments within AACSB member schools. The third and fourth research objectives are to identify statistically significant correlations that may exist between the consequence variables (overall business school performance, esprit de corps, organizational commitment) as perceived by (1) male chairs of marketing departments within AACSB member schools and (2) female chairs of marketing departments within AACSB member schools.

METHODOLOGY

Scores are calculated for all variables. We examine regression models for the market orientation components (independent variables) and each of the consequence measures (dependent variables) of overall performance, employee esprit de corps, and employee organizational commitment for marketing chairs overall and then for each gender, addressing the first two research questions.

The third and fourth objectives are addressed by the examination of the results of Pearson correlation analyses between the three selected consequence variables. We present results of the research and discuss the potential implications. Respondent demographics (Table 4), limitations, and suggestions for future research are also provided.

Data for the study were collected by way of a mailed survey, sent to 469 department chairs of AACSB member schools located in the United States. As key informants (Campbell 1955; Phillips 1981), the department chairs were asked to complete the surveys and return them in business reply envelopes that were provided. Of the total survey instruments mailed, 94 (20%) were completed and returned. The Baldrige National Quality Program (BNQP) has established the *Baldrige Education Criteria for Performance Excellence* (2005, 2011) for universities and other educational organizations, which suggests that students are the key customers of higher education. However, anticipating that some respondents may have difficulty with the concept of students as markets (or customers or even stakeholders) of higher education, we did not use those terms in the survey. We simply referred to students as students, and also avoided the terms marketing, marketing concept, and market orientation in the survey and the cover letter.

All items used to measure student market orientation, employee esprit de corps, and employee organizational commitment were measured with a seven point response scale, ranging from one (1) "not at all" to seven (7) "to an extreme extent." Narver and Slater's (1990) market orientation (MKTOR) scale consists of several questions addressing specific behaviors and activities which measure the extent that the organization (university, in this case) applies the marketing concept. We combine the questions to form three subscales as identified by Narver and Slater (1990) that measure the market orientation components (customer orientation, competitor orientation, interfunctional coordination) used in this study. Employee esprit de corps and organizational commitment are described by Jaworski and Kohli (1993) as "the extent to which a team spirit prevailed in the organization" (p. 60), and the extent that "employees were fond of the organization, saw their future tied to that of the organization, and were willing to make personal sacrifices" (p. 60), respectively.

"Overall performance" is measured using the subjective Jaworski and Kohli (1993) two-item measure that is based on executive opinion of performance. Each respondent is requested to answer the two questions about actual recent overall performance relative to the expectations and performance goals of that particular business school. Possible responses on the seven point response scale range from poor (1) to excellent (7).

The scales were subjected to reliability analysis and exploratory factor analysis prior to further analysis (Churchill 1979; Peter 1979). The scales are indicated to be reliable (with alphas ranging from .76 to .87 and item-to-total correlations from .37 to .79). Exploratory factor loadings range from .4 to .9. The Pearson correlation coefficient for the two overall performance items is .757 (sign. .000), indicating reliability for this two-item scale.

The possibility of nonresponse bias was investigated by comparing early and late respondents (Armstrong and Overton 1977). The tests indicated no significant differences between early and late respondents (at the .10 level of significance). Also, Berdie (1989) found that, even in the event of nonresponse bias in mail surveys, typically the bias did not alter the survey findings.

RESULTS AND IMPLICATIONS

We calculate and provide descriptive statistics (mean and standard deviation) for each variable in total and by gender in Table 1. Recall that these response scales range from a low of "1" to a high of "7," with "4" as the midpoint. Note from the table that female respondents perceive higher levels of all three market orientation components and higher levels of overall performance of the business school. However, they perceive lower levels of the employee-related consequences of esprit de corps and organizational commitment.

TABLE 1
Descriptive Statistics by Gender

	Customer Orientation	Competitor Orientation	Interfunctional Coordination
	Mean (N) *Std Dev*	Mean (N) *Std Dev*	Mean (N) *Std Dev*
Mktg. Dept. Chairs	**4.72 (94) *.91***	**3.46 (95) *1.03***	**3.97 (95) *1.07***
Male	4.69 (71) *.94*	3.45 (71) *1.08*	3.92 (71) *1.08*
Female	4.84 (23) *.82*	3.51 (24) *.88*	4.13 (24) *1.06*
	Overall Bus. School Perf.	Employee Esprit de Corps	Employee Org. Commitment
	Mean (N) *Std Dev*	Mean (N) *Std Dev*	Mean (N) *Std Dev*
Mktg. Dept. Chairs	**5.43 (95) *1.10***	**4.16 (94) *1.05***	**4.02 (95) *.89***
Male	5.30 (71) *1.17*	4.19 (71) *1.02*	4.11 (71) *.81*
Female	5.81 (24) *.76*	4.04 (23) *1.12*	3.73 (24) *1.08*

Results of the three regression analyses (one for each dependent variable) are presented in Table 2 for marketing department chairs overall, and also for males and females separately. A total of nine regression analyses, then, are reported altogether. The separate analyses by gender do differ in some respects from the overall analysis and also from each other.

Regression models for marketing department chairs overall indicate statistically significant effects for the customer orientation and interfunctional coordination components, but not for the competitor orientation component of student market orientation. Specifically, results suggest that student customer orientation impacts overall performance ($p<.01$) and also employee esprit de corps ($p<.05$). The interfunctional coordination component is indicated to impact employee esprit de corps ($p<.05$) and also employee organizational commitment ($p<.05$), but not overall performance. All three models are statistically significant ($p<.001$).

Considering male marketing department chairs only, the regression models (Table 2) indicate that customer orientation is again statistically significant. That component impacts overall performance ($p<.05$) and also employee esprit de corps ($p<.05$) in the perception of the male department chairs. No statistically significant effects are indicated for either of the other two student market orientation components. In fact, though unexpected from theory and not

statistically significant, results indicate an inverse effect for the competitor orientation component in the overall performance and esprit de corps models. All three regression models for male marketing department chairs are indicated to be statistically significant (p<.01).

TABLE 2
Tests for Main Effects – Results of Regression Analyses
Regression Coefficients (Standard Errors)

[1] p<.05 [2] p<.01 [3] p<.001	Dependent Variables		
	Overall Performance	Employee Esprit de Corps	Employee Org. Commitment
MARKETING DEPT. CHAIRS OVERALL			
Student Mkt. Orientation - Customer Orientation	.375[2] (.149)	.258[1] (.135)	.202 (.116)
Student Mkt. Orientation - Compet. Orientation	.010 (.130)	-.011 (.118)	.129 (.101)
Student Mkt. Orientation - Coordination	.101 (.133)	.306[1] (.121)	.265[1] (.103)
F	7.60[3]	9.83[3]	10.51[3]
Adjusted R^2	.176	.224	.235
MALE DEPT. CHAIRS			
Student Mkt. Orientation - Customer Orientation	.360[1] (.203)	.349[1] (.181)	.313 (.141)
Student Mkt. Orientation - Compet. Orientation	-.019 (.150)	-.071 (.133)	.081 (.104)
Student Mkt. Orientation - Coordination	.152 (.181)	.162 (.161)	.107 (.126)
F	6.37[2]	5.37[2]	5.72[2]
Adjusted R^2	.187	.158	.168
FEMALE DEPT. CHAIRS			
Student Mkt. Orientation - Customer Orientation	1.198 (.210)	.389[2] (.161)	.389[2] (.151)
Student Mkt. Orientation - Compet. Orientation	1.082 (.251)	.159 (.192)	.202 (.181)
Student Mkt. Orientation - Coordination	-.904 (.191)	.596[2] (.145)	.577[3] (.137)
F	1.21	17.95[3]	22.05[3]
Adjusted R^2	.027	.708	.742

Though similar in some respects to regression models for the males, results of the regressions for the female respondents (Table 2) are considerably different in many respects. Notably, the model for overall performance is not indicated to be statistically significant and none of the individual student market orientation components are indicated to impact overall performance at a statistically significant level (p<.05 or better). Note from that model the unexpected (and statistically insignificant) inverse effect of the interfunctional coordination component on overall performance. The other two regression models for the female respondents are both statistically significant (p<.001). The customer orientation component impacts employee esprit de corps (p<.01) as well as employee organizational commitment (p<.01); interfunctional coordination is also indicated to affect employee esprit de corps (p<.01) and organizational commitment (p<.001). The competitor orientation component of student market orientation is not indicated to impact any of the proposed consequences of market orientation for the female marketing department chairs.

As suggested by our earlier study, male and female department chairs differ in their perceptions of the causal relationships. Within AACSB schools, gender matters when attempting to ascertain the impact of the components of student market orientation on overall business school performance, esprit de corps, and organizational commitment.

Addressing the third and fourth research objectives, we proceed to examine Pearson correlations between the consequence variables for male department chairs and female department chairs. We first consider results for the overall group of marketing department chairs, then separately for males and females (Table 3). As might be expected, the overall results demonstrate significant correlations for the three consequences of market orientation. Males made up the majority of the respondents and the results for the male respondents were essentially the same as the overall results. Results for the female marketing department chairs were very different. Overall business school performance is not at all correlated with either of the employee consequences, in their perception. Apparently, contrary to results from their male counterparts, females "see" no relationship between overall performance and either esprit de corps or organizational commitment, and may not consider employee responses as much as the males when judging overall business school performance.

TABLE 3
Pearson Correlation Analyses – Consequence Variables
Coefficients (Significance)

MARKETING DEPT. CHAIRS OVERALL	Employee Esprit de Corps	Employee Organizational Commitment
Overall Bus. School Performance	.485 (.000) N=94	.294 (.004) N=95
Employee Esprit de Corps		.793 (.000) N=94
MARKETING DEPT. CHAIRS MALE	Employee Esprit de Corps	Employee Organizational Commitment
Overall Bus. School Performance	.630 (.000) N=71	.425 (.000) N=71
Employee Esprit de Corps		.753 (.000) N=71
MARKETING DEPT. CHAIRS FEMALE	Employee Esprit de Corps	Employee Organizational Commitment
Overall Bus. School Performance	.027 (.902) N=23	.136 (.526) N=24
Employee Esprit de Corps		.908 (.000) N=23

In conclusion, gender is an informant characteristic that impacts perception in judgments of organizational properties. Results of this study indicate that key informant gender should be considered in studies of student market orientation and consequences of student market orientation

within higher education. Specifically, gender is indicated to impact the results for all three of the examined models (consequence variables of overall business school performance, esprit de corps, and organizational commitment). Phillips (1981) was right to raise the concern. In this case, key informants within universities are demonstrated to judge (or subjectively "measure") performance outcomes differently depending on their gender. They also demonstrate differences in judgment of the causal impact of customer orientation, competitor orientation, and interfunctional coordination on the performance outcomes employed in this study.

In spite of the differences outlined above for male and female department chairs, these results echo and underline previous results that suggest a consistent positive impact of market orientation (especially the customer orientation and interfunctional coordination components) on the organization. Male and female department chairs may perceive organizational characteristics differently, or may bring bias into their measures of the characteristics, but market orientation is indicated by both males and females to lead to positive consequences.

TABLE 4
Respondent Demographics

MARKETING DEPT. CHAIRS (95)	Mean (N)	Std. Deviation
Years of Experience at this University	14.38 (89)	8.98
Years of Experience as Department Chair	4.70 (91)	4.10
Highest Degree Completed: 1 Master, 92 Doctorate	-	-
Academic Major: 58 Mktg, 16 Mgmt, 2 Law/Tax, 1 Fin, 3 Econ,	-	-
5 Other Business or MBA, 8 Nonbusiness	-	-
Gender: 71 Males, 24 Females	-	-

STUDY LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The findings of this study can be generalized to others within higher education and also outside of higher education. We urge caution, however, in applying the findings due to the limitations of the sampling frame (AACSB member schools, located in the United States). Also, we surveyed department chairs only. Employees at other levels (vice presidents or vice chancellors for academics, deans, faculty) may have different perceptions. Accordingly, results of the study might be different if examined from one of these other levels of the organization. These limitations present an opportunity for further research; the study could be repeated at other levels of the organization, or in other types of organizations.

Gender may not be the only respondent demographic that impacts the relationships between market orientation and its consequences within higher education. Future studies could examine the possible effect of highest academic degree, major field of study, years of experience,

or length of service at the university. Various respondent demographics may also be found to affect the relationships outside of academia as well.

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A SORRY STATE OF AFFAIRS: THE PROBLEMS WITH FINANCIAL RATIO EDUCATION

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ABSTRACT

This paper examines a large sample of accounting, finance, management, marketing, and financial statement analysis texts. The "Top 20" ratios in business textbooks are identified and discussed. The paper finds two major problems with ratio presentation in business textbooks: formula confusion and naming confusion. Many ratios bearing the same name are presented with different mathematical formulas. Only four of the Top 20 ratios have 100% consensus on the formula. Many ratios also have several commonly used "aliases" or alternate names. These two issues may cause considerable difficulty for both students and practitioners.

INTRODUCTION

A basic understanding of financial ratios and financial analysis is considered by most professors to be a fundamental component of business literacy. This is demonstrated, in part, by the inclusion of financial ratios in a wide variety of business textbooks, including those for financial and managerial accounting, corporate finance, investments, business strategy, marketing research, and financial statement analysis. Business students typically encounter ratios for the first time in an introductory accounting class. They are then periodically re-exposed to them throughout their academic careers, culminating in what is probably a heavy dose of ratios and financial analysis in a capstone business policy or strategy class. Accounting and finance majors probably receive more instruction on ratios than other business students, but all business majors are probably exposed to ratios in at least three classes: accounting, finance, and business policy.

One of the great strengths of ratio analysis is its flexibility. Since there is no governing body in charge of ratios, users of ratios are free to customize or create their own ratios to address their particular analytical needs. This, of course, leads to the existence of many different ratios that each addresses a different issue.

Though flexibility is a strength of ratio analysis, unlimited flexibility has the potential danger of resulting in chaos. Users of financial ratios should have some expectation of consistency in ratio names and calculations. It is reasonable to assume that once a student learns a particular ratio that knowledge can be applied in a variety of situations with little potential for error or confusion. The data, however, show that that is probably not the case. There is little consistency in ratio names or formulas among the business textbooks in the sample. It appears that the textbook authors' choices to exercise their flexibility have resulted in a bewildering array of minor variations in ratio formulas and names.

We have long been aware of anecdotal evidence, primarily in the form of student complaints, that ratios are presented quite differently in different textbooks and classes. Many students have complained about different classes emphasizing completely different sets of ratios. To some extent this is to be expected, as different business disciplines will find different ratios more useful. So this complaint may have little merit. More importantly, many students have complained about two specific problems they have experienced. First, ratio formulas are inconsistent. Many ratios with the same name have different formulas in other textbooks. Second, ratio names are inconsistent. Many ratios with the same formulas have different names in other textbooks.

Financial ratio calculations need to be precise so they have precise meanings to users, consistency between years and comparability among firms. Students, professors, and professionals naturally expect the ratios to have a high level of precision. However, the ratio formulas in the sample suffer from a lack of standardization and precision. Two of the primary student complaints about ratio instruction appear to have some merit. There are many "competing" mathematical formulas for ratios with the same name. Likewise many ratios with identical mathematical formulas have different names. This "formula confusion" and "naming confusion" creates a lack of consistency in financial ratio formulas and in financial ratio terminology that likely creates a lack of precision in financial analysis.

Checking several textbooks from different classes is enough to confirm the basic truth of the student complaints. However, a casual review is insufficient to assess the magnitude of the ratio problem. A certain amount of inconsistency in ratio names and formulas must be expected, due to the flexibility discussed above. However, it is difficult, without a thorough understanding of the issue, to know when we have crossed the line from a reasonable amount of inconsistency into the area of "chaos." Because of the same complaints year after year, we decided that a more thorough study of these issues was appropriate.

One way to illustrate the problem of formula confusion is to compare ratios from a variety of popular investment websites. Many of these websites provide financial ratios of publicly traded companies. However, these websites frequently "disagree" on the values of various ratios. To illustrate this problem, an online search was performed to compare Return on Assets (ROA) numbers for the Coca-Cola Company. We chose ROA because it is a very common ratio that has many different formulas. These ROA numbers for Coca-Cola are shown on Exhibit 1.

