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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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EXAMINING TOLERANCE FOR AMBIGUITY IN THE DOMAIN OF EDUCATIONAL LEADERSHIP

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ABSTRACT

The tolerance for ambiguity (or intolerance for ambiguity) construct relates to a person's disposition or tendency in addressing uncertain situations. Research literature has pointed out that tolerance for ambiguity (TFA) or intolerance for ambiguity (INTFA) influences an individual's behavior, which in turn affects leadership style and decision making process. While studies in multiple fields (e.g., business, medicine) have addressed the value of understanding a person's level of TFA, little information can be found in its application to school administrators, e.g., principals. This research advances the study of the TFA construct in the domain of educational leadership through the development of a scale for use with prospective and practicing school administrators. A sample of 326 early career principals and principal trainees was surveyed in this study. Through the use of a factor analysis and reliability examination (Cronbach's alpha), an instrument was developed that shows promise in evaluating TFA levels.

INTRODUCTION

The principal, who is the instructional leader of a school, is central to the effectiveness of students' academic outcomes (Barth, 2001; Lunenburg & Ornstein, 2004). Moreover, the campus leader directs the infusion of a moral order in the school community, embracing values and beliefs that drive the purpose and meaning of the organization (Sergiovanni, 2000). Administratively, the principal is expected to multitask, handling unexpected diverse situations that require either quick reaction or long term planning. For example, what is the school leader's response to a group of disgruntled parents who suddenly appear at school end, accompanied by a local news station reporter and cameraman, as elementary students are being directed to their assigned school buses, while other parents are waiting to pick up their children? The principal's timely decision making process encompasses student safety, community responsiveness, school district policy, and professional etiquette. Having an understanding how a school leader will respond in ambiguous or uncertain situations, especially in times of adversity, is critical since the leader's actions can greatly impact the lives of hundreds or possibly thousands of students, including campus staff.

With the growing occurrence of uncertainty in today's society (Visser, 2003), school leaders need to exercise a high tolerance for ambiguity (TFA). Research literature has noted that tolerance for ambiguity (TFA) and intolerance for ambiguity (INTFA) have been found to influence people's behavior, be linked to interpersonal skills, leadership styles, and performance levels (DeRoma et al., 2003; Owen & Sweeney, 2002). In a study of the Bridgeport School District, TFA was identified as a key personal trait for the effectiveness of school leadership teams (*The Bridgeport Study,* 2002). Thus, principal preparation programs

need to develop curriculums and pedagogies that foster the development of knowledge, skills, and dispositions so school leaders effectively respond to the complexity and ambiguity of school environments that include human, cultural, and political elements. While the literature refers to the value of TFA for school leaders (e.g., Patterson, 2001), little empirical research exists on the topic of TFA as applied to a school principal's disposition (and consequential behavior). This paper advances the study of the tolerance for ambiguity construct in the context of school leadership by providing (1) a literature review on TFA, (2) instructional strategies to better prepare school leaders in handling ambiguous situations, (3) an empirical study in developing a TFA scale for school leaders, and (4) implications for future research on TFA.

LITERATURE REVIEW ON TOLERANCE FOR AMBIGUITY

Definition of Ambiguity

Research on ambiguity and its psychological elements has occurred since the 1950s (Sweeney & Owens, 2002). In general, the term ambiguity is referenced as vagueness of words and uncertainty of conditions or situations where multiple interpretations or views, although at times contradictory, can be present (Visser, 2003). In everyday life, ambiguity can occur when one routinely interacts with numerous meanings, uncertainty, incompleteness, vagueness, contradictions, probability; as well as lack of clarity, structure, information, and consistency (Norton, 1975). Situational ambiguity results from three major sources: (a) novelty, i.e., new situation where no familiar signs exist; (b) complexity, i.e., large number of cues need to be taken into consideration; and (c) insolubility, i.e., situation that is contradictory in nature where different cues purport differing arrangements (Budner, 1962).