EXHIBIT 1
RETURN ON ASSETS
COCA-COLA COMPANY
2/23/2011

Website	Return on Assets
Daily Finance	19.86%
Google Finance	19.51%
MSN Money	19.50%
Morningstar	14.98%
Yahoo Finance	9.60%

These ROA numbers were taken from these popular sites on the same day. The results ranged from 9.60% to 19.86%. The most common formula for ROA is Net Income / Assets [see

Table 8]. However, there are several ways to calculate ROA that can give dramatically different results. The websites do not have to provide the formulas used in calculating the ratios, but Yahoo does provide a glossary for its key ratios. Yahoo calculates ROA as Earnings from Continuing Operations / Average Total Assets, which is a "non-standard" version of ROA. This simple example using a common ratio for a widely followed company shows the real problem of formula confusion.

Because of these problems with inconsistent ratio names and formulas, this paper will attempt to answer the following questions:

1. What ratios are most commonly being taught to business students?
2. How consistently are these ratios being taught, in terms of both formulas and names?
3. To what extent is inconsistency in ratio presentation explained by the business discipline? (Do accounting professors teach ratios differently from finance professors?)

LITERATURE REVIEW

> It is inconceivable that accounting data can be analyzed without transferring it into ratios, in one way or another…(Horrigan, 1965, 568)

Financial ratios were developed to be useful for investors, creditors, and managers. A historical review of the development and the use of financial ratios is helpful to show how these ratios are important to decision makers. This review of the financial ratio literature is provided in three sections. The first section gives a history of the early development of financial ratios. The second section discusses the many uses of financial ratios. The third section attempts to show which ratios are important to professionals.

Early Development of Financial Ratios

The Industrial Revolution in the late 19th century changed business from small firms with owner-managers to large firms with professional managers and stockholders. This drove the need for financial statements and financial analysis. Commercial bank requests for company financial statements that began in the 1870's became widespread by the 1890's. The current ratio was the first financial ratio developed, in the 1890's, and remained the only ratio for several years. The passage of the Federal Income Tax in 1913 and the establishment of the Federal Reserve Board in 1914 were two important events in the United States that increased the demand for and the quality of financial statements. There were two innovations in 1919 that were very influential in expanding the use of financial ratios. The first was the Alexander Wall publication of *Study of Credit Barometrics*, and the second was the DuPont Company's development of its famous ratio triangle (Horrigan, 1968).

Alexander Wall (1919b) was a banker and credit manager who developed a system of seven ratios that he applied to 981 firms that he divided into nine geographic regions and nine industries. Wall's analysis was published as *Study of Credit Barometrics* in the *Federal Reserve Bulletin* in 1919. Because the Federal Reserve Board published the study, it was widely read and highly

influential (Horrigan, 1968). Wall used the term 'barometrics' to show the dynamic nature of the ratios' changing during business cycles the ratios' variation by industry and region.

Wall championed the idea of using more than one single ratio based on a single absolute standard when he questioned the axiom that the current ratio should be at least 2.0. Wall asserted:

> Experience has fixed upon a ratio of two dollars of quick assets for every dollar of quick liabilities. There has, however, been no scientific method used in establishing this ratio or requirement, and in many cases it is neither sound nor economic, and least of all safe as a credit guide. It is, however, a law of comparative analysis and serves a purpose, as it tends to create a margin of safety (Wall 1919a, 132).

Wall's analysis showed wide variability of the current ratio by industry and by geographic region. He argued for the use of relative standards to compare a firm's ratios by industry. Wall termed this industry analysis the "law of averages" to encourage evaluations based on industry criteria rather than absolute standards.

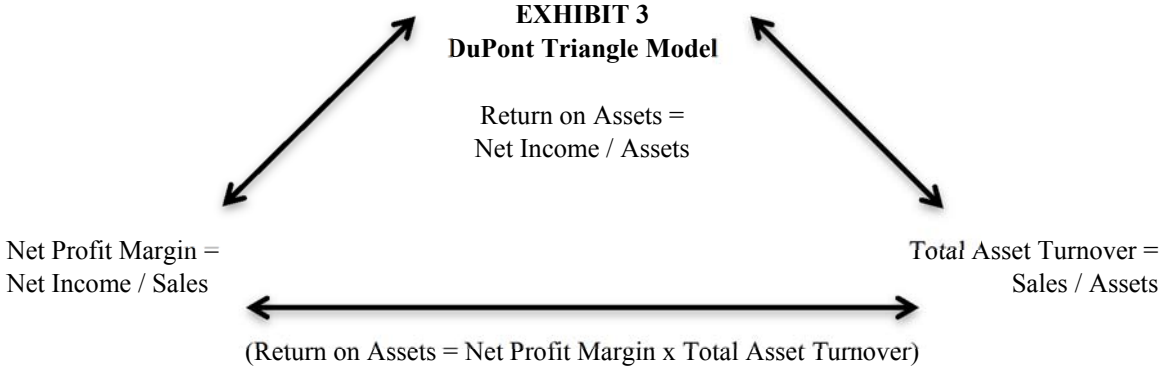
Wall presented his findings by summarizing his seven ratios by industry and by region. He explained how to calculate these ratios, what information they provided and why they were necessary for credit decisions. This study gave credit managers a way to calculate these seven ratios for a firm and compare them to the average for that industry in the proper region (Wall 1919b). Wall was one of the founders and the first secretary-treasurer of the professional trade organization Robert Morris Associates, now known as the Risk Management Association (Kansas Chapter, 2008). His work was continued by RMA as its *Annual Statement Studies* that has remained in continuous publication. The list of seven ratios for 981 financial statements has grown to nineteen ratios for more than 200,000 financial statements (RMA, 2010). The original seven ratios calculated by Wall with his additional eighth ratio added two years later are shown in Exhibit 2.

EXHIBIT 2 **Original *Credit Barometrics* Ratios (Wall 1919b)**
Current Ratio
Receivables to Merchandise
Net Worth to Non-Current Assets
Total Debt to Net Worth
Sales to Receivables
Sales to Merchandise
Sales to Net Worth
Additional Ratio Included in *Analytical Credits* Book (Wall 1921)
Sales to Non-Current Assets

n addition to the Wall study, the second important financial ratio development in 1919 began with the DuPont Company. The company created a triangle model to evaluate its operating results. Specifically, the model decomposes Return on Assets (ROA) into Net Profit Margin and Total Asset Turnover (Barnes, 1987). This model was not initially accepted as widely as the Wall study, but the DuPont model has since become a classic financial analysis technique (Horrigan,

1968). A depiction of the DuPont triangle is shown in Exhibit 3. The Wall study and the DuPont triangle were early financial ratio developments that helped make financial ratios popular for many uses. The following section discusses some of these uses of financial ratios.

EXHIBIT 3
DuPont Triangle Model



Uses of Financial Ratios

Financial ratios are used for several important purposes. Whittington (1980) summarized two basic uses of financial ratios as normative and positive. Normative uses include comparing a firm's ratios to another company or to an industry average. Positive uses include estimation of future variables such as profit margins, returns, debt, and market prices. Positive uses can also include using predictive models for corporate failure, bond ratings, and credit risk.

Normative uses of financial ratios involve two primary functions: financial analysis and business education. Financial analysis involves evaluating a firm's profitability and riskiness and then comparing them to benchmarks such as industry averages. Ratios generally involve a mathematical proportion that allows analysts control for two factors: size and industry (Barnes, 1987). First, ratios control for the size of the firm. Different firms' ratios can be compared even if the firms' sizes are not comparable. For example, a small company with thousands of dollars in debt may have a higher debt ratio than a large company with debt in the millions of dollars. Second, ratios control for industry factors. Industries often have unique characteristics that are seen if a firm's financial ratios are compared to the industry average. It is a maxim that a firm's financial ratios should be compared to its industry averages. Both financial researchers (Lev, 1969) and textbook authors (White, Sondhi, & Fried, 2003) recommend that proper financial analysis should include industry averages. This recommendation is a normative use of ratios.

A second normative use of financial ratios includes their use in business education. Financial ratios are an important tool in business education. Students learn to use financial ratios over several business courses in their college careers. Huefner (2002) argued that financial ratio preparation and analysis is an important part of the very first accounting course. The New York State Society of Certified Public Accountants (NYSSCPA) issued a recommendation of educational goals for CPA candidates (NYSSCPA, 2008). Included in that recommendation was the preparation and interpretation of financial ratios for students preparing for careers as CPAs.

Financial ratios also have positive uses. Positive uses of ratios include estimating certain financial variables or predicting future outcomes such as business failure or bankruptcy. Financial ratios are used in many financial research studies to predict certain outcomes.

One of the well-studied areas of financial ratios is business failure. These studies attempt to identify which companies may experience financial hardship, default, or bankruptcy. These studies began in rudimentary form early in the 20th century. Smith and Winakor (1930) were one of the first researchers to use ratios as predictors of failure. Their study used 21 ratios in the predictive model. One of the weaknesses of their study is that it only included failed firms and not a control group of successful firms. Merwin (1942) also used ratios as failure predictors in what Horrigan (1968, 289) called the "first really sophisticated analysis of ratio predictive power."

The 1960's were a classic era in financial studies to predict business failure. Several of the studies of this era are seminal studies in using financial ratios as failure predictors. Beaver (1966) used financial ratios of failed firms and non-failed firms to predict business failure using a univariate technique. He found certain financial ratios that had predictive power in identifying failed firms. Altman (1968) expanded this into multivariate research by using multiple discriminant analysis (MDA). This research led to the well-known Altman's Z-score model that is widely used in business failure analysis (Krantz, 2010).

Another positive use of ratios is in determining which financial ratios are most useful. Obviously, the utility of these ratios is governed by how they are used. For example, in studying business failure Tamari (1966) found the Current Ratio to be useful because failed firms had lower current ratios than successful firms. Beaver (1966) found that a Cash Flow to Debt ratio was the most useful in his business failure study. Hossari and Rahman (2005) analyzed 53 business failure studies from 1966-2002 and ranked 48 separate ratios. They found that Return on Assets (ROA) was the single most common ratio in all the studies. Pinches, Mingo, and Carruthers (1973) used factor analysis to determine which ratios had long-term stability. They identified not a single ratio but a set of seven ratios that were stable over time.

Many financial ratios have been used in normative uses such as financial analysis. Also many ratios have been used in positive uses such as failure prediction studies. The following section attempts to determine which financial ratios are important to financial analysts.

Using Financial Ratios

To attempt to identify which ratios financial analysts find valuable, Gibson (1987) asked financial analysts which ratios they thought were the most significant in a set of 60 ratios. The participants were asked to provide the level of significance on a scale from 0-9, with 9 being the most significant. The twenty ratios that financial analysts rated the highest are shown in Exhibit 4. This exhibit shows what ratios financial analysts value the most. Of the twenty ratios, eight are related to returns and profitability, including four of the top five ratios. Another eight of the top twenty give information about a firm's liquidity and debt. The other ratios relate to market valuations and operating leverage.

EXHIBIT 4
TOP 20 HIGHEST RATED FINANCIAL RATIOS BY ANALYSTS
(GIBSON, 1987)

Rank	Ratio Name	Significance (0-9)
1	Return on Equity After Tax	8.21
2	Price / Earnings Ratio	7.65
3	Earnings Per Share	7.58
4	Net Profit Margin After Tax	7.52
5	Return on Equity Before Tax	7.41
6	Net Profit Margin Before Tax	7.32
7	Fixed Charge Coverage	7.22
8	Quick Ratio	7.10
9	Return on Assets After Tax	7.06
	Times Interest Earned	7.06
11	Debt to Equity Ratio	7.00
12	Return on Total Invested Capital After Tax	6.88
13	Stock Price / Book Value	6.75
14	Degree of Financial Leverage	6.61
15	Long-Term Debt / Total Invested Capital	6.52
16	Debt / Assets	6.50
17	Total Debt / Total Assets	6.42
18	Return on Total Invested Capital Before Tax	6.40
19	Degree of Operating Leverage	6.36
20	Current Ratio	6.34

THE SAMPLE

This study used a sample of business textbooks to evaluate the state of financial ratio education. The following process was used to accept textbooks and ratios into the sample:

1. The text had to be a current edition available for sale by the publisher.
2. Authors were permitted to have more than one textbook in the sample as long as the texts were for different courses or different audiences. For example, Needles & Powers (2009) *Financial Accounting, 10th ed*. and Needles, Powers, & Crosson (2011) *Principles of Accounting, 11th ed*. are both included in the sample because these books are different versions and not simply different editions of the same text.
3. Generally speaking, electronic copies of the texts had to be available at CourseSmart.Com. A few texts were obtained in hardcopy form from the publisher.
4. The text had to have a clearly defined chapter, section, or appendix on financial ratios. The sections were typically called "Financial Analysis," "Performance Measurement" or some similar name.
5. Many texts have a chapter or section on financial ratios but then also have various other ratios scattered through other chapters. Only ratios appearing in the main chapter, section, or appendix were included in the sample.
6. Ratios or calculations containing any math more sophisticated than simple arithmetic were omitted. Therefore, measures like alpha, beta, and correlation were not defined as ratios for the purposes of this study.
7. Differences in ratio formula format or terminology that did not result in mathematical differences in the ratio were standardized away.
8. Different formulas with the same ratio name were recorded as different "versions" of a ratio. For example, there are four mathematically different versions of the Quick Ratio in the sample.
9. Identical formulas with different names were logged as the same ratio, but the "aliases" were recorded.

The sample included 77 textbooks containing a total of 1427 ratios, an average of 18.53 ratios per textbook. There are 129 unique ratios in the sample. For these purposes, a unique ratio has a unique name and a formula that is mathematically different from all other ratios in the sample. Different versions of the same ratio are not counted as unique. For example, the four different versions of the Quick Ratio only count as one unique ratio since they are all called "Quick Ratio."

Accounting textbooks are the most common in the sample, representing 31 books. There are 27 finance textbooks in the sample. For the sake of comparisons the 13 management and marketing books were combined into one group. Since financial statement analysis courses are frequently taught as a hybrid of finance and accounting, the 6 textbooks for these courses were also placed in a separate category. A complete breakdown of the sample by business discipline can be found below in Table 1.

TABLE 1 DATA SET BY DISCIPLINE					
	ACCOUNTING	FINANCE	MGT/MKT	FSA	TOTAL
TEXTBOOKS	31	27	13	6	77
TEXTBOOK %	40.3%	35.1%	16.9%	7.8%	100.00%
TOTAL RATIOS	573	485	196	173	1427
MEAN	18.48	17.96	15.08	28.83	18.53
MINIMUM	13	11	4	15	4
MAXIMUM	26	28	27	37	37

A complete description of the sample can be found in the appendix to this paper. Table A1 shows a summary of the sample tabulated by publisher and business discipline. Table A2 shows a summary of the sample tabulated by copyright date and business disciple. Tables A3-A6 show the complete sample of textbook titles and authors for each business discipline.

RESULTS

We hoped to find exactly what ratios were being covered most frequently in the classroom. As previously mentioned, we found a total of 129 unique ratios in the sample. However, these ratios were not all present with the same frequency. In fact some ratios were present in almost all of the textbooks, while many show up in only a very small handful of books. Table 2 shows the Top 20 ratios ranked by the frequency with which they appear in the sample.

There are several interesting points in Table 2. First, the current ratio is the most popular ratio in business textbooks, appearing in 74 of the 77 texts in the sample. It is interesting to note that none of the ratios appear in every textbook. Second, very few of the ratios are present in the vast majority of the texts. Only three ratios appear in over 90% of the sample, while only seven of the ratios appear in over 80% of the sample. The bottom few ratios in the top 20 appear in only about 40% of the sample. Third, while this table only shows 20 of the 129 unique ratios in the sample, it actually accounts for over 73% of the total ratios in the sample. The Top 20 ratios account for 1,051 of the 1,427 (73.65%) observations in the sample.

TABLE 2 TOP 20 RATIOS BY FREQUENCY			
RANK	RATIO NAME	FREQUENCY	PERCENT OF BOOKS
1	Current Ratio	74	96.10%
2	Inventory Turnover	72	93.51%
3	Return on Assets (ROA)	70	90.91%
4	Quick Ratio	69	89.61%
5	Times Interest Earned	68	88.31%
6	Net Profit Margin (Return on Sales)	66	85.71%
7	Days Sales Outstanding (DSO)	62	80.52%
8	PE Ratio	61	79.22%
9	Total Asset Turnover	60	77.92%
	Return on Equity (ROE)	60	77.92%
11	Receivables Turnover	51	66.23%
	Debt Ratio	51	66.23%
13	Debt to Equity	49	63.64%
14	EPS	42	54.55%
15	Days Sales in Inventory (DSI)	37	48.05%
	Gross Profit Margin	37	48.05%
17	Dividend Payout	32	41.56%
18	Dividend Yield	31	40.26%
	Fixed Asset Turnover	31	40.26%
20	Market to Book	28	36.36%
	Total Ratios	**1,051**	

The second fact we hoped to explore is the consistency with which ratios are being presented, both in terms of ratio formulas and names. When exploring the issue of formula consistency we decided to focus only on differences that would create mathematical differences in the computed values for the ratios. In other words, we choose to ignore, or more accurately standardize away, any semantic differences in how the formulas were presented. This proved to be a bigger challenge than originally anticipated. Sadly, there is an appalling lack of standardized vocabulary when it comes to financial analysis. To pick a simple example, all of the following phrases have exactly the same meaning to an experienced analyst: Net Income, Net Profit, Net Earnings, After-Tax Profit, Earnings After Tax (EAT), Income After Tax. However, to a novice student each of those phrases may appear to represent a different number or value. In examples like this we simply choose a preferred term, Net Income in this case, and standardized all of the ratios to use that term.

A second issue revolved around terms that were near synonyms, but not perfect synonyms. One example of this would be Sales and Net Sales. For a small subset of firms there is a significant

difference between those two accounts, but for most firms they can be used interchangeably. There did not seem to be any great logic behind a text choosing to use Sales vs. Net Sales. Furthermore there was not a single ratio in the sample where both terms were used. This led us to conclude that we could standardize away the possible difference between them. So for our purposes, the two ratios Net Income / Sales and Net Income / Net Sales were treated as two observations of the same ratio.

A counter-example of near synonyms that we choose to treat as separate items is Earnings Before Interest and Taxes (EBIT) and Operating Profits. Many texts appear to use these terms interchangeably. However the mathematical difference between the two terms, non-operating items, can be large and economically significant for many firms. Therefore we treated those terms as separate entities. For example Operating Profit / Total Assets and EBIT / Total Assets both show up in the sample as Return on Assets (ROA). We treated those two formulas as two separate versions of ROA rather than two observations of the same version of ROA.

A third issue arose involving how to classify ratios when different books used the same name for different formulas or used different names for the same formula. For example, the ratio Net Income / Total Assets is known by several names in the sample, two of which are Return on Assets and Return on Total Capital. This would imply that Total Assets and Total Capital have the same value. In fact, some textbooks seemed to use these terms interchangeably while others went to great lengths to explain the difference between the two. (The most common explanation is that Total Capital does not include Current Liabilities. So, Total Capital = Long-Term Debt + Equity). Some texts even had one formula for Return on Assets and another for Return on Total Capital. So, if a text gave the name Return on Total Capital to the formula Net Income / Total Assets and did not have another ratio called Return on Assets, we classified this as an observation of Return of Assets and noted the "alias" Return on Total Capital. If a text gave the name Return on Total Capital to a formula other than Net Income / Total Assets it was recorded as Return on Total Capital, not Return on Assets. However, if a book gave the name Return on Assets to a completely different formula, like EBIT / Average Total Assets, this was recorded as a separate version of Return on Assets.

Beyond the differences in terminology described above, there were also significant challenges due to the different methods of mathematical presentation of the ratios. The differences in terminology and presentation were significant enough that we sometimes had to put pencil to paper and work out examples to determine if two formulas were mathematically equivalent or not. In short, this process of trying to compare the textbooks in detail turned out to be more complex and to involve much more judgment we had originally anticipated. The end result of this process has been summarized in Tables 3 and 4 below.

For the sake of simplicity Table 3 limits itself to considering the same 20 ratios from Table 2. The ratios have been re-sorted so they are no longer in order of frequency. They are now in order of the "consensus" about how to define them. The table shows the most common formula for the ratios, the degree of consensus among the textbooks about how to define the ratios, and the number of different versions for each ratio. For these purposes the "consensus" is defined as the percentage of the textbooks containing the ratio that use the most popular version of the ratio formula. For example, we know from Table 2 that 73 textbooks contain the Current Ratio. Of these 73 books, all define the Current Ratio exactly the same way, as Current Assets / Current Liabilities.

We know from Table 2 that 69 textbooks contain the ratio Return on Assets. Table 3 tells us that of those 69 textbooks, only about 40% of them define ROA with the most popular formula, Net Income / Total Assets, and that there are eleven mathematically different versions of ROA in the sample.

TABLE 3
TOP 20 RATIOS BY DEGREE OF CONSENSUS

RANK	RATIO NAME	RATIO FORMULA	PERCENT	TOTAL VERSIONS
1	Current Ratio	Current Assets / Current Liabilities	100.00%	1
	Gross Profit Margin	Gross Profit / Sales	100.00%	1
	Dividend Yield	Dividends Per Share / Market Price	100.00%	1
	Market to Book	Market Price / Book Value	100.00%	1
5	Debt Ratio	Debt / Assets	96.00%	3
6	PE Ratio	Market Price / EPS	95.08%	4
7	Net Profit Margin (Return on Sales)	NI / Sales	90.91%	3
8	Debt to Equity	Debt / Equity	87.76%	3
9	Times Interest Earned	EBIT / Interest Expense	82.35%	4
10	Fixed Asset Turnover	Sales / Fixed Assets	73.33%	2
11	Earnings Per Share (EPS)	(NI – Preferred Dividends) / WAvg Common Shares	64.29%	2
12	Total Asset Turnover	Sales / Assets	59.32%	4
13	Return on Equity (ROE)	NI / Equity	57.63%	5
14	Dividend Payout	Dividends Per Share / EPS	56.25%	3
15	Quick Ratio	(Cash + AR + Mkt Sec) / Current Liabilities	49.28%	4
16	Receivables Turnover	Sales / Average AR	46.00%	6
17	Days Sales in Inventory (DSI)	365 / Inventory Turnover	45.95%	5
18	Days Sales Outstanding (DSO)	365 / Receivables Turnover	45.90%	5
19	Inventory Turnover	COGS / Average Inventory	44.44%	4
20	Return on Assets (ROA)	NI / Assets	40.00%	11

Minimum	1	
Maximum	11	
Mean	3.60	
Median	3.50	
Mode	4.00	

AR = Accounts Receivable
COGS = Cost of Goods Sold
EBIT = Earnings Before Interest and Taxes
EPS = Earnings Per Share
Mkt Sec = Marketable Securities
NI = Net Income
WAvg = Weighted Average

There are several interesting observations about Table 3. First, only four ratios enjoy 100% consensus on their mathematical formulas from the textbooks. This certainly gives a bit of credence to student complaints about different formulas in different books. Second, the twelve different versions of Return on Assets are fairly compelling evidence of chaos in defining this ratio. Third, the average, median, and mode for the number of different versions of each ratio are all very near 4.0. The fact that even the most commonly used ratios have about four mathematically different versions on average is somewhat alarming. This also gives credence to student complaints about ratio inconsistency.

Table 4 is not a simple re-sort of Tables 2 and 3. Rather, it shows all of the ratios in the sample that have at least three different names. This cutoff of three names was simply for the sake of brevity. Many more ratios had two different names. A total of 16 ratios have at least three names, with four ratios having five names, four ratios having four names, and eight ratios having three names. The process used to analyze the sample only classified a ratio name as an alias if it had the same formula, after standardizing terminology, as a ratio with a different name. In other words, there are ratios in the sample called Debt to Equity, Book Debt to Equity, and Liabilities to Stockholders' Equity that all give mathematically identical answers. This "naming confusion" problem illustrated in Table 4 helps explain some of the difficulties students have in learning and using ratios.

The third issue we wanted to explore is whether or not there are consistent differences in presentation of ratios among textbooks from the different business disciplines. In other words, to what extent is the variability we see in ratio formulas simply because accounting textbooks are consistently different from finance textbooks and finance textbooks are consistently different from management textbooks, etc. Our original hypothesis, based on anecdotal evidence, was that there was probably a good bit of difference between finance and accounting textbooks. We did not have any real opinion on how management, marketing, or financial statement analysis books would compare to the finance and accounting texts. In order to examine this issue, we constructed detailed tables for each of the Top 20 ratios. These tables each show every version of the ratio and the frequency with which that version appears in each category of textbook. We will discuss the detail tables for three specific ratios below, and attempt to draw some general conclusions from them. The remaining detail tables may be found in the appendix. (We did not include the detail tables for the ratios with 100% consensus, as they are completely uninteresting.)

The most frequent cause of inconsistency in ratio formulas in the sample has to do with the philosophy of the authors in comparing income statement accounts to balance sheet accounts. The matching principle of accounting tries to match revenues with the expenses that generate them. A matching problem occurs when comparing income statement and balance sheet numbers. This is because the income statement shows results from a period of time (flow numbers), while the balance sheet shows numbers from a specific point in time (stock numbers). When comparing income statement numbers to balance sheet numbers, averaging the balance sheet numbers preserves the matching principle. It is very clear in the sample that the accounting texts are far more likely to use this averaging approach than texts from the other disciplines. Eight of the top 20 ratios involve comparing income statement accounts to balance sheet accounts. The issue of whether or not to average the balance sheet account is a major source of inconsistency for all eight of those ratios.

TABLE 4
TOP 16 RATIOS FOR NAMING CONFUSION

NAME	TOTAL NAMES	ALIASES
Days Sales Outstanding (DSO)	5	Days Sales in Receivables, Average Collection Period (ACP), Days Sales Uncollected, Collection Period
Cash Conversion Cycle	5	Operating Cycle, Net Trade Cycle, Cash to Cash Operating Cycle, Cash to Cash Period
Equity Multiplier	5	Leverage Ratio, Financial Leverage Ratio, Financial Structure Ratio, Assets to Equity
Days Payables Outstanding (DPO)	4	Average Payment Period, Payables Period, Days Purchases in Payables
Debt Ratio	4	Total Debt to Total Assets, Debt to Total Capital, Total Debt Ratio
Net Profit Margin	4	Profit Margin, Return on Sales (ROS), Profit Margin on Sales
Return on Assets (ROA)	4	Return on Total Assets, Rate Earned on Total Assets, Return on Total Capital
Operating Cash Flow to Income	4	Cash Flow Yield, Quality of Income, Cash Flow from Operations to Income
Operating Cash Flow to Total Assets	3	Cash Flow to Assets, Cash Return on Assets
Return on Equity (ROE)	3	Return on Stockholders' Equity, Rate Earned on Stockholders' Equity
Long-Term Debt Ratio	3	Long-Term Debt to Total Capital, Debt to Total Capital
Days Sales in Inventory (DSI)	3	Average Age of Inventory, Days Inventory Held
Total Asset Turnover	3	Turnover Ratio, Net Sales to Assets
Fixed Asset Turnover	3	Sales to Fixed Assets, PP&E Turnover
Times Interest Earned	3	Interest Coverage Ratio, Number of Times Interest Charges are Earned
Debt to Equity	3	Book Debt to Equity, Liabilities to Stockholders' Equity

Days Sales in Inventory (DSI) is a good example of the impact the "averaging issue" can have on a ratio's consistency. Table 5 shows the detail information for DSI. Notice that the first three versions of DSI in the list, comprising about 95% of the observations, are identical except in their treatment of the averaging issue. The majority of the accounting texts (14/20) average the inventory in the denominator. The clear majority of the finance, management and marketing texts (9/12) do not average the denominator, using ending inventory instead. One author chooses not to average, but uses beginning inventory instead of ending inventory in the denominator. This is a pattern that shows up over and over again in the sample: accounting texts have a clear preference for averaging while finance, management, and marketing texts do not. Interestingly, the Financial

Statement Analysis texts are virtually split down the middle on the issue, showing no clear preference for averaging or not averaging. The other two versions of DSI are caused by minor changes that are unrelated to the averaging issue. Notice that each of these versions only appears one time in the sample. This is another pattern in the sample. Many of the ratio versions in the sample have only one or two observations. In fact every single ratio in the sample with more than three versions has at least one version with only one or two observations.

TABLE 5
DAYS SALES IN INVENTORY (DSI)

		Accounting	Finance	Mgt/Mkt	FSA	Total	Percent
1	365 / (COGS / Inventory)	6	5	4	2	17	45.95%
2	365 / (COGS / Average Inventory)	14	1		2	17	45.95%
3	365 / (COGS / Beginning Inventory)		1			1	2.70%
4	365 / (Sales / Inventory)		1			1	2.70%
5	360 / (COGS / Inventory)				1	1	2.70%
		20	**8**	**4**	**5**	**37**	**100.00%**

COGS = Cost of Goods Sold

A second cause of inconsistency in ratio formulas in the sample has to do with the use of near, but not quite, synonyms in the ratio formulas. Examples of this include using Operating Profit in lieu of EBIT or Common Equity in lieu of Stockholders' Equity. This creates ratios that will have similar values most of the time, but could potentially be very different some of the time. The Times Interest Earned Ratio is a good example of this.

TABLE 6
TIMES INTEREST EARNED

		Accounting	Finance	Mgt/Mkt	FSA	Total	Percent
1	EBIT / Interest Exp	23	23	6	4	56	82.35%
2	Operating Profit / Interest Exp	5	2	2	1	10	14.71%
3	(Pretax Operating Profit + Interest Exp) /Interest Exp	1				1	1.47%
4	Recurring Earnings / Interest Exp				1	1	1.47%
		29	**25**	**8**	**6**	**68**	**100.00%**

EBIT = Earnings Before Interest and Taxes, Interest Exp = Interest Expense

The difference between EBIT and Operating Profit is non-operating items, which is usually assumed to be zero in classroom examples but can be very significant for real companies. It is difficult to say in this case whether the authors were assuming non-operating items away, in which case the first two versions would give identical answers, or whether they intended to differentiate

between EBIT and Operating Profit. Our basic methodology in situations like this was to take the formula at face value. In other words, we assumed that Operating Profit meant Operating Profit, not EBIT. Notice again that the third and fourth versions of TIE only show up one time in the sample.

TABLE 7
NET PROFIT MARGIN (RETURN ON SALES)

		Accounting	Finance	Mgt/Mkt	FSA	Total	Percent
1	NI / Sales	25	19	10	6	60	90.91%
2	EACS / Sales		5			5	7.58%
3	(NI + Interest Exp (1-Tax Rate)) / Sales	1				1	1.52%
		26	**24**	**10**	**6**	**66**	**100.00%**

EACS = Earnings Available to Common Shareholders = (Net Income – Preferred Dividends),
Interest Exp = Interest Expense, NI = Net Income

A third cause of inconsistency in ratio formulas in the sample has to do with the authors trying to measure slightly different things, but using the same name for the measurement. Net Profit Margin is a good example of this. Table 7 shows the detail information for Net Profit Margin. Note that over 90% of authors prefer version 1, Net Income / Sales, which is by far the best known and most widely used version of the ratio. However, a significant minority of the finance texts (5/23) prefer version 2, Earnings Available to Common Shareholders (or EACS) / Sales. The difference between Net Income and EACS is preferred dividends. (EACS = Net Income – Preferred Dividends). Net Income is a broader measure since it includes money that can be claimed by all shareholders, both common and preferred. EACS is claimable only by common shareholders. Clearly Net Income and EACS are two measures that are closely related, yet significantly different, at least for firms with preferred shareholders. EACS / Sales is certainly a useful measure for firms with preferred shareholders, but it is measuring something different from Net Income / Sales. EACS / Sales might more accurately be called Common Shareholders Net Profit Margin or something similar, yet none of the authors in the sample were that descriptive, choosing instead to use Profit Margin or Net Profit or Return on Sales, all common aliases for Net Income / Sales. This pattern of making a very useful, but perhaps situational, variation of the "standard" version of a ratio, but giving it the same name is quite common in the sample.