Definition of Tolerance and Intolerance for Ambiguity

How one interacts with ambiguity in knowledge and nature reflects a person's cognitive and affective style (Stoycheva, 2003). Ambiguity tolerance has been described as "the way people perceive, interpret, and react to ambiguous situations" (Stoycheva, 2002, p. 35). The way a person perceives, construes, and responds to uncertain situations determines one's level of tolerance for ambiguity (Stoycheva, 2002). The ambiguity tolerance construct is rather complex because of the multiplicity of variables, including various types of situations, perceptions, and other factors, e.g., predictability (Benjamin et al., 1996).

One who is characterized as intolerant of ambiguity tends to view and construe ambiguous situations as a cause of psychological uneasiness or anxiety, or possibly a threat; thus, the ambiguity is viewed as confusing and something to avoid (Stoycheva, 2003). For instance, if a person views a situation as threatening instead of promising, then intolerance for ambiguity probably exists (Budner, 1962). It was found that people who demonstrate intolerance for ambiguity prefer the realm of stereotypes and concrete notions, instead of the sphere of probability and uncertainty (Geller et al., 1993). While much of the literature equates intolerance of ambiguity (IA) and intolerance of uncertainty (IU), researchers have pointed out that a distinction can be made between the two concepts; that being, IA refers to the present circumstances as a cause of threat and IU relates to the future prospect of a negative result (Grenier, Barrette, & Ladouceur, 2005).

One who is characterized as tolerant of ambiguity tends to have the capacity to recognize and analyze an ambiguous condition in a practical manner without disallowing or distorting elements of its complexity

(Stoyvecha, 2003). This type of disposition enables a person to be more adaptive, and endure the anxiety and discomfort of an uncertain situation, allowing more time to generate alternative responses to the situation (Visser, 2003). An individual with a higher tolerance for ambiguity has the propensity to seek feedback less often than one with a lower tolerance (Bennett et al., 1990). The TFA disposition tends to display a risk taking approach as well as resiliency in adversity (DeRoma et al., 2003; Patterson, 2001), and views uncertain situations as desirable (Budner, 1962). Beitel et al. (2004) found a positive relationship between TFA and psychological mindedness, which is associated with a cognitive profile that includes tendencies for realistic thinking, flexibility, and personal agency.

Research on Tolerance and Intolerance for Ambiguity

Research on tolerance for ambiguity (TFA) and intolerance for ambiguity (INTFA) can be found in organizational, social behavioral, and leadership studies (e.g., Bennett et al., 1990; Budner, 1962; Clampitt & Williams, 2000), as well as in the professions of business (e.g., Bakalis & Joiner, 2004; Lamberton et al., 2005; Lane & Klenke, 2004), and medicine (e.g., Geller et al., 1993; Schor et al., 2000; Sherrill, 2005). The following chart lists many of the characteristics displayed by people who tend to be TFA or INTFA, based on the literature.

Table 1. Tolerance and Intolerance for Ambiguity Characteristics

Tolerance for Ambiguity Characteristics	Intolerance for Ambiguity Characteristics
• Collaborative as well as receptive to working in cross-cultural environments (Bakalis, 2004)	• Dogmatism, authoritarianism, conformity, rigidity, and ethnocentricity (See Bakalis & Joiner, 2004; Geller et al., 1993)
• Psychological mindedness (Beitel et al., 2004)	
• Tend to not seek feedback, except in context of job advancement (Bennett et al., 1990)	• Stress and anxiety to uncertainty; tend to seek feedback, except when job-specific (Bennett et al., 1990)
• Associated with suspending closure, having a tolerance for failure, taking risks, and monitoring self (Blau, 2003)	• View an uncertain situation as threatening (Budner, 1962)
• View an uncertain situation as desirable (Budner, 1962)	• Uncomfortable with unstructured courses and grading criteria, and tasks with multiple answers/options (DeRoma et al., 2003)
• TFA as a predisposition to critical thinking; open-mindedness; flexibility, independent and integrative thinking; positive approach to risk taking (DeRoma et al., 2003)	• Attraction to structured elements in learning, finding only one solution and bring closure to the process, instead of multiple alternative solutions; rigidity (Furnham, 1994) (See (DeRoma et al., 2003)
• Flexibility, discovery, creativity, reflectiveness, action research, lifelong learning, and leadership are intertwined (Huber, 2003)	• Stereotyping favored over probability thinking (Geller et al., 1993)
• Entrepreneurship, adaptability, creativity, and innovation (Lane & Klenke, 2004)	• Successful with repetitive activities; mechanical, rule-driven (Lamberton et al., 2005)
• Favor motivational methods and interpersonal relations over professional behaviors and class structure in teaching, in context of instructor	• Tendency to refuse to identify and admit uncertainty in contexts (Sallot & Lyon, 2003)