Table 8 shows the detail information for Return on Assets (ROA). ROA exhibits all three of the problems with ratio consistency discussed above. Notice that several versions of the ratio are identical except for the averaging issue. Also note that we see both the "synonym" issue (EBIT and Operating Profit) and the "slightly different" issue (Net Income and EACS) represented. Further, note that we have a "quite a bit different" issue with some of these versions. The numerators feature pre-tax values as large as Operating Profit and after-tax numbers as small as EACS. This will result in potentially vast differences between the calculated values of the various versions. Finally, note that two of the versions only appear once in the sample while another three only appear twice in the sample. For whatever reason, ROA is certainly the ratio where authors

have most chosen to exercise their flexibility. For a more complete discussion of the many different ROA formulas, see Jewell and Mankin (2011).

TABLE 8
RETURN ON ASSETS

		Accounting	Finance	Mgt/Mkt	FSA	Total	Percent
1	NI / Assets	3	16	7	2	28	40.00%
2	NI / Average Assets	9	1		1	11	15.71%
3	(NI + Int Exp) / Average Assets	8				8	11.43%
4	(NI + Int Exp (1-Tax Rate)) / Average Assets	6			1	7	10.00%
5	EACS / Assets		5			5	7.14%
6	EBIT / Average Assets	1	1		1	3	4.29%
7	Operating Profit / Assets		1	1		2	2.86%
8	NI + Int Exp / Assets			2		2	2.86%
9	(NI + Int Exp (1-Tax Rate)) / Assets	1	1			2	2.86%
10	EBIT / Assets			1		1	1.43%
11	EBT / Assets			1		1	1.43%
		28	**25**	**12**	**5**	**70**	**100.00%**

EACS = Net Income – Preferred Dividends, EBIT = Earnings Before Interest and Taxes, EBT = Earnings Before Taxes, Int Exp = Interest Expense, NI = Net Income

CONCLUSION AND RECOMMENDATION

Professionals and business students use financial ratios extensively. Professors and employers expect students to learn to use and interpret financial ratios in their business courses and throughout their careers. However, there is currently a barrier to learning financial ratios caused by the use of different names and different formulas for the same ratio. An experienced professional may already have a preferred set of standardized ratios or may easily adjust to differences in names or formulas. However, this may not be the case with business students moving through a typical business curriculum. For these students subtle changes in names or formulas may be a source of frustration and an impediment to learning.

There is a certain amount of tension in the world of ratios between the flexibility analysts and authors have in creating their own ratios and the potential for confusion that a myriad of different ratio names and formulas can cause. It is difficult to fully assess the true costs and benefits of flexibility in ratio construction. This study attempts to illustrate some of the costs of unconstrained flexibility, or the lack of ratio standardization, by highlighting the two issues of naming confusion and formula confusion in financial ratio education. These issues are a problem because financial ratios need to be precise and consistent in order to avoid confusion and improve understanding of financial results.

The solution to the problems of naming confusion and formula confusion is quite simple in theory, but quite complex in practice. Both problems could be largely eliminated by simply having analysts and authors agree on more descriptive names for the various ratios. No actual flexibility would be lost; authors would simply have to use unique names for mathematically different ratios, rather than recycling existing ratio names. For example the ratio Net Income / Total Assets would retain the name Return on Assets, but the ratio Net Income / Average Total Assets could be named Return on Average Assets and the ratio EACS / Total Assets could be named Common Shareholders' Return on Assets. Similar "common sense" naming systems could in theory be devised for all of the ratios with competing formulas and names. Of course the practical impediment to this solution is that there is no simple way to achieve consensus on the best name for each ratio formula. Even if a set of descriptive and less confusing ratio names could be devised there is no easy way to insure compliance with the naming system.

The solution described above is not likely to happen anytime soon. In the mean time professors should take whatever steps they can in the classroom to make ratio education less confusing for students.

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APPENDIX

TABLE 1A
TEXTBOOKS BY PUBLISHER

PUBLISHER	ACCOUNTING	FINANCE	MGT/MKT	FSA	TOTAL	PERCENT
Cengage	13	9	2	2	26	33.8%
McGraw-Hill	8	9	4	1	22	28.6%
Prentice Hall	4	5	6	1	16	20.8%
Wiley	5	2	1	1	9	11.7%
Cambridge Business	1			1	2	2.6%
Textbook Media		2			2	2.6%
TOTAL	**31**	**27**	**13**	**6**	**77**	**100%**

TABLE 2A
TEXTBOOKS BY COPYRIGHT DATE

DATE	ACCOUNTING	FINANCE	MGT/MKT	FSA	TOTAL	PERCENT
2011	4	4	2	1	11	14.3%
2010	8	7	7	1	23	29.9%
2009	7	8	1		16	20.8%
2008	4	7	1	1	13	16.9%
2007	6	1	2	2	11	14.3%
2006 or earlier	2			1	3	3.9%
TOTAL	**31**	**27**	**13**	**6**	**77**	**100%**

TABLE 3A
ACCOUNTING TEXTBOOKS

AUTHORS	TITLE	DATE	PUBLISHER
Ainsworth	Introduction to Accounting: An Integrated Approach, 6ed	2011	McGraw-Hill
Albrecht, Stice, Stice	Financial Accounting, 10ed	2008	Cengage
Anthony, Hawkins, Merchant	Accounting: Text and Cases, 12ed	2007	McGraw-Hill
Breitner, Anthony	Core Concepts of Accounting, 10ed	2006	Prentice Hall
Brewer, Garrison, Noreen	Introduction to Managerial Accounting, 4ed	2008	McGraw-Hill
Edmonds, Edmonds, Olds, McNair, Ysay, Schneider, Milam	Fundamental Financial and Managerial Accounting, 1ed	2007	McGraw-Hill
Harrison, Horngren, Thomas	Financial Accounting, 8ed	2010	Prentice Hall
Hartgraves, Morse, Davis	Managerial Accounting, 5th ed	2009	Cambridge Business
Horngren, Harrison, Oliver	Accounting, 8ed	2009	Prentice Hall
Horngren, Harrison, Oliver	Financial and Managerial Accounting, 2ed	2009	Prentice Hall
Ingram, Albright	Financial Accounting, 6ed	2007	Cengage
Kieso, Weygandt, Warfield	Intermediate Accounting, 12ed	2008	Wiley
Kimmel	Financial Accounting: Tools for Business Decision Making, 5ed	2009	Wiley
King, Lembke, Smith	Financial Accounting: A Decision-Making Approach	2001	Wiley
Libby, Libby, Short	Financial Accounting, 5ed	2007	McGraw-Hill
Marshall, McManus, Viele	Accounting: What the Numbers Mean, 7ed	2007	McGraw-Hill
Needles, Powers	Financial Accounting, 10ed	2009	Cengage
Needles, Powers, Crosson	Principles of Accounting, 11ed	2011	Cengage
Nikolai, Bazley, Jones	Intermediate Accounting, 11ed	2010	Cengage
Porter, Norton	Financial Accounting: Impact on Decision Makers, 6ed	2010	Cengage
Porter, Norton	Using Financial Accounting Information: The Alternatives to Debits & Credits, 6ed	2010	Cengage
Reeve, Warren, Duchac	Accounting: Using Excel for Success	2011	Cengage
Rich, Jones, Hietger, Mowen, Hansen	Cornerstones of Financial & Managerial Accounting, 1ed	2009	Cengage
Stice, Stice, Skousen	Intermediate Accounting, 17ed	2010	Cengage
Stickney, Weil, Schipper, Francis	Financial Accounting, An Introduction to Concepts, Methods, and Uses, 13ed	2010	Cengage
Warren	Survey of Accounting	2011	Cengage
Warren, Reeve, Duchac	Financial and Managerial Accounting, 10ed	2009	Cengage
Weygandt, Kieso, Kimmel	Accounting Principles, 8ed	2008	Wiley
Weygandt, Kieso, Kimmel	Financial Accounting, 7ed	2010	Wiley
Wild, Larson, Chiappetta	Fundamental Accounting Principles, 18ed	2007	McGraw-Hill
Williams, Haka, Bettner, Carcello	Financial and Managerial Accounting, 15ed	2010	McGraw-Hill

TABLE 4A FINANCE TEXTBOOKS			
AUTHORS	TITLE	DATE	PUBLISHER
Berk, DeMarzo	Corporate Finance: The Core	2009	Prentice Hall
Berk, DeMarzo, Harford	Fundamentals of Corporate Finance	2009	Prentice Hall
Besley, Brigham	Essentials of Managerial Finance, 14ed	2008	Cengage
Block, Hirt	Fundamentals of Investment Management, 9ed	2008	McGraw-Hill
Block, Hirt, Danielson	Foundations of Financial Management, 13ed	2009	McGraw-Hill
Bodie	Essentials of Investments, 8ed	2010	McGraw-Hill
Booth, Cleary	Introduction to Corporate Finance, Canadian ed	2008	Wiley
Brealey, Myers, Allen	Principles of Corporate Finance, 10ed	2011	McGraw-Hill
Brigham, Daves	Intermediate Financial Management, 10ed	2010	Cengage
Brigham, Ehrhardt	Financial Management: Theory and Practice, 12ed	2008	Cengage
Brigham, Houston	Fundamentals of Financial Management, 12ed	2009	Cengage
Brooks	Financial Management: Core Concepts	2010	Prentice Hall
Cornett, Adair, Nofsinger	Finance: Application and Theory, 1ed	2009	McGraw-Hill
Gallagher	Financial Management, 5ed	2009	Textbook Media
Gitman, Joehnk	Fundamentals of Investing, 10ed	2008	Prentice Hall
Graham, Smart, Megginson	Corporate Finance, 3ed	2010	Cengage
Hawawini, Viallet	Finance for Executives: Managing for Value Creation, 3ed	2007	Cengage
Hirschey, Nofsinger	Investments, 2ed	2010	McGraw-Hill
Jordan, Miller	Fundamentals of Investments, 5ed	2009	McGraw-Hill
Keown, Martin, Petty	Foundations of Finance, 7ed	2011	Prentice Hall
Lasher	Practical Financial Management, 6ed	2011	Cengage
Mayo	Investments: An Introduction, 10ed	2008	Cengage
Megginson, Smart	Introduction to Corporate Finance, 2ed	2009	Cengage
Melicher, Norton	Introduction to Finance: Markets, Investments, and Financial Management, 13ed	2008	Wiley
Ross, Westerfield, Jaffe	Corporate Finance, 9ed	2010	McGraw-Hill
Ross, Westerfield, Jordan	Essentials of Corporate Finance, 7ed	2011	McGraw-Hill
Werner, Stoner	Modern Financial Managing: Continuity and Change, 3ed	2010	Textbook Media

TABLE 5A
MANAGEMENT AND MARKETING

AUTHORS	TITLE	DATE	PUBLISHER
Bamford, West	Strategic Management: Value Creation, Sustainability, and Performance, 1ed	2010	Cengage
Barney, Hesterly	Strategic Management and Competitive Advantage, 3ed	2010	Prentice Hall
Coulter	Strategic Management in Action, 5ed	2010	Prentice Hall
David	Strategic Management: Concepts and Cases, 13ed	2011	Prentice Hall
de Kluyver	Strategy: A View from the Top	2009	Prentice Hall
Dess, Lumpkin, Eisner	Strategic Management: Creating Competitive Advantages, 5ed	2010	McGraw-Hill
Gamble, Thompson	Essentials of Strategic Management, 2ed	2011	McGraw-Hill
Grant	Contemporary Strategy Analysis, 7ed	2010	Wiley
Harrison, St. John	Foundations in Strategic Management	2010	Cengage
Kerin, Peterson	Strategic Marketing Problems: Cases and Comments, 11ed	2007	Pearson
Peter, Donnelly	Marketing Management: Knowledge and Skills, 8ed	2007	McGraw-Hill
Thompson, Strickland, Gamble	Crafting and Executing Strategy: The Quest for Competitive Advantage, 16ed	2008	McGraw-Hill
Wheelen, Hunger	Strategic Management and Business Policy: Achieving Sustainability, 12ed	2010	Prentice Hall

TABLE 6A
FINANCIAL STATEMENT ANALYSIS TEXTBOOKS

AUTHORS	TITLE	DATE	PUBLISHER
Easton, McAnally, Fairfield, Zhang, Halsey	Financial Statement Analysis & Valuation, 2ed	2010	Cambridge Business
Fraser, Ormiston	Understanding Financial Statements, 9ed	2007	Prentice Hall
Gibson	Financial Reporting & Analysis, 12ed	2011	Cengage
Palepu, Healy	Business Analysis & Valuation, 4ed	2008	Cengage
White, Sondhi, Fried	The Analysis and Use of Financial Statements	2003	Wiley
Wild , Subramanyam, Halsey	Financial Statement Analysis, 9ed	2007	McGraw-Hill

TABLE 7A
INVENTORY TURNOVER

	ACCOUNTING	FINANCE	MGT/MKT	FSA	TOTAL	
COGS / Average Inventory	26	2	1	3	32	44.44%
COGS / Inventory	5	14	4	2	25	34.72%
Sales / Inventory		8	5	1	14	19.44%
COGS / Beg Inventory		1			1	1.39%
	31	**25**	**10**	**6**	**72**	**100.00%**
COGS = Cost of Goods Sold						

TABLE 8A QUICK RATIO							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	(Cash + AR + Mkt Sec) / Current Liabilities	24	5		5	34	49.28%
2	(Current Assets – Inventory) / Current Liabilities	1	17	11	1	30	43.48%
3	(Cash + AR) / Current Liabilities	1	3			4	5.80%
4	(Current Assets - Inventory – Ppd) / Current Liabilities	1				1	1.45%
		27	**25**	**11**	**6**	**69**	**100.00%**
AR = Accounts Receivable, Ppd = Prepaid Expenses							

TABLE 9A DAYS SALES OUTSTANDING							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	365 / (Sales / AR)	5	15	6	2	28	45.16%
2	365 / (Sales / Average AR)	18	1	1	2	22	35.48%
3	365 / (Credit Sales / AR)	2	5	2		9	14.52%
4	360 / (Sales / AR)		1		1	2	3.23%
5	365 / (COGS / Beg Inventory)		1			1	1.61%
		25	**23**	**9**	**5**	**62**	**100.00%**
AR = Accounts Receivable, COGS = Cost of Goods Sold							

TABLE 10A PRICE / EARNINGS RATIO							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	Market Price / EPS	25	24	7	2	58	95.08%
2	Market Cap / Net Income	1				1	1.64%
3	Average Market Price / EPS	1				1	1.64%
4	Market Price / Diluted EPS				1	1	1.64%
		27	**24**	**7**	**3**	**61**	**100.00%**
EPS = Earnings Per Share							

TABLE 11A TOTAL ASSET TURNOVER							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	Sales / Assets	6	21	7	2	36	60.00%
2	Sales / Average Assets	17	2		3	22	36.67%
3	Sales / Beginning Assets		1			1	1.67%
4	Sales / (Average Assets – LT Inv)	1				1	1.67%
		24	**24**	**7**	**5**	**60**	**100.00%**
LT Inv = Long-Term Investments							

TABLE 12A RETURN ON EQUITY							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	NI / Equity	6	16	11	2	35	58.33%
2	NI / Average Equity	13	2		3	18	30.00%
3	EACS / Common Equity		3			3	5.00%
4	EACS / Average Equity	2				2	3.33%
5	NI / Common Equity		2			2	3.33%
		21	**23**	**11**	**5**	**60**	**100.00%**
EACS = Net Income – Preferred Dividends, NI = Net Income							

TABLE 13A RECEIVABLES TURNOVER							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	Sales / Average AR	21			2	23	45.10%
2	Sales / AR	2	8	1	2	13	25.49%
3	Credit Sales / AR		3	5		8	15.69%
4	Credit Sales / Average AR	4	1			5	9.80%
5	Sales / Beginning AR		1			1	1.96%
6	Sales / Average Gross AR				1	1	1.96%
		27	**13**	**6**	**5**	**51**	**100.00%**
AR = Accounts Receivable							

TABLE 14A DEBT RATIO							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	Debt / Assets	17	19	10	3	49	96.08%
2	LT Debt / (LT Debt + Equity)	1				1	1.96%
3	Debt / (LT Debt + Equity)				1	1	1.96%
		18	**19**	**10**	**4**	**51**	**100.00%**
LT Debt = Long-Term Debt							

TABLE 15A DEBT TO EQUITY							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	Debt / Equity	19	8	10	6	43	87.76%
2	LT Debt / Equity	1	4			5	10.20%
3	(LT Debt – Deferred Taxes) / Equity	1				1	2.04%
		21	**12**	**10**	**6**	**49**	**100.00%**
LT Debt = Long-Term Debt							

TABLE 16A EARNINGS PER SHARE							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	EACS / WAvg Common Shares	20	2	2	3	27	64.29%
2	NI / WAvg Common Shares	6	5	3	1	15	35.71%
		26	**7**	**5**	**4**	**42**	**100.00%**
EACS = Net Income – Preferred Dividends, WAvg = Weighted Average							

TABLE 17A DIVIDEND PAYOUT							
		Accounting	Finance	Mgt/Mkt	FSA	Total	
1	Dividend Per Share / EPS	8	5	4	1	18	56.25%
2	Common Dividends / NI	8	2		3	13	40.63%
3	Dividend Per Share / Diluted EPS				1	1	3.13%
		16	**7**	**4**	**5**	**32**	**100.00%**
EPS = Earnings Per Share, NI = Net Income							

USING EXCELS PIVOT TABLE FUNCTION FOR VISUAL DATA ANALYSIS OF EXAM RESULTS: A SUPPLEMENTAL PROCEDURE TO CLASSICAL TEST THEORY

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ABSTRACT

This paper demonstrates how Excel's Pivot Table Function can be used to visually examine electronic exam results. Pivot tables allow users to visually analyze data such as exam results effectively and efficiently. The paper provides a short discussion of Classical Test Theory statistics such as Item Difficulty and Item Discrimination. Examples are then presented where exam questions seemed to perform poorly when analyzed using only the statistical measurements. When the same examples are explored using visual analysis from Excel's Pivot Table as a supplement to the statistical methods the results are better understand.

Keywords: Item Analysis, Assessment, Pivot-Table, Item Discrimination, Item Difficulty, Classical Test Theory

INTRODUCTION

In this paper a graphical method of analyzing exam question results using Excel's Pivot Table function is proposed. We argue that visual analysis of exam data should be used as a supplement to the traditional statistical approaches of item analysis. Performing detailed item analyses on exam question responses allows instructors to understand not only how well students are grasping the material on the exam as a whole but also to understand how well each question is measuring the student's knowledge. However, as Crisp & Palmer (2007) and Vyas & Supe (2008) point out, many instructors are not specialists in educational theory or the discipline of assessment and are limited in the statistical training needed to analyze assessment results. Therefore, it is common practice for many instructors to create an exam, grade it, report the students' scores and then give the exam no further thought. In other words, validation of exams and their results tend to be based around 'academic acumen rather than quantitative evidence' (Crisp & Palmer, 2007; Knight, 2006; Price, 2005). Even when exam item analyses are conducted often times the

measures may be misunderstood. Course management systems such as Blackboard now offer exam item analysis measures such as Item Discrimination and Item Difficulty. These measures can easily be misinterpreted if instructors are not aware of how they are calculated and their sensitivity to the data being measured.

Graphically analyzing electronic exam results gives instructors a method to cross-validate traditional quantitative analyses. Ackerman (1996) illustrated how graphical analyses enhanced interpretations of item responses. Performing an analysis of exam results using Excel's Pivot Table function allows professors to evaluate each question's overall effectiveness and to identify questions where students have performed poorly. The graphical results provided by the pivot table provides an opportunity for instructors to recognize those questions that might need to be revised or thrown out or that need further review before being used in future assessments. The pivot table simultaneously presents students' overall performance on the test, question performance, and the student performance on each test question. This visual exam analysis is intended to complement the traditional quantitative item statistics provided by Blackboard and/or other standard electronic exam result analysis software.

PIVOT TABLES FOR DATA VISUALIZATION ANALYSIS

In this paper we propose using a pivot table and conditional formatting to conduct an exam item analysis graphically. A pivot table is a data visualization tool that is included in most spreadsheet programs such as Microsoft Excel. Pivot tables allow for multidimensional representation of data as can be seen in Figure 1 below. Figure 1 demonstrates the analysis of exam data. The itemized data was downloaded from Blackboard into an Excel spreadsheet. In Figure 1, each student is represented by a row in the table and each question from the exam is represented by a column in the table. Each student's performance on a particular question can be found at the intersection of each column and row. In the example below, each question was worth two points and any student who answered the question correctly would have a "2" at the intersection of the column and row corresponding with that student's identification number.

Pivot tables allow users to select, view, and sort a large amount of data in a short period of time. In Figure 1 below, the data has been sorted by both student performance on the exam and by question performance. As can be seen on the right hand side of Figure 1, students who performed poorly on the exam appear near the top of the table and students who performed well on the exam appear on the bottom of the table. The student grades on this exam ranged from a low of 42 to a high of 96. At the bottom of Figure 1 is the total score of each question. This score represents the students who answered this question correctly with higher values representing easier questions. The question performance has been sorted from high to low with easy questions presented on the left hand side of the chart and more difficult questions presented on the right hand side of the chart.

At the top left of Figure 1, a Report Filter has been used. Excel's Pivot Table function includes the report filter which allows the data in the table to be filtered by user based criteria. In

this example, each question has been assigned to a category based on the particular construct the question is measuring. The current configuration for Figure 1 is showing all of the constructs in the exam. Several columns have been hidden in Figure 1 to enhance the quality of the image.

Conditional formatting is another data analysis visualization tool that is available in Microsoft Excel. The benefits of conditional formatting have been demonstrated in this pivot table analysis. In Figure 1 below, conditional formatting has been used to highlight any value in the pivot table which equals zero. By using conditional formatting the instructor can easily see not only missed questions, but the patterns that have developed for particular questions and the exam overall.

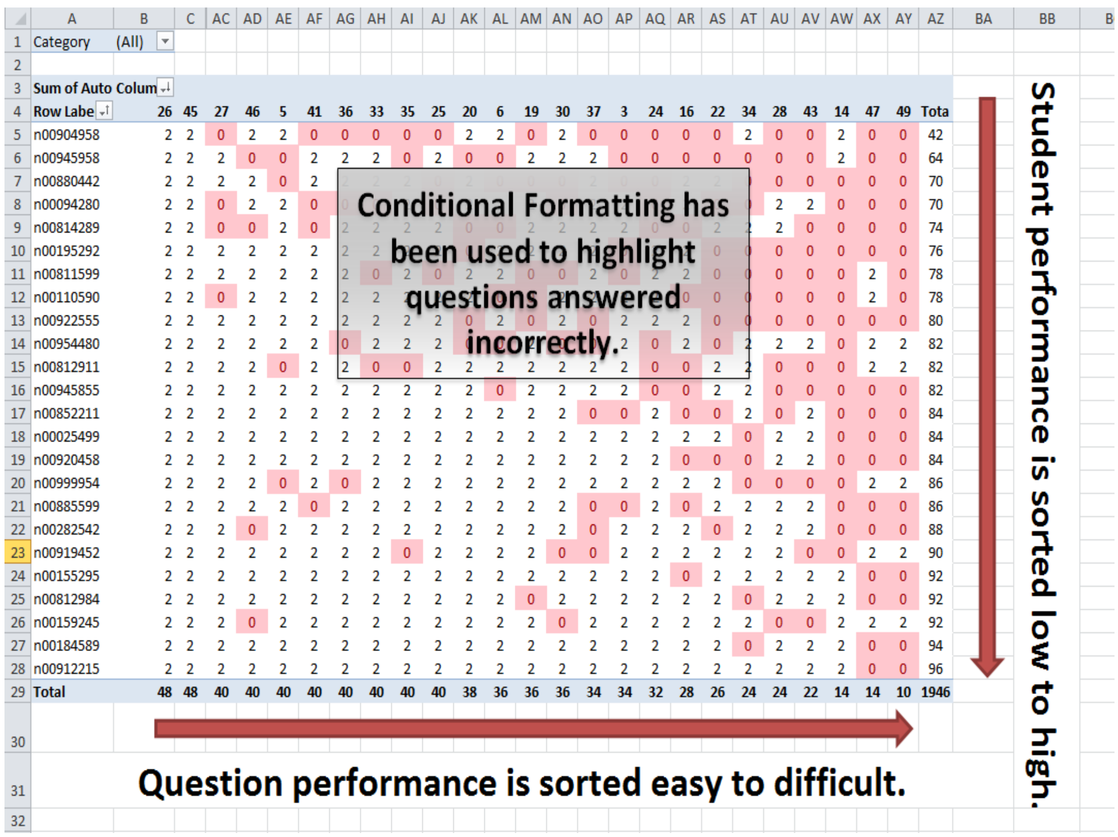

Figure 1: Pivot Table showing exam item analysis

In Figure 1, it is also easy to quickly identify the questions that are easy and the questions that are difficult. The two most difficult questions appear to be questions 47 and 49. One interesting observation is that the two highest performing students on the exam both missed these questions. Another pattern that can be seen is that for the most part students who answered one of the questions correctly also answered the other question correctly as can be seen by the non-red values

that appear paired in the diagram. Further, question 14 is the third most difficult question and was answered correctly by most of the students who performed well on the test overall.

The visual analysis of the pivot table can supplement traditional statistical analysis. Many of the statistical measures are subject to false positive outcomes indicating problematic exam questions that need further review. This paper provides specific examples where statistical measures indicate there may be problems with particular exam questions and the visual analysis (pivot table) provides a better understanding of the items responses. The visual analysis may also help to eliminate questions that need to be thrown out. Identifying poorly worded questions before an exam is reviewed with students in class can save classroom time and instructor effort. For some professors, the first time they realize a question is poorly worded is only after students publically bring a flawed question to their attention.

STATISTICAL MEASURES FOR ITEM ANALYSIS

Classical Test Theory (CTT) comprises a set of concepts and methods that provides a basis for many of the measurement tools and statistics that are commonly used by higher education instructors to both construct and evaluate exams. Around since the early 20th century, CTT is the easiest and most widely used form of analysis. In recent decades attention has turned to Item Response Theory which examines how test performance relates to the underlying abilities that are measured by the items in the test (Hambleton and Jones, 1993). Item Response Theory, as the name implies, tends to focus on item-level performance. It has very stringent assumptions such as the fact that the set of items that compose the test measure a single common trait or ability. However, CTT forms the basis of the item analysis provided in Blackboard and in other popular item analysis software such as Softscore or ScorePak. The popularity of CTT is partly due to the relatively weak statistical assumptions needed to run analyses combined with simple mathematical procedures. Most procedures in CTT analysis focus on the test as a whole (mean, standard deviation, etc.) rather than on the individual questions. However, important item-level statistics such as difficulty and discrimination can still be calculated as part of Classical Theory. Additional detail about the mathematical and theoretical components of Classical Test Theory can be found in a variety of books and articles including Baker (1997); Crocker et. al (1986); Fan (1998); and Hambleton & Jones (1993).

Blackboard uses both Item Difficulty and Item Discrimination measures in the Item Analysis function. While these measures are helpful in understanding question performance, both measures have limitations which may be seen quite clearly using a visual analysis of the exam results (such as in a pivot table). Next, Item Difficulty and Item Discrimination will be discussed and it will be illustrated how a visual tool such as a pivot table can supplement an exam analysis using these two measures.

Item Difficulty is a measure used to show the percentage of students who answered a particular question correctly (for items with one correct alternative). Item Difficulty is reported on

a range from 0 to 100% whereby higher item difficulty percentages represent easier questions. According to Lord (1952) desirable difficulty levels are slightly higher than midway between chance (arriving at correct choice by guessing) and perfect scores for the item. Figure 2 below represents Lord's (1952) desirable difficulty levels based on the question format:

Figure 2: Question Format and Ideal Item Difficulty	
Question Format	Ideal Difficulty
Five-response multiple choice	70
Four-response multiple choice	74
Three-response multiple choice	77
True-false	85

Blackboard arbitrarily classifies questions with percentages greater than 80% as "Easy" and less than 30% as "Hard" and flags these questions for review.

Questions where students have performed poorly may fall into one of several categories: 1) incorrectly keyed answers, 2) confusing text, 3) content that was not covered during class, or 4) higher level questions. By only looking at a measurement like the percentage of students who answered a question correctly, professors may accidently throw out higher level questions. Using Excel's Pivot Table function to visually analyze the exam results allows instructors to visually identify and categorize these questions. For example, question 14 in Figure 1, was given an Item Difficulty of 29.2% which according to Lord would be much lower than ideal. Question 14 would also be flagged by Blackboard for further review since the Item Difficulty was lower than 30%. Based on the visual analysis presented by the pivot table it can be seen that most of the students who received an "A" on the exam answered this question correctly. This question may be a valid question that tests higher level constructs than the other questions. However, the analysis reveals that two students who performed poorly on the overall exam still received credit for this question. Whether these two poorly performing students actually knew the material being tested in the question and received credit from "informed guessing" or if their correct responses were a function of "statistical guessing" cannot be determined from either Item Difficulty or Visual Analysis (Burton 2001).

Another statistical method common in Classical Test Theory and also presented by Blackboard is Item Discrimination. Item Discrimination refers to the ability of a question to differentiate among students on the basis of how well each student knows the overall material being tested. Item Discrimination is a measure of the degree to which students with high overall exam scores also answered a particular question correctly. A question is a good discriminator when students who answer the question correctly also do well on the test. One common item discrimination index is a point biserial correlation coefficient between students' responses to a particular question and total scores on all other questions on the test. However, a discrimination value cannot be calculated when the question's difficulty is 100% or when all students receive the same score on a question (Blackboard Learn). Point biserial values can range from -1.0 to +1.0.

Questions with discrimination values above 0.3 are arbitrarily classified as "Good"; between 0.1 and 0.3 as "Fair"; and those less than 0.1 are considered "Poor" and flagged for review by Blackboard.

The visual analysis from the pivot table can help with the review of items which scored low on the point biserial scale. For example in Figure 1, question 46 scored a .056 point biserial rating in Blackboard, suggesting that further review is required. In the pivot table it is shown that 20 out of 24 students answered this question correctly. A couple of students with lower overall exam grades missed this question while students with even lower overall grades answered the question correctly. This type of pattern heavily influences the point biserial statistic but visually shows that there is nothing wrong with the question. The four students who missed this question may have just marked the wrong response on their exam or they may not have studied that particular construct being tested.

One problem with item discrimination methods such as the point biserial statistic is that the calculation assumes that an individual question is measuring the same construct as the rest of the questions on a particular test. In higher education, exams often have questions from multiple chapters that cover different constructs. So, a question with a low or negative discrimination index (point biserial value) might indicate a concept that is covered sparingly throughout the exam. In other words a student could do very well on this construct but still score poorly on the overall exam. There would be nothing inherently wrong with the question but statistical tests may flag the question for review. The report filter in the pivot table can help with this type of item classification and analysis. An example using the Report Filter function is demonstrated in Figure 3 below. In Figure 3, the report has been filtered by each question's category. In this filtered report, only questions measuring students' knowledge of the REA Diagraming construct have been included.

Below the pivot table the Item Difficulty and Item Discrimination statistics are presented. The Item Difficulty rating is question specific and does not change when the report is filtered. However, the point biserial (item discrimination) may be recalculated for this subset of questions to see how well each question measures the construct being tested. In the example in Figure 3, questions 47 and 49 which were the most difficult questions on the overall exam (as reported in Figure 1 for all question categories) are still the most difficult question for the REA Diagraming category. The visual analysis also clearly highlights that these two questions are pretty good "higher level" questions. That is, these questions can discriminate between high performing students and lower performing students for questions in the category REA Diagraming. A comparison of the Item Discrimination measure for how well these questions correlate with students overall exam scores (Original Discrimination) versus how well these questions correlate with the overall score of just questions in the REA Diagraming category (Revised Discrimination) shows a significant difference. In the Original Discrimination results there were three questions (31, 47, and 49) that seemed to test only fair when compared with the overall exam scores. The Revised Discrimination results show that these three questions actually correlate very well with the total scores for the just the category of REA Diagraming.