Table 1. Tolerance and Intolerance for Ambiguity Characteristics

Tolerance for Ambiguity Characteristics	Intolerance for Ambiguity Characteristics
evaluations (Norr & Crittenden, 1975) • Resilient and flexible (Patterson, 2001) • Believe they can solve complex problems; enjoy instruction that helps to explore new perspectives (Sallot & Lyon, 2003) • Risk taker, low anxiety, self-confident, creative, e.g., open to new ideas, explore options (cognitive complexity), and abstract thinking (Stoycheva, 2003) • Thrive on challenges (Taylor, 2000) • Conceptual and analytical decision making style method (alternative solutions) to address situations (Williams, 2006) • Tendency for developer style of management, having a interpersonal relationship approach (Yaffa, 2003)	• Tendency for insecurity and anxiety; poor self-evaluation regarding humanistic orientation and idealism (Stoycheva, 2002) • Overwhelmed by challenges (Taylor, 2000) • Tendency for benevolent and/or autocratic style of management, having a task-orientation (Yaffa, 2003) • Tendency to distort information (Yurtsever, 2001) (See DeRoma et al., 2003)

Business

Many research studies address tolerance for ambiguity (TFA) in the context of business (e.g., Bakalis & Joiner, 2004; Gupta & Govindarajan, 1984; Hallinger & Snidvongs, 2008). Major workplace consequences connected to TFA have been found in the areas of (a) employee interests/ability versus job responsibilities, (b) worker turnover, and (c) company commitment to employees (Lamberton et al., 2005). Bennett et al. (1990) found that one's level of TFA influences a person's decision to ask for feedback. In general, those characterized as INTFA seek more feedback more often than those described as TFA. However, exceptions to this general rule were found. Those depicted as INTFA tended to lack motivation in asking for feedback on job-specific matters, while those with TFA orientations were likely to request feedback on job advancement issues (Bennett et al., 1990).

In a study by Lamberton et al. (2005), outcomes suggested that accountants who have high interests in information technology (IT) are more at ease with ambiguous problem-solving circumstances, especially those situations requiring a high degree of creativity. Elias (1999) found that nontraditional accounting students had a higher TFA than traditional ones, suggesting that nontraditional students may have more of the attributes (e.g., less apprehensive or fearful in oral and written communications) in handling uncertain situations (e.g., audits).

Huber (2003) points out that TFA's attributes of flexibility and creativity are becoming increasingly valuable as businesses address the unpredictability and change process of globalization. For organizations to survive in a complex world with varying demands from different constituents, leaders must be able to embrace uncertainty to be effective, demonstrating characteristics of entrepreneurship, adaptability, and innovation (Hallinger & Snidvongs, 2008; Lane & Klenke, 2004). TFA is a key disposition in the

development of a successful entrepreneur (Michigan Ross School of Business News & Media, 2004), since innovation and creativity necessitate a certain level of tolerance for ambiguity (Lumpkin 2004). To address the diversity of workforce in a global business environment, two personality attributes are critical: tolerance for ambiguity and openness; this latter characteristic is associated with risk taking, open-mindedness, collaboration, as well as receptivity to work in cross-cultural environments (Bakalis & Joiner, 2004). Thus, a person's tolerance for ambiguity should be viewed as a valued trait in the hiring process.

Medicine

Tolerance for ambiguity (TFA) has been researched in the field of medicine (e.g., Budner, 1962; Geller et al., 1993; Schor et al., 2000; Sherrill, 2005). Budner (1962) found that medical students with a tolerance for ambiguity tend to select fields of medicine that are relatively unstructured, e.g., psychiatry, while those students with an intolerance for ambiguity are incline to choose fields that are more structured, e.g., surgery. In their study, Geller et al. (1993) noted that physicians with an INTFA disposition tend to act paternalistic in their practice of medicine, displaying characteristics of being rigid, authoritarian, and dogmatic; apt to neither discuss the uncertainty of a situation nor respect the autonomy of patients in medical decisions. Schor et al. (2000) call for research to determine whether a relationship exists between the attitudes of medical students to clinical uncertainties and medical schools' institutional environment; since sociological literature has reported that medical school training promotes resistance to criticism and denial of ambiguity. Sherrill (2005) found that TFA can serve as a promising indicator of leadership capability in the selection of physicians who desire to undertake managerial study for future executive assignments. Taylor (2000) suggests that nurse educators need to recognize the existence of a continuum of TFA among care providers in clinical settings, and the value of developing pedagogical techniques to effectively facilitate the administration of uncertain situations.

School Leadership

Limited empirical research exists regarding the impact of tolerance for ambiguity (TFA) and intolerance for ambiguity (INTFA) on school leadership behavior and consequential managerial approaches. Sample studies on school leadership and TFA include a correlation between TFA/INTFA and administrative styles (e.g., autocratic, democratic) of high school principals (Yaffa, 2003). Yaffa (2003) found that principals who practice benevolent and/or autocratic managerial style (task orientation) tend to have low TFA, while school leaders who engage in a developer approach (i.e., people orientation) in leadership tend to have high TFA. Anfara et al. (2000) found high TFA to be a key characteristic of effective middle school principals. Patterson (2001) notes that superintendents who can effectively handle unfamiliar situations and unpredictable setbacks can strengthen their resiliency as a school leader. School principals who practice a combination of conceptual and analytical decision-making approaches tend to develop multiple alternatives in addressing issues (Williams, 2006). This use of cognitive complexity demonstrates a propensity to possess a high degree of tolerance for ambiguity; a major indicator for successfully maintaining and sustaining schools (Williams, 2006).

Instructional Strategies in Preparing for Ambiguity Tolerance

Visser (2003) indicates that the culture of the educational system needs to reflect the culture of society. Since the occurrence of uncertainty is increasing in society, curricular and pedagogical approaches in schools need to prepare learners with knowledge, skills, and dispositions, as well as experiences in multiple contexts to better interact with a highly ambiguous societal milieu (Visser, 2003). The research literature outlines various types of instructional/learning processes beneficial to promote TFA among students (e.g., Banning, 2003; Bennett et al., 1990; Norr & Crittenden, 1975). In studying TFA in the context of five aspects of teaching (i.e., interpersonal relations, motivation, professional behavior, structure, and assignments/evaluations), Norr and Crittenden (1975) found that students high in TFA favor interpersonal relations and motivation over structure and professional conduct in the educational process.

The learning process should address students' tolerance for ambiguity with critical thinking strategies to better prepare for the unstructured components and complexities of life, using pedagogical strategies that include cooperative group learning, process-oriented techniques, and creative thinking methods (DeRoma et al., 2003). Huber (2003) recommends that instruction includes scientific inquiry (i.e., deductive methodology), hands-on assignments, and applications of alternative solutions development, reflection, and non-linear thinking processes. This latter point (i.e., non-linear methodology) is supported by Oblinger and Verville (1998) who note the value of a systems/flexible thinking approach and by Rowland (2003) who points out that systems thinking should be incorporated into authentic activities and situations that are complex, nonlinear, and unpredictable (Lamberton et al., 2005). Torp and Sage (2002) indicate that problem-based learning provides an organized, structured process where a hypothesis-driven reasoning is used to adjust to ambiguities (Visser, 2003).