	A	B	C	D	E	F	G	H	I
1	Category	REA Diagraming							
2									
3	Sum of Auto Score	Column Labels							
4	Row Labels	48	31	50	36	47	49	Total	
5	n00904958	0	2	0	0	0	0	2	
6	n00094280	2	0	2	0	0	0	4	
7	n00195292	0	0	2	2	0	0	4	
8	n00025499	2	2	0	2	0	0	6	
9	n00922555	2	2	2	2	0	0	8	
10	n00282542	2	2	2	2	0	0	8	
11	n00852211	2	2	2	2	0	0	8	
12	n00945855	2	2	2	2	0	0	8	
13	n00814289	2	2	2	2	0	0	8	
14	n00920458	2	2	2	2	0	0	8	
15	n00184589	2	2	2	2	0	0	8	
16	n00912215	2	2	2	2	0	0	8	
17	n00812984	2	2	2	2	0	0	8	
18	n00880442	2	2	2	2	0	0	8	
19	n00155295	2	2	2	2	0	0	8	
20	n00945958	2	2	2	2	0	0	8	
21	n00885599	2	2	2	2	0	0	8	
22	n00999954	2	2	2	0	2	2	10	
23	n00811599	2	2	2	2	2	0	10	
24	n00110590	2	2	2	2	2	0	10	
25	n00954480	2	2	2	0	2	2	10	
26	n00812911	2	2	2	2	2	2	12	
27	n00159245	2	2	2	2	2	2	12	
28	n00919452	2	2	2	2	2	2	12	
29	Total	44	44	44	40	14	10	196	
30									
31		Question Number							
32		48	31	50	36	47	49		
33	Item Difficulty	91.7	91.7	91.7	83.3	29.2	20.8		
34	Original Discrimination	0.23	0.479	0.585	0.45	0.148	0.22		
35	Revised Discrimination	0.66	0.53	0.53	0.31	0.73	0.66		

Figure 3: Pivot Table Using Report Filter to Show Only Questions Measuring a Particular Construct (REA Diagraming).

SUMMARY

In this paper we have demonstrated that a visual analysis of exam results using Excel's Pivot Table Function can supplement traditional Classical Test Theory measures such as Item Difficulty and Item Discrimination. Examples were provided for both Item Difficulty and Item Discrimination where the calculated statistics indicated further analysis of exam questions would be needed. It was demonstrated how the visual analysis in Excel's Pivot Table could easily show that questions with high item difficulty measures may be valid questions that were only answered correctly by the students who performed better on the exam. The sensitivity of Item Discrimination measures such as the point biserial statistic to small anomalies in the exam data was also illustrated. For instance, when students who performed poorly on an exam answered questions correctly, they heavily influenced the Item Discrimination measure. Visualization analysis of the questions indicated that these students performance on the question being examined may be caused by random guessing rather than informed guessing (Burton 2001).

It was also demonstrated how violations to a required assumption of the point biserial measure may impact the measurements effectiveness. When multiple constructs are being measured in a single exam the results of the point biserial statistic may not be applicable to the exam as a whole. Using the report filter function in the pivot table allows the user to view questions from the exam based on the question's category. Viewing the questions by a single category allowed for a re-calculation of the point biserial measurement to examine how well each question correlated to the other measures of a single category.

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MARKET ORIENTATION EFFECTS ON BUSINESS SCHOOL PERFORMANCE: VIEWS FROM TWO MANAGEMENT LEVELS

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ABSTRACT

This manuscript reports the results of a national survey examining the levels of reported market orientation toward students and explores its impact on business school performance. The business schools researched were all members of AACSB and all were located in the United States. Two levels of management involved in the operations of the business schools studied. Business school deans formed one level and accounting department chairpersons represented the second level of managers who were asked to respond to a mailed survey. The survey questions used came from a reworded Narver and Slater (1990) "market orientation" scale and the Jaworski and Kohli's (1993) "overall performance" scale. 101 accounting department chairpersons and 131 business school deans responded to the survey. The manuscript details the data collection and analysis processes, the statistical findings, implications for business school administrators.

INTRODUCTION

All organizations seek to attain and maintain high levels of performance. But, can a particular organizational strategy or culture lead to improved organizational performance? And, can such a strategy or culture be described and then be measured quantitatively? And, if measurements can be made will comparisons in measurements between organizations and/or between organizational levels be advantageous in helping organizations improve their performance? This research investigates these questions and attempts to provide insight into how performance of AACSB-International member business schools may be influenced by market orientation.

AACSB-International standards for business school accreditation outline requirements that if met lead to accreditation thereby elevating the status of the school as well as indicating superior performance. Additionally, the Baldrige National Quality Program (BNQP 2005) has established the *Baldrige Education Criteria for Performance Excellence* for universities and other educational organizations, and includes a "student, stakeholder, and market focus category" (BNQP 2005) among the criteria leading to performance excellence. This particular category of criteria suggests that organizations identify potential market segments and determine which ones to pursue, then

take steps to learn "key requirements and changing expectations," build relationships, increase loyalty, and determine satisfaction/dissatisfaction of those student/stakeholder markets. The focus category also emphasizes the importance of strategic decisions regarding the extent that university business schools may choose to focus on particular markets and the balance of focus between chosen markets. These decisions may obviously contribute to the culture of the school, encouraging or discouraging attentiveness to students and potential students, parents of students, future employers of graduates, and other student/stakeholder markets.

Market selection and other applications of marketing theory by practitioners within higher education are appropriate and should certainly be beneficial. The idea that organizations of higher education should employ marketing strategies to improve their performance appeared in the literature as early as the 1960s. Kotler and Levy (1969) were pioneers in successfully arguing for broadening the scope of marketing (and the marketing concept) to include higher education as well as other nonbusiness organizations.

This paper reports the results of an empirical study within AACSB member schools (AACSB-International 2010) examining the levels of self-reported market orientation toward students. Market orientation scores are used as the independent variables in this study. The research then and investigates the impact of the independent variables on reported organizational performance, the dependent variable in the study. Although there are many possible stakeholder or customer groups that might be of interest within the context of higher education, this paper limits the research to market orientation toward only students.

DISCUSSION AND LITERATURE REVIEW

In business schools, excellence is assessed and assured by the qualification standards of the bodies awarding formal accreditation to business schools (Karathanos and Karathanos 1996). For American business schools, the main accreditation body is AACSB-International (the Association to Advance Collegiate Schools of Business). Performance is ranked more informally in the U.S.A. by the annual guide published by *U.S. News and World Report* and by the *Peterson's* web-based educational information resource, both directed at prospective students, their parents and their advisers.

The BNQP (2005), mentioned above, incorporates behaviors and actions indicative of high levels of market orientation as described in the marketing literature (Kohli and Jaworski 1990; Narver and Slater 1990; Jaworski and Kohli 1993; Slater and Narver 1994; Webster, Hammond, and Harmon 2005; Hammond, Webster, and Harmon 2006; Webster, Hammond, and Rothwell 2010; and Hemsley-Brown and Oplatka, 2010; and Zakaria, Roslin and Daud, 2011) throughout the education criteria for performance excellence. Further, the marketing literature (Barksdale and Darden 1971; Houston 1986; Kohli and Jaworski 1990; Narver and Slater 1990; Jaworski and Kohli 1993; Siguaw, Brown, and Widing 1994) supports assertions by practitioner-oriented publications such as the BNQP 2005 that these behaviors and actions result in a greater ability of

the organization to achieve its objectives and attain higher levels of performance. The term "market orientation" refers to the extent that an organization uses the marketing concept. Kohli and Jaworski describe the processes required to engender a market orientation as a "distinct form of sustainable competitive advantage" (1990). They state that market orientation consists of "the organizationwide generation, dissemination, and responsiveness to market intelligence" (1990). Narver and Slater agreed with Kohli and Jaworski, and proposed three behavioral components (customer orientation, competitor orientation, interfunctional coordination) that "comprehend the activities of marketing information acquisition and dissemination and the coordinated creation of customer value" (1990).

This study is an extension of previous research (Hammond, Webster, and Harmon 2006), which provided a comparison of the market orientation components to criteria for performance excellence described in the BNQP 2005. Specifically, the criteria require that an educational organization maintain an awareness of and act on the current and future needs of its customers and other stakeholders. They also require the organization to know its strengths, weaknesses, and performance levels relative to competitors, and to support a coordination of effort throughout the organization (toward creating, delivering, and "balancing" customer-stakeholder value and toward achieving high levels of customer-stakeholder satisfaction). The criteria further require an organizational wide effort to gather, disseminate, and act on information regarding the requirements, expectations, and preferences of students and other stakeholders. The BNQP 2005 suggests that students are the key customers of higher education, and suggests that parents and employers of graduates can also be considered "customers" or "stakeholders." We therefore investigate these organizational behaviors described in the market orientation literature as well as the BNQP 2005 as applied toward students by the accounting department chairs and deans of AACSB member schools.

RESEARCH QUESTIONS

The objectives of this study were to answer the following research questions:

1. What are the mean levels of market orientation toward students as reported by accounting department chairs and deans of business schools belonging to AACSB?
2. How do the mean levels of market orientation of the accounting chairs and deans toward students compare to the levels of market orientation toward customers reported by specialty business managers as catalogued in previous research conducted on businesses in the private sector?
3. Do the mean levels of market orientation toward students as reported by the accounting chairs differ from the levels reported by the business school deans?
4. What are the mean scores of the organizational performance scale reported by the accounting department chairs and deans? And, do these reported levels differ between the accounting chairs and business school deans?
5. Do levels of reported market orientation toward students impact the level of reported

organizational performance as reported by the accounting department chairs and school of business deans?

To answer research question 1, the market orientation mean scores and standard deviations of the accounting chairs and business school deans were calculated for the three dimensions of market orientation (customer orientation, competitor orientation, internal coordination, and overall market orientation—the numerical average of the other three).

To answer research question 2, the market orientation mean scores of the accounting chairs and business school deans were compared to the mean scores of specialty business managers as reported by Narver and Slater (1990). For each comparison, t-tests were conducted separately on the four components of market orientation.

To answer research question 3, the mean scores of accounting department chairs and the business school deans were compared for differences using a set of t-tests for each of the dimensions of market orientation.

To answer research question 4, the mean scores for the organizational performance scale were computed and a t-test was used to check for significant differences between the inputs from the accounting department chairs and the business school deans.

To address research question 5, regression models were constructed and analysis of variance of the regression models was undertaken to determine if the independent variables, those being the three constructs of market orientation (customer orientation, competitor orientation, and interfunctional coordination), had a significant statistical effect on the dependent variable, organizational performance.

METHODOLOGY

Data for the study were collected by way of a mailed survey. Survey instruments along with a cover letter were mailed to accounting department chairs and deans of schools of business located in the United States holding membership in AACSB-International. As key informants (Campbell 1995; Phillips 1981), the accounting chairs and deans were asked to complete the surveys and return them in business reply envelopes that were provided. Of the total survey instruments mailed, 101 were completed and returned by the accounting leaders and 131 by the deans. The response rate was approximately 22%.

To measure market orientation, we chose Narver and Slater's (1990) construct (MKTOR), which consists of several questions addressing specific behaviors and activities which, together, measure the extent that the organization (the school of business in this case) applies the marketing concept. The scale addresses concerns raised by Barksdale and Darden (1971) that market orientation is properly measured in terms of behaviors and activities instead of "philosophical notions." A seven point response scale is used ranging from one (1) "not at all" to seven (7) "to an

extreme extent." Scores above the midpoint (4.0) indicate application by the respondent of the marketing concept; scores below the midpoint indicate a lack of application by the respondent. Questions from the original scale were modified somewhat to conform to the vocabulary prevalent in academic institutions and, as noted above, to avoid referring to students as "markets" or "customers." We combine the questions to form three subscales that measure the market orientation components (customer orientation, competitor orientation, and interfunctional coordination), matching Narver and Slater's methodology. The subscales combine to form an overall measure of market orientation, also matching Narver and Slater's methodology. 15 questions were used in the collection of the customer and market orientation data. The questions and explanatory information about the survey questions may be found in appendix 1.

"Overall performance" is measured using the subjective Jaworski and Kohli (1993) two-item measure that is based on executive opinion of performance. No specific performance goals are assumed for the respondents. Each respondent is requested to answer the two questions about actual recent overall performance relative to the expectations and performance goals of their organization, in this case the school of business. Possible responses on the seven point scale range from poor (1) to excellent (7). The questions and explanatory information about the survey questions may be found in appendix 2. Slater and Narver (1994) defend the use of subjective performance measures, noting that the measures "are used commonly in research on private companies or business units of large corporations" as well as the "strong correlation between subjective assessments and their objective counterparts" indicated in previous research. Both survey instruments were previously vetted for validity and reliability (see Hammond *et al*, 2006).

The possibility of nonresponse bias was tested by comparing early and late respondents (Armstrong and Overton 1977). The tests indicated no significant differences between early and late respondents (at the .10 level of significance). Also, Berdie (1989) found that, even in the event of nonresponse bias in mail surveys, typically the bias did not alter the survey findings. We proceeded on the basis that significant nonresponse bias did not exist.

Narver and Slater (1990) reported market orientation scores for three separate types of businesses: commodity, specialty, and distribution. We believe schools of business demonstrate more of the characteristics of specialty businesses than the characteristics of the commodity or distribution businesses. The commodity and distribution businesses in the Narver and Slater study produced and sold generic products designed for a wide range of customers. The specialty business firms produced and sold products that were individualized (relative to the commodity products) for specific customer orders. By adapting its generic or base product, the specialty products firm creates superior value and thereby provides more benefit to the customer. This type of firm is challenged to constantly monitor the competitive environment and to be vigilant for changes in the customer requirements. Likewise AACSB-International schools of business seek to provide a product that is individualized through its programs of study or majors. AACSB-International schools would argue that a superior product (relative to non-member schools) is provided that

would benefit its customers (or students). We therefore used the market orientation scores for specialty business as reported by Narver and Slater (1990) for our comparisons.

RESULTS

Tables 1 and 2 present the mean scores and standard deviations for the three market orientation constructs and the mean scores and standard deviations for the overall market orientation score (the arithmetic average of the three component scores) as well as the mean scores and standard deviations for the performance indicator. Table 1 data are from accounting chairs and Table 2 data are from business school deans. These two tables answer research questions number 1.

TABLE 1
DESCRIPTIVE STATISTICS
MEAN SCORES FOR MARKET ORIENTATION CONSTRUCTS (3) AND PERFORMANCE INDICATOR FOR AACSB ACCOUNTING CHAIRS
7 POINT SCALES

Description	Mean	Std. Dev.	N
MO-Customer	4.439	.9788	101
MO-Competition	3.383	1.284	101
MO-Coordination	3.701	1.157	101
MO-Overall	3.841	1.167	101
PERFORMANCE	5.282	1.004	101

TABLE 2
DESCRIPTIVE STATISTICS
MEAN SCORES FOR MARKET ORIENTATION CONSTRUCTS (3) AND PERFORMANCE INDICATOR FOR AACSB DEANS
7 POINT SCALES

Description	Mean	Std. Dev.	N
MO-Customer	4.550	1.056	131
MO-Competition	3.711	1.130	131
MO-Coordination	4.133	1.072	131
MO-Overall	4.131	1.086	131
PERFORMANCE	5.319	0.897	131

Table 3 present results of the t-tests undertaken to determine if statistically significant differences exist between the market orientation mean scores of business managers and the accounting department chairs and/or the business school deans. The business managers reported higher levels that were statistically significant for each of the three constructs as well as for overall market orientation. The information in Tables 3 answers research question 2.