Tolerance for ambiguity can be improved by using the case study method (Banning, 2003; Sallot & Lyon, 2003) as well as simulations and reflective writing tasks linking theory and practice, explaining the rationale for decisions. Reflective experiences can help students realize they have common concerns and anxieties with regard to ambiguous situations (Levitt & Jacques, 2005). The elaboration theory (English & Reigeluth, 1996) can provide a structural process through a sequence of elaborations (e.g., heuristic task analysis) in addressing a complex situation (Reigeluth et al., 2003; Visser, 2003). Suzawa (2003) suggests the use of the "thinking aloud" process (Bloom & Broder, 1950) as a teaching strategy to promote active learning, especially in large class settings; a technique that allows the exchange of ideas to arrive at a solution to a problem.

Study results of Sallot and Lyon (2003) suggest that while portfolio assessment is a viable instructional strategy to assist students in becoming more effective public relations writers, students with low TFA tend to view portfolio grading as insufficient because it does not adequately reflect their in-class work. Bennett et al. (1990) point out that in general those who tend to be intolerant of ambiguity request more feedback than those who are TFA. Thus, guidance needs to be provided to those low in TFA during ambiguous situations, responding to their reactions of stress and anxiety; while giving feedback to those high in TFA in correcting identified performance errors (Bennett et al., 1990).

Huber (2003) indicates that instruction for developing TFA should be viewed as a lifelong learning process, with an emphasis on action research, using investigative methodology, focused on creating knowledge; instead of simply replicating and verifying existing information. Homework assignments should be designed to address open and closed-ended problems with opinion questions about human affairs issues,

with opportunities to work in small groups (Suzawa, 2003). In the context of a novel experience, in this case a study abroad program, Bakalis & Joiner (2004) conclude a block approach to teaching may be more effective for students with low TFA. In describing the characteristics of those who become competent in performance literacy (reading), Blau (2003) associates tolerance for ambiguity with risk taking, suspending closure, forbearance with failure, and the ability to self-monitor.

PURPOSE OF PRESENT RESEARCH

This paper advances the study of the tolerance for ambiguity construct in the context of school leadership by providing empirical results. The purpose of the present research is to identify the validity and reliability of a new scale designed to measure TFA and INTFA in the domain of educational leadership. A viable tolerance for ambiguity scale for measuring prospective and current administrators (e.g., assistant principals, principals) can serve as a useful assessment tool by (1) school districts in the hiring procedures of campus administrators, (2) college and university preparation programs in strengthening candidates' dispositions in future leadership careers, and (3) principal candidates and practicing campus leaders to self assess and choose professional development activities to strengthen their knowledge, skills, and dispositions.

Various scales, based on cognitive constructs, have been developed to quantify a person's tolerance and intolerance for ambiguity including Budner (1962); Rydell and Rosen (1966); McDonald (1970); Norton (1975); Bhushan and Amal (1986); McLain (1993); and Furnham (1994) (see Benjamin et al., 1996; Grenier et. al., 2005; Owen & Sweeney, 2002). Grenier et al. (2005) indicates that Budner's scale (1962) is the most cited, as well as used for the evaluation of intolerance of ambiguity levels.

Instead of creating an instrument with statements addressing the issues surrounding ambiguity in the domain of educational leadership to conduct a factor analysis, two scales previously used to measure tolerance/intolerance for ambiguity in other domains were administered. The two instruments were Budner's (1962) Scale of Tolerance-Intolerance of Ambiguity and McClain's (1993) MSTAT-I (Multiple Stimulus Type Tolerance for Ambiguity Test). Budner's instrument has sixteen (16) items using a Likert 1-7 response approach. The MSTAT-I instrument, which is an updated version of previous cognitive construct scales, lists twenty-two (22) items using a Likert 1-7 response mechanism.

These two scales were used since both have been found to be reliable and use a Likert 1-7 response method. Budner's scale has been reported as reliable with Cronbach's alpha outcomes ranging from .39 to .62, along with an alpha of .85 on test-retest (Budner, 1962; MacDonald, 1970; Sallot & Lyon, 2003). Although studies have found reliability to be low (Benjamin et al., 1996; Sallot & Lyon, 2003), Budner's work is viewed as seminal research in the area of tolerance and intolerance for ambiguity (Owen & Sweeney, 2002; Sallot & Lyon, 2003). McLain's instrument is reported as having an alpha of .86, and a "significant positive correlations with the Budner and MacDonald scales" (Owen & Sweeney, 2002. p. 2) and noted in the TFA literature as more reliable in comparison to other instruments (Sallot & Lyon, 2003). Similar response mechanisms of both instruments provided consistency of delivery to ascertain the interconnectedness of scales.

This exploratory study will determine the number of factors derived from the two scales with regard to the domain of educational leadership. This factor analytic evidence will provide an initial foundation for the study of the instruments in the context of educational leadership. Furthermore, Cronbach's alpha for each of the subscales derived will be calculated and reported.

METHOD

Participants

The sample consisted of 326 graduate students in an educational leadership program in a mid-sized university, situated in the southwestern part of the United States. These graduate students, who are typically classroom teachers, have chosen to take advanced coursework to acquire principal certification, required for school administration positions, e.g., assistant principals. Two-hundred forty-four (244) of the participants were females, and 82 were males; having a mean age of 34.8 years (SD = 7.5). The mean experience teaching of the sample was found to be 8.2 years (SD = 5.41); while the mean administrative experience resulted in 1.7 years (SD = 7.2). The mean GPA of the students in the sample was 3.83 (SD = 1.2) on a 4-point scale. One-hundred fifty-two (152) of the participants were Caucasian, 91 were Hispanic, 67 were African-American, eight (8) were Asian, three (3) were Native American, and five (5) were self-described as "other."

Instruments

Instruments used in this study consisted of two previously created instruments to measure tolerance/intolerance for ambiguity. The two instruments were Budner's (1962) Scale of Tolerance-Intolerance of Ambiguity and McClain's (1993) MSTAT-I. Past psychometric properties of these instruments include reliability, convergent, and discriminant validity evidence for the MSTAT-I (see McClain, 1993). Although weak reliability evidence for Budner's Scale has been reported, it is cited most and applied for evaluating INTFA levels (Grenier et al., 2005; Sallot & Lyon, 2003). In both instruments, participants scored items using a summated rating scale with a range from 1 indicating the statement is "not at all true of me," to 7 denoting "completely true of me." In Table 2, statements in Budner's Scale are listed with the letter B and McClain's Scale with M.

Procedures

The two instruments with a total of 38 brief statements were administered to the sample, in clusters of approximately 30 graduate students. Participants first gave their informed consent, and then completed both instruments through a paper and pencil administration.

RESULTS

Using a principal axis factoring method based on an eigenvalue greater than 1 criterion, six factors were extracted and rotated using a varimax technique. The five remaining factors accounted for 55.1 percent of the variance in the data. The first factor, which accounted for 15.1 percent of the variance, is best labeled "general intolerance of ambiguity." The second factor reflected a "general tolerance of ambiguity" and accounted for 11.9 percent of the variance. The third factor, a "desire for familiarity," accounted for 10.9 percent of the variance. The fourth factor, accounting for 9.4 percent of the variance, was a "desire for new perspective." The fifth factor was a "desire for change" and accounted for 4.9 percent of the overall variance. The sixth factor, which accounted for 2.9 percent of the overall variance, was extracted and rotated but was

not interpretable; therefore was considered error and dropped. Six of the statements from the two scales (i.e., M 8., M 22., B 1., B 2., B11., and B 14.) were excluded (and not found in Table 2) because they did not load strongly enough on any factor, based on a factor loading of at least .4 for purposes of statistical significance (see Hair, Anderson, & Tatham, 1987).