TABLE 3
Means and t-test Results for Accounting Department Chairs and Business School Deans versus Specialty Business Managers
Market Orientation Measurements (7 point scale)

Market Orientation Construct:	Business Managers n=75	Accounting Chairs n=101	Business Deans n=131
	Mean	*Mean*	*Mean*
Customer Orientation	5.05	4.44*	4.55*
Competitor Orientation	4.71	3.38*	3.71*
Interfunctional Coordination	4.53	3.70*	4.13*
Overall Market Orientation	4.77	3.84*	4.13*

*significant at .01 compared to Business Managers

Table 4 compares the market orientation scores of the accounting chairs and the business school deans and tests for differences using a series of t-tests. The table also shows the results of the t-test comparing mean scores of the accounting chairs and the deans for the performance variable. As can be seen in the table, the business school deans reported higher mean scores that did the accounting department chairs for all three market orientation constructs as well as the overall market orientation score. In three of the four comparisons, the differences were statistically significant at the 0.05 level. The only market orientation comparison that was not statistically significant was the customer orientation construct. The t-test for the performance variable indicated no statistically significant difference although the deans' scores were just slightly higher than the accounting chairs. Table 4 answers research questions number 3 and 4.

The simple regression models were constructed for two specific reasons. First, the coefficients of the customer orientation constructs in the multiple regressions were found to be statistically significant. Secondly, as was mentioned earlier in the paper, a mean score above the midpoint of the scale (4.0 in this case) is indicative of the application of the marketing concept. In the cases of both the accounting chairs and deans, the customer orientation construct was greater than 4.0 and was found to be significant in the multiple regression models.

TABLE 4
MEAN SCORES AND T-TEST RESULTS FOR ACCOUNTING DEPARTMENT CHAIRS VERSUS BUSINESS SCHOOL DEANS FOR MARKET ORIENTATION CONSTRUCTS (3)
7 POINT SCALE

Market Orientation Construct:	Accounting Chairs n=101	Business Deans n=131	t-value	significance
	Mean	*Mean*		
Customer Orientation	4.44	4.55	0.80	ns
Competitor Orientation	3.38	3.71	2.12	.034
Interfunctional Coordination	3.70	4.13	2.98	.003
Overall Market Orientation	3.84	4.13	2.21	.028
PERFORMANCE	5.28	5.32	0.20	ns

Tables 5, 6, 7, and 8 that follow are the regression models developed to answer research question number 5.

TABLE 5
MULTIPLE REGRESSION MODEL FOR ACCOUNTING CHAIRS

$Y=b_o+b_1x_1+b_2x_2+b_3x_3$ where:

Y=mean score of the two-item performance scale as reported by the accounting department chairs
b_0=intercept
x_1=mean score of the customer orientation construct as reported by the accounting department chairs
x_2=mean score of the competitor orientation construct as reported by the accounting department chairs
x_3=mean score of the interfunctional coordination construct as reported by the accounting department chairs

TABLE 6
SIMPLE REGRESSION MODEL FOR ACCOUNTING CHAIRS

$Y=a+b_1x_1$ where:

Y=mean score of the two-item performance scale as reported by the accounting department chairs
a=intercept
x_1=mean score of the customer orientation construct as reported by the accounting department chairs

TABLE 7
MULTIPLE REGRESSION MODEL FOR BUSINESS SCHOOL DEANS

$Y=b_o+b_1x_1+b_2x_2+b_3x_3$ where:

Y=mean score of the two-item performance scale as reported by the business school deans
b_0=intercept
x_1=mean score of the customer orientation construct as reported by the business school deans
x_2=mean score of the competitor orientation construct as reported by the business school deans
x_3=mean score of the interfunctional coordination construct as reported by the business school deans

TABLE 8
SIMPLE REGRESSION MODEL FOR THE BUSINESS SCHOOL DEANS

$Y=a+b_1x_1$ where:

Y=mean score of the two-item performance scale as reported by the business school deans.
a=intercept
x_1=mean score of the customer orientation construct as reported by the business school deans.

Tables 9-12 that follow present the results of the analysis of variance of the four regression equations and yield that all the regression models are statistically significant in that all show that organizational performance is positively affected by higher market orientation scores in the first instance and singularly by customer orientation scores in the case of the simple regressions. The analyses of the regression models that follow provide insight and answers to research question 5.

TABLE 9
ANALYSIS OF VARIANCE OF THE REGRESSION MODEL
MARKET ORIENTATION COMPONENT SCORES EFFECT ON PERFORMANCE
AS REPORTED BY AACSB ACCOUNTING DEPARTMENT CHAIRS

Source	F	Significance
Model	13.592	.000
MO/Cust	4.184	.044
MO/Comp	8.685	.004
MO/Coord	.141	.708

*R Squared=.296 (Adjusted R Squared=.274)

TABLE 10
ANALYSIS OF VARIANCE OF THE REGRESSION MODEL
CUSTOMER ORIENTATION SCORES EFFECT ON PERFORMANCE
AS REPORTED BY AACSB ACCOUNTING DEPARTMENT CHAIRS

Source	F	Significance
Model	28.847	.000
MO/Cust	28.847	.000

*R Squared=.226 (Adjusted R Squared=.218)

TABLE 11
ANALYSIS OF VARIANCE
MARKET ORIENTATION COMPONENT SCORES EFFECT ON PERFORMANCE
AACSB BUSINESS SCHOOL DEANS

Source	F	Significance
Model	14.261	.000
MO/Cust	15.395	.000
MO/Comp	1.551	.215
MO/Coord	1.269	.262

*R Squared=.252 (Adjusted R Squared=.234)

TABLE 12
ANALYSIS OF VARIANCE
MARKET ORIENTATION TOWARD CUSTOMER EFFECT ON PERFORMANCE
AACSB BUSINESS SCHOOL DEANS

Source	F	Significance
Model	42.848	.000
MO/Cust	42.848	.000

*R Squared=.244 (Adjusted R Squared=.238)

IMPLICATIONS

This research finds that market orientation does indeed impact organizational performance at least as reported by the accounting department chairs and business school deans. Higher levels of both the customer orientation construct and the three construct market orientation model are significant in explaining changes in levels of reported performance. The research findings demonstrate that businesses perceive a greater importance and have made greater progress in the implementation of the marketing concept vis-à-vis university schools of business as perceived by their academic accounting department chairs and business school deans. This research found, as has previous research conducted on business organizations, that organizational performance may be improved by increasing levels of market orientation. Based on this study, university schools of business would seem to have ample opportunity to improve.

As students of the university may be viewed as the most visible of the numerous markets served, market orientation efforts focused at students would seem to have the potential for the fastest and highest payoff. Examples of such payoffs, all of which might correctly be viewed as performance indicators might include:

1. A potential increase in enrollment within the business school and accounting department
2. A potential increase in the number of business/accounting majors
3. A potential increase in the retention rate of current business/accounting students
4. A potential increase in the graduation rate of business school students

In view of Narver and Slater (1990) and Kohli and Jaworski (1993) findings that enhanced levels of market orientation will improve the competitive advantage of organizations, business schools appear to be organizations ripe to take advantage of the market orientation concept. Focus on creating market orientation culture should serve both schools and their various stakeholders, not just students, in more effectively achieving the organizational mission.

Our conclusions are tempered by the findings of Noble, Sinha, & Kumar (2002) and Haugland, Myrtveit, & Nygaard (2007) that there appears to be no single strategic orientation that leads to superior performance in every case; and as previously stated, building a market orientation culture within an organization is not a quick fix but rather a continuous process.

FUTURE RESEARCH

The research we report leaves open several related areas of interest for additional study. For example, do customer and market orientation levels vary between different levels of administrative responsibility outside the business school or university at large? Other examples include research to determine the impact or influence that variables such as size of a school, school affiliation (AACSB, ACBSP, or neither), admission standards, placement efforts, or recruiting efforts have on market orientation. Also, research on other stakeholders such as parents of students, employers of students, and alumni associated with schools of business would be useful. Such research would further our understanding of market orientation and its application within higher education.

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APPENDIX 1

Market Orientation Survey Questions Sent to Accounting Department Chairs and Business School Deans of AACSB Schools of Business

1. Our objectives are driven by satisfaction of our students.
2. We measure satisfaction of our students systematically and frequently.
3. Those responsible for recruiting students regularly share information within our business school/institution concerning competitor's strategies.
4. Our market strategies (such as recruiting and retention) are driven by our understanding of the possibilities for creating value for our students.
5. We respond rapidly to competitive actions that threaten us.
6. We constantly monitor our level of commitment and orientation to students.
7. University administration regularly discusses competitors' strengths and strategies.
8. All levels of administration understand how the entire institution can contribute to creating value for students.
9. We give close attention to service of students after enrollment.
10. Our strategy for competitive advantage is based on our understanding of our students needs.
11. We encourage other staff and faculty outside of recruiting/administration to meet with our prospective students.
12. All of our departments are responsive to and integrated in serving students.
13. Information on recruiting successes and failures are communicated across functions in the business school/institution.
14. We share information and coordinate resource use with other units in the institution.
15. We target potential students where we have, or can develop a competitive advantage.

Each question answered on a 7 point scale: 1=Not At All, 7=To An Extreme Extent. Questions 1, 2, 4, 6, 9, and 10 relate to the Customer Orientation construct/dimension, Questions 3, 5, 7, 11, and 15 relate to the Competitor Orientation, Questions 8, 12, 13, and 14 relate to Organizational Coordination. The Overall Marketing Orientation score is computed by averaging the mean scores of the other three sets of questions.

APPENDIX 2

Performance Measurement Questions Sent to Accounting Department Chairs and Business School Deans of AACSB Schools of Business

1. Overall performance of the school of business last year was.
2. Overall performance of your school of business relative to major competitors last year was.

Both questions answered on a 7 point scale: 1=Poor, 7=Excellent

AN INTERNAL CONTROLS TUNE-UP FOR COLLEGES & UNIVERSITIES WILL ACHIEVE COST SAVINGS & GREATER EFFICIENCY

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ABSTRACT

Because college tuition has risen faster than inflation, it is a highly discussed topic today. Universities must do more with less by controlling costs. Being cost conscious must become more of a priority. President Obama, in his 2012 State of the Union address, and in his 2013 State of the Union address which introduced the concept of a College Scorecard for affordability and value, stated that future federal funding will be contingent on institutions keeping costs in line. This article provides some guidance for colleges by suggesting questions for an initial interview with various department managers in areas that may not be considered high risk but may yield cost savings. A tune-up/update of internal controls could also achieve savings or efficiency.

Keywords: university internal controls; university cost controls; university risk assessment

INTRODUCTION

The pressure on colleges and universities to control costs was heightened when President Obama in his 2013 State of the Union address said he would ask Congress to amend the Higher Education Act "so that affordability and value are included in determining which colleges receive certain types of future federal aid". This means operating more efficiently and being more cost effective.

President Obama, in his 2012 State of the Union address, said that the government cannot continue to subsidize skyrocketing tuition and that the universities must work to keep costs down. The President emphasized this point by saying: "Let me put colleges and universities on notice. If you can't stop tuition from going up, the funding you get from taxpayers will go down." In a speech at the University of Michigan, President Obama reiterated that colleges needed to do more to cut costs. "We should hold them accountable …..".

A survey conducted by Moody's Investor Services of nearly 300 colleges indicated that: "about one-third expect their net tuition revenue will either decline outright this year or increase at a rate that fails to keep pace with inflation". State funding per student for public universities fell by more than 9% last year. At the same time, the average amount that students at public

colleges and universities paid in tuition, climbed 8.3% (after state and institutional grants and scholarships).

Managing a university is very much akin to running a small city. While the focus is on academics, university administrators must deal with a myriad of issues. Educational administrative and leadership programs provide direction and knowledge of budgeting but do not put appropriate emphasis on the design and operation of internal controls and cost effective measures. This is why an internal auditor is critical to the university. Most universities have begun to recognize the importance of controls by putting basic practices in place such as standard operating policies and procedures, authorizations, reconciliations, supervision, and the use of passwords to access computer programs. With the many demands placed on university administration, improving and monitoring internal controls has not been a priority. Monitoring the controls is very much akin to maintenance – when time and money become scarce, the maintenance is reduced. The practices suggested in this article emulate the processes outlined in the report published by the Committee of Sponsoring Organizations (COSO), Internal Control - Integrated Framework , which is recognized as the global definition for internal controls.
Mining the present costs as well as the internal controls of the processes is now imperative.

With the surmounting challenges because of the economic downturn and the resultant funding cuts, attention risk (focusing on one problem to the exclusion of others) could be occurring. It is now time to look internally at the operations and examine where cost savings can be found or where internal controls may need updating. Many universities "continue to approach risk and control requirements in silos, which leads to the creation of multiple frameworks for governance, infrastructure, and processes; fragmented risk and control activities; potential gaps in overall risk coverage; and duplication of effort".

ORGANIZATIONAL CONSIDERATIONS

Tone at the Top

The strength of the internal controls is set by the tone at the top. The President and his/her Council of Vice-Presidents should tie risk assessment to the strategic plan. The strategic plan should be attainable, realistic, and communicated to everyone. The internal auditor or system auditor must be persuasive in convincing the administration that internal controls must be part of the mechanics of putting the strategic plan in place. Policies and procedures should be formally documented to assure compliance with established guidelines. The informal network and the "politics" of the university need to be considered when placing internal controls into operation as these can prove to be beneficial or an impediment to success. Just as in driving a car, entities forget or cannot see the "blind spots" -- management errors and misjudgments regarding the environment or competition; when there is too much homogeneous thinking (no one questions

decisions which should be debated and aired) in the management level, and where there are failures in judgment due to erroneous assumptions and thinking.

A. Self-Assessment

A self-assessment could be the starting point. The executive administrators must endorse this assessment as they set the tone and mission of the organization. The dual focus of the assessment should be to identify cost savings and to assure that controls are effective.

An initial step may be to reassess the competitive environment. This is especially critical because of the proliferation of for-profit universities, the explosion and acceptance of on-line courses/degrees being offered, and the expanded education being offered by community colleges. The analysis should start by defining courses demanded by the current environment, the evolution of technology, and the profile of the student attracted to your university.

B. Span of Control

Review the diagram of span of control for the President and the Vice-Presidents (who/which departments report directly to each) focusing on the administrative side of the university. The executives should send a memo to their areas informing the managers of the forthcoming assessment and seeking their participation.

Establish a manual or a list of information required from each department to guide the department through the self-assessment; keep this as brief but as complete as possible. While it is possible that the Finance/Accounting department could provide many of these numbers, it is important that this is a participative process involving all department managers so that this is not just assessment but also a reflective process. In addition, no manager should feel that their department is being particularly targeted.

Request a detailed (not summarized into minimal categories) report showing budget versus actual numbers for each department for the last seven years (this covers a period before the economic recession as well as the years of emerging recovery). Also obtain a report (with an organization chart) reflecting the number of employees in each department for the last seven years. The updated organization chart should include every employee in every department. This will cause the various department managers to review and to some extent evaluate and justify each member of their staff. One audit used the benchmark that each manager should ideally supervise at least seven employees and found that the only department that was efficient had a ratio of 9.5 to 1. If there is a greater ratio, the question becomes if the process could be performed with fewer employees or computerized.

Do not ask for explanation of a certain percentage change if actual differs from forecasted but instead let the managers comment where they see fit. Ask each manager to identify areas where the process could be improved; could be more efficient by either eliminating a step or by

multi-tasking several steps; a process could be computerized, or the process could be assigned to another department. Suggest that "none" is not an adequate answer. Hopefully the manager will mention areas/processes where complaints from the campus have been forthcoming. Put an expected date of completion on the request to ensure reasonable response time.

Once the information has been compiled, begin a process analysis of each area. How you prioritize could be a suggestion from the Vice-President or it could be an arbitrary choice such as the length of time since the last audit or based on the assessment of risk for each of the various areas. However, every area should be reviewed. It is important to include the internal auditor or someone from the President's office as a facilitator in this process to assure an independent objective view, as well as being more experienced with internal controls.

Keep in mind the complete picture so that overlap of services or possible duplication of services can be identified. It is best if you review departments based on a transaction cycle. Your conclusions should address costs as well as the fact that the controls in place appear sufficient to assure operations are efficient and working as designed. The following represents a sampling of areas that may not be audited frequently, may reflect recent trends, or may be considered low risk and be overlooked. (This is not meant to be complete but to perhaps spur the assessment process.) However, these area may be where cost savings and/or efficiency could be realized.

C. Code of Ethics

Most universities have a student Code of Ethics and/or a student Code of Conduct/Civility but is there a Code of Ethics for the employees? If such a Code exists, is it reviewed with all employees at a reasonable frequency? Does it extend to adjunct faculty and all other part-time employees, as well as student workers? Anyone who receives compensation from the university should be required to sign a Code of Ethics at the same time as initial payroll and tax forms are completed. Given the sensitive mission of a university, it would seem this should be a priority.