Table 2. Factor Analysis of Tolerance for Ambiguity

Items		Factor Loadings					
		1	2	3	4	5	6
M 1.	I don't tolerate ambiguous situations well.	**.68**					
M 2.	I find it difficult to respond when faced with an unexpected event.	**.53**					
M 5.	I would rather avoid solving a problem that must be viewed from several different perspectives.	**.52**					
M 6.	I try to avoid situations which are ambiguous.	**.76**					
M 9.	Problems which cannot be considered from just one point of view are a little threatening.	**.57**					
M 10.	I avoid situations which are too complicated for me to easily understand.	**.55**					
M 11.	I am tolerant of ambiguous situations. (-)	**-.55**					
M 13.	I try to avoid problems which don't seem to have only one "best" solution.	**.46**					
M 16.	I dislike ambiguous situations.	**.66**					
M 3.	I don't think new situations are any more threatening than familiar situations.		**.48**				
M 4.	I'm drawn to situations which can be interpreted in more than one way.		**.50**				
M 7.	I am good at managing unpredictable situations.		**.65**				
M 12.	I enjoy tackling problems which are complex enough to be ambiguous.		**.53**				
M 17.	Some problems are so complex that just trying to understand them is fun.		**.59**				
M 18.	I have little trouble coping with unexpected events.		**.48**				
M 19.	I pursue problem situations which are so complex some people call them "mind boggling."		**.57**				
M 21.	I enjoy an occasional surprise.		**.55**				
B 3.	A good job is one where what is to be done and how it is to be done are always clear.			**.61**			
B 4.	In the long run it is possible to get more done by tackling			**.65**			

Table 2. Factor Analysis of Tolerance for Ambiguity							
Items		Factor Loadings					
		1	2	3	4	5	6
	small, simple problems rather than large and complicated ones.						
B 5.	What we are used to is always preferable to what is unfamiliar.			**.58**			
B 6.	A person who leads an even, regular life, in which few surprises or unexpected happenings arise, really has a lot to be grateful for.			**.47**			
B 8.	The sooner we all acquire similar values and ideals the better.			**.66**			
B 9.	I would like to live in a foreign country for a while.				**.54**		
B 10.	People who fit their lives to a schedule probably miss most of the joy of living.				**.43**		
B 12.	Often the most interesting and stimulating people are those who don't mind being different and original.				**.71**		
B 13.	People who insist upon a yes or no answer just don't know how complicated things really are.				**.44**		
B 16.	A good teacher is one who makes you wonder about your way of looking at things.				**.53**		
M 14.	I often find myself looking for something new, rather than trying to hold things constant in my life.					**.72**	
M 15.	I generally prefer novelty over familiarity.					**.73**	
M 20.	I find it hard to make a choice when the outcome is uncertain.						**.43**
B 7.	I like parties where I know most of the people more than ones where all or most of the people are complete strangers. (-)						**-.42**
B 15.	Teachers or supervisors who hand out vague assignments give a chance for one to show initiative and originality.						**.59**

The reliability coefficients (Cronbach's Alpha) were in the .60 to .80 range for four of the five factors. Given that only two items remained for factor 5, reliability was not computed since the reliability coefficient is negligible (more items were needed).

Table 3. Subscale Correlations (and Reliabilities)					
Subscale	1	2	3	4	5
1. GiToA	(.80)	-	-	-	-
2. GToA	-.48	(.74)	-	-	-
3. DfF	.38	-.46	(.66)	-	-
4. DfNP	-.22	.57	-.27	(.62)	-
5. DfC	-.21	.35	-.27	.63	(NC)

Note: GiToA = General Intolerance of Ambiguity; GToA = General Tolerance of Ambiguity; DfF = Desire for Familiarity; DfNP = Desire for New Perspective; DfC = Desire for Change