This is a confusing area because universities may have a Code of Ethics or Code of Conflict in various departments in order to comply with regulations; for example, financial aid or for grants, but will lack a comprehensive Code of Conduct for the entire campus. A Code of Ethics for all employees will convey the university's expected behavior of its employees and serves to reinforce the university's core values of integrity, honesty, civility, etc. While the Sarbanes-Oxley Act applies to publicly traded companies, the internal auditor can demonstrate the benefits to the university that having a Code of Ethics can yield. For example, the Code can be used to make employees aware of conflicts of interest, the need for proper maintenance of records, and the proper use and maintenance of assets.

REVIEW OF COST AREAS & PRACTICES

A. Senior Executives and Perks

Embarrassing news articles have appeared frequently regarding the President's abuse of the position. The facilitator or internal auditor should inquire of the Controller or VP of Finance the extent of oversight of the cost of the President's perks and the proper use of scarce resources. that there are frequent unfortunate news articles about this type of abuse, particularly in smaller colleges. In addition, in smaller colleges, there could be insufficient controls when it comes to segregation of duties at the executive level. Perks (such as exit bonuses, housing loans, education loans, and exorbitant compensation) to senior executives or talented/highly credentialed faculty should also be reviewed.

B. Marketing costs

In recent years, many universities have utilized marketing experts to build a Branding campaign or to update/refresh the logo of the university. These services are not inexpensive. This is a specialized area that could be a short term contract or an ongoing arrangement. Was a separate budget prepared for this effort and have the costs been reconciled to the budget recently? Has the university tied this Branding to the recruiting efforts for students and student athletes? Is there is a reasonable point where the institution can pare down Branding and recruitment costs as these tend to continuously escalate? Is the institution aware of its admission rate (% of applicants offered admission) and yield (% of students who enroll out of those admitted) and has the Branding or recruitment efforts helped these measures? Measures of the effectiveness of recruitment costs should be compared at several levels – the amount of students attracted to the campus for a visit, the amount of applications, and the amount of admissions. The admissions office could provide help with these numbers. Is the marketing effort coordinated by one department or is marketing of the university separate from marketing of athletic events, individual colleges, and other events? Centralized versus decentralized marketing costs should be explored. Can some of the marketing expense be replaced by strategic posting on social media?

C. The costs of Administration

In the past decade there has been a compounding of administrative positions. Many of the entering students are not properly prepared for college. The need for financial aid counselors and program administrators, as well as the need for services for disabled students, foreign students, unprepared students, etc. has increased. However, these factors fail to explain the growth in the ratio of administrators to faculty by fivefold. "Between 2001 and 2010 at Purdue University, for example, the number of tenured and tenure-track faculty increased 12 percent, the number of

graduate teaching assistants declined by 26 percent, and student enrollments increased by about five percent…. Meanwhile, the number of university administrators increased by an astonishing 58 percent, and resident tuition rose from just under $1,400 to nearly $9,000 per year in a pattern that appears highly correlated with administrative growth."

The University of Minnesota found that the payroll had swelled to the point where there was nearly one employee for every three and a half students. The administrative employees grew by 37%, more than twice as fast as the teaching corps and nearly twice as fast as the student body. The U. S. Department of Education said: "The number of employees hired by colleges and universities to manage or administer people, programs, and regulations increased 50% faster than the number of instructors between 2001 and 2011". During this same period, there has been adoption of accounting and information technology to perform duties formerly manually processed in a paper system, which should have reduced some traditional clerical jobs. Many of these clerks were transferred to other parts of the administration. The Delta Project's Trends Report has highlighted the spending shift:

> The share of spending going to pay for instruction has consistently declined when revenues decline, relative to growth in spending in academic and student support and administration. This erosion persists even when revenues rebound, meaning that over time there has been a gradual shift of resources away from instruction and towards general administrative and academic infrastructure.

The trend now being publicized warrants a critical look at the administrative structure of the university. While each university is unique, a bloated administrative structure is a common dilemma. "But administrative bloat is more than a matter of numbers. ….on campuses across the country professors can point to cases at their own institutions in a never-ending if demoralizing game of 'Can you top this?' On many of those campuses, administrators have found that they can brush off faculty charges of mismanagement…"

The internal auditor is in a unique position to be the objective consultant. Performing an analysis of the costs and the services of the various administrative areas could produce multi-tasking in some positions, elimination of some processes, or streamlining some areas, all of which would increase efficiency and produce cost savings. It is not uncommon to find two different areas of administration are performing the same function. The conclusion is that university administration should adopt the principle of *Occam's razor*, i.e. the principle that entities must not be multiplied beyond necessity.

D. Hot/Fraud Line

Is there a fraud or hot line for the university and is it published across campus? This is a vehicle that could be available to employees who do not want to complain directly to the supervisor. In businesses, hot/fraud lines do attract suggestions. If the line is part of a university system hot line, personnel on individual campuses may not have the confidence to use it. Care should be taken that the fraud/hot line is handled by an independent entity as that will instill confidence in the line and encourage participation.

E. The Information Technology System

The university's information technology system serves the university by a variety of functions. The initiation of on-line courses has brought multiple layers of risk to the university. With the myriad users, a university IT system must adopt controls that are sophisticated enough to handle threats and to minimize the risk of exploitation and harm by outside and inside the system users. Cyberattacks have become a modern form of perverted entertainment and attack. How recently has the IT department reviewed the university policies and procedures regarding all phases of IT? Basics such as: who controls all interfaces with the system; is permission required to install a program on the system (regardless of whether it is required for instruction or otherwise); has the firewall been tested recently; and can the current system handle today's mobile device support (wireless phones brought on campus need to associate with an IP [Internet Protocol] as this may not have been factored in usage requirements) should be addressed.

When was the last time the IT department conducted an assessment and evaluation (in terms of usefulness to the users) of all programs, beginning with the daily reports and moving on to weekly, monthly, quarterly and then annually? (One university claimed big savings in this area, by removing a daily report which the administration believed was quite useful but was actually accessed by few users.) Now that accounting and other financial software perform many prior manual paper processes, it is critical to have strong controls on access and input data, as well as access to files. Some issues include: Are files/programs available to employees who do not need these programs in their jobs? Is it possible to establish a closed environment (i.e. a user is not allowed access unless prior authorization has been provided) for critical information areas? If an employee leaves the university, is their access discontinued? Password protection should be reviewed and laddered controls should be in place.

One problem that a university discovered was that the IT decision-making and accountability for that decision did not rest with the same person. Administrators made decisions which affected the university without consulting the Chief Information Officer's advice. The entity resolved this issue by requiring decision-makers to sign a paper documenting that they are accountable for any IT decision that could expose the network to vulnerabilities. To date, no one

has signed such a paper because they simply found another way to accomplish the goal. Computer processing time is a costly limited resource.

F. Facilities Management Costs

While segregation of duties is widely acknowledged as best practice, many times it is not exercised. A review of areas which are "under the radar", for example, the power plant, facilities management, the Police Department, the radio station, the receiving department, and the warehouse should be incorporated in the assessment. Do these areas/departments take their own inventory and submit it to the proper administrative function? What is the limitation on their purchasing authorization? Are prenumbered forms used in all areas? How are costs collected and are they properly recorded? Are there job descriptions for all employees in all departments? Job descriptions are necessary for all positions as the description provides the competence and skill that are necessary to do the job, as well as the duties encompassed in the job. What are the promotion procedures and what skills should a manager possess and exhibit? All areas should be reviewed no matter how small. These may be areas that are not high on the audit rotation but the fact should not be overlooked that they could produce cost savings, particularly if they have been operating independent of oversight. The internal auditor should check if there are controls that are being followed or if there are any controls in that area. Without oversight, procedures tend to be "sloppy" and inefficient because accountability is lax.

G. Maintenance

In this economic environment, maintenance is often restricted or postponed, causing a deviation from the planned maintenance schedule. Many times maintenance is reactive rather than proactive. Such activities create chaos and an opportunity to circumvent controls and to incur cost overruns. What is the limit on the maintenance procurement card? Is the purchasing limited to certain vendors? Who manages the maintenance schedule and who is allowed to change this schedule? Particular attention should be spent on costs in this area as it is extremely vulnerable to cost overruns and abuse.

H. Procurement card controls

Are there sufficient controls and limits on the procurement cards distributed by the university? Are purchases restricted to approved vendors? Are employees able to share the procurement card with other employees? Is it possible to create an unauthorized card or user? When was the last time an inventory of cards was conducted? Are policies regarding the usage of the cards communicated to the employees? When was the last time the limits were reviewed? Do supervisors review and approve the charges on a regular basis? Is there an independent review

and reconciliation of these charges? How regularly? Are expenses allowed within the university guidelines communicated to all card holders? Is the policy applied to everyone? There have been many publicized events when employees (including Deans) have used these cards for personal purchases through Home Depot, Department stores, and even Victoria's Secret. The internal auditor should have the answers to these questions through the self-assessment process whether it is under the Accounts Payable office or the Finance office. Certainly no one wants the university embarrassed by negative publicity.

I. Motor Vehicles and Transportation costs

Vehicle purchase, maintenance and gasoline expense, as well as transportation intra-campus or around campus will sum to a significant amount. A review of usage of vehicles may lead to suggestions of the possibility of down-sizing the fleet thus effecting cost savings. Can the fleet of automobiles for the police department/maintenance personnel be diversified by using golf carts or mopeds or a Segway for usual intra-campus activities? Many universities use standard size buses for transportation around campus. An assessment should be made of the use of these buses as perhaps the standard size buses could be replaced by a smaller/more economical bus. With the price of gasoline being so volatile, the use of gasoline becomes a matter that should not be overlooked. Who is entitled to a university car or a university gasoline card and is this person considered critical personnel? When was this list last reviewed? How/for what purpose are university cars used off campus? When was insurance on university vehicles last reviewed? Review and assessment by the administrator in charge of transportation could prompt discussion and actions leading to cost savings.

J. Parking Services

The costs associated with maintaining the registration of vehicles and vehicle identification (hang tags or decals or window/bumper stickers) for university faculty and staff, as well as visitors, should be examined. Also, the method and procedures of policing parking in university lots should be re-assessed. Much time, expense, and police personnel have been spent in determining whether cars are properly parked on campus. Historically, many schools provided gated lots with card or electronic admission as well as ungated lots where a police officer manually checks the hang-tag or window/bumper sticker to see if the vehicle is legally parked in the lot. New systems replace the "manual" system with an electronic license plate recognition (LPR) system which allows automatic capturing of license plate numbers to enforce parking permits. Also, many universities have installed parking meters that accept both cash and credit card payment in areas that previously did not produce revenue.

K. Cash & Events Management

At any place where there is collection of cash, segregation of duties is the best prevention.

The cashier should not be collecting the cash and at the same time adjusting the student's account. Checks should be secured and signature authority should be restricted. Auditors know that when and where cash transactions occur, strict procedures should be in place. Yet, articles citing embezzlement from the university continue to appear. Prenumbered receipts or register receipts should always be given. Policies regarding the handling and reconciliation of revenue from parking, parking fines, sporting events, theater events, music events, and other events should be reviewed by the internal auditor.

For campus events, one person should collect the money and another person should collect the tickets when the patron enters the theater or arena. How much oversight is exercised over the tickets, as well as the receipts? All tickets should be prenumbered (enabling reconciliation of tickets sold and cash). Can someone reverse the sale of a ticket to a complementary ticket thus allowing for the theft of cash? This was a multimillion dollar ticket fraud at a sports event which resulted in embarrassment for a university! When various clubs raise funds, does a department have oversight over these events? When the fraternities/sororities have fund-raising events, who has oversight? While this may seem petty, it should be remembered that this is simply part of mitigating risk, preventing fraud, and saving the institution from embarrassment.

L. Confidentiality of records

Does a policy or list determine what documents and records require confidentiality? Is there a confidentiality policy? Is it being communicated and followed? Is it the manager's responsibility to assure confidentiality in his/her area? Privacy laws require extra care and attention to record confidentiality. Sometimes, an employee may feel overwhelmed by the paperwork and carelessness will result. For example, files in administrative offices are reorganized after a graduation and the new student files need to be incorporated into the system. Are the files left out on an empty desk or table? Is that desk or table secure (i.e. not in a place that makes the files accessible to anyone who enters the area)? Are confidential records and files shredded before being recycled? Are there policies controlling retention of documents and the disposal of all types of sensitive files or records? When was the last time these policies were reviewed and communicated? Considering employee turnover, these policies should be identified as part of the assessment not just because of the inefficiencies but such carelessness could lead to a lawsuit against the university because of privacy issues.

In this connection, how secure are the records, files and even buildings on campus? Are the rooms where files are stored locked or at least restrict access? If a laptop is lost or stolen, is the information protected? One university lost 950 computers. Given the technology required for today's classrooms, open access to buildings is a risk factor. An inventory of keys should be taken

annually (to ensure only authorized access). Consideration should be given to keyless entry, thus reducing opportune access for a thief. Can access be converted to either a card swipe (as in hotels) or by numbers. There should be a policy that when one leaves the university, he/she must surrender their computer/laptop and keys.

M. Profit Centers and Fees

The profit centers of the university should be included in the assessment – because of changes in the environment. The bookstore has much more competition today. The assessment process should compare the profit margin to other universities.

All contractor/subcontractor contracts should also come into consideration. There should be oversight of the food costs by an experienced knowledgeable person in administration, as well as the cafeteria manager. If a change in vendor is contemplated, the residual to the university should be negotiated in order to assure fairness and profitability for the university. This same review extends to the vending machines provided on campus.

N. Common Costs

These are mundane costs that may not have been reviewed for some time. Cleaning of the campus buildings (which sometimes includes clearing of walkways during inclement weather) is often outsourced. There is a plethora of cleaning companies but price should not be the sole criterion. The employees should be bonded and several of the cleaning company's current customers should be contacted. Pest control services should also be reviewed to determine if a better price and service can be obtained. Landscaping and lawn services are also often outsourced. This is an area where the funds can be stretched. Local landscaping companies should compete for the opportunity to landscape the campus, or provide lawn services. This should be a competitive negotiated decision and not one influenced by politics or friendships. The assessment process should include estimates from several local firms to assure that the university is getting the best price for this service. The administrator in charge of these costs should identify, for the internal auditor, if there are other priorities such as awarding contracts to a minority business or to a firm that uses strictly green products.

Trash disposal should be reviewed as this too has become a competitive field. We become complacent with the status quo but perhaps more savings can be obtained by switching companies. Has the university started a recycling program? Is single stream recycling possible? This will help to reduce the amount of waste thus reducing waste disposal costs. Is the university disposing of lab experiments properly (and in accordance with grant conditions and regulations)? Is there compliance with environmental regulations? Does the university have a waste to energy program?

Basics such as telephone and electricity should not be overlooked for cost savings. With the technological improvements that are available today, it may cost less to upgrade these utilities

to a more efficient system and realize savings. For example, installation of lights that switch on only when one enters the area, could probably be justified by the savings.

O. Compliance with laws and regulations

The assessment process would provide the ideal opportunity to conduct a review of the laws and regulations impacting the university as this could also serve to update the risk assessment. For instance, since 1990, federal law has required colleges and universities to put in place procedures for timely emergency notification when dangerous situations arise. Who determines when a situation requires emergency notification? Has your emergency notification system been tested lately? Security experts are worried that universities are over-reacting to situations which could lessen the seriousness of such alerts.

CONCLUSION

To answer President Obama's call for more cost effectiveness and efficiency in today's colleges and universities, a self-assessment process of the administrative side of the university is suggested. Tying this self-assessment to a review of internal controls should help to identify cost savings, identify process inefficiencies, and possibly reduce risk. In addition, assessing the processes and the quality of performance over time, assures that the objectives of the university are accomplished, and reminds everyone in the organization that they must bear some responsibility for the effectiveness of operations. The internal auditor is suggested as the driver of the self-assessment process with the endorsement of the executive administrators. Some costs and areas in this process analysis are discussed because they may not have been audited for some time or they may be considered low risk. These areas may produce significant cost savings.

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