DISCUSSION

Current Research Study

The results offer factorial and discriminant validity (subscales are separate), as well as reliability evidence. These results suggest that the combination of statements from these two scales (Budner, 1962; McClain, 1993) into one instrument can serve as a viable tool in identifying and gauging future or current school leaders' levels of tolerance or intolerance for ambiguity. Consequently, it can be an instrument with both formative and summative assessment qualities to (1) diagnose/gauge the development of aspiring school principals enrolled in university preparatory programs to determine the types of professional development for students, so they can be better prepared to handle ambiguous or uncertain situations; (2) assist in the hiring process of school leaders to better understand/predict applicants' dispositions in working in a campus environment that tends to have situations of ambiguity/uncertainty; and (3) allow current school administrators to self-assess their levels of TFA to better design their own professional development needs to strengthen their capability as school leaders.

With regard to the use of the TFA instrument in school administrator preparation programs, graduate students could be administered the scale as a pre, mid, and post assessments to gauge their dispositions (e.g., collaborative, empathetic, fair) toward meeting the expectations of school leadership, encompassed in national administrator standards, e.g., Educational Leadership Constituent Council (ELCC). Researchers have addressed the association between these national standards and the effectiveness of school leadership in promoting student success (Kaplan, Owings, and Nunnery, 2005).

In the process of hiring school administrators, school districts' Office of Human Resources could use the TFA instrument as a mechanism to better determine applicants' levels of tolerance for addressing ambiguous situations that often occur in school environments. This is critical since an individual who is intolerant of ambiguity will likely react to uncertain situations with anxiety and stress (Bennett et al., 1990). This scale along with other assessment tools (e.g., resume, letters of recommendation) could provide a more comprehensive portrayal of candidates' dispositions as well as capabilities and understanding toward implementing sound leadership practices, e.g., collaboration.

In the practice of self-assessing their dispositions, school administrators could apply the TFA instrument as a formative and summative tool to determine their tolerance or intolerance for ambiguity; thus, helping them select professional development (e.g., interpersonal communication techniques) to strengthen their abilities to successfully lead and manage a school community. "Self-directed professional development involves the administrator engaging in self-assessment, setting personal/professional improvement goals, planning learning activities designed to meet the stated goal, implementing the plan, assessing progress, and then entering into a new cycle of action planning" (Gordon, 2004, p. 149). The cognitive process of self-regulated learning where the school leader self-assesses needs; self-selects and plans relevant professional development to meet needs, seeking outside help if needed; self-monitors procedures; and self-evaluates learning outcomes can facilitate the progress in becoming an accomplished self-learner and successful school leader (McCollum et al., 2006b; Ormrod, 2006).

Further Research Study

Further development of the TFA instrument could occur with a confirmatory factor analytic study. Moreover, additional TFA scales, e.g., the Measure of Ambiguity Tolerance (MAT-50) instrument (Norton, 1975), could be applied. The MAT-50, with 61 statements, has been found to possess content validity (adequate level), construct validity (good), and criteria-related validity (strong), as well as high internal reliability (r = .88) and test-retest reliability (r = 86) (Norton, 1975). Furman (1994) notes an alpha of .89 for the MAT-50 (Benjamin et al., 1996).

Moreover, correlational research could take place between the TFA instrument and self-efficacy scales, e.g., School Administrator Efficacy Scale (McCollum et al., 2006a; 2006b) to determine the association between school leaders' TFA and self-efficacy. This would be especially important since effective campus administrators, e.g., principals, tend to be highly efficacious (e.g., McCollum et al., 2006a; 2006b). Prior research in the development of effective counselors provides insight and direction toward the connection between TFA and self-efficacy. Levitt & Jacques (2005) point out that self-efficacy and trust are key elements in the formation of successful counselors, since uncertainty is an element of the counseling process. Because of the complexity of the counseling process (e.g., addressing the unknown), counselors need to be assured of their capabilities, especially where anxieties occur about the correctness of the counseling direction (Levitt & Jacques, 2005). More research needs to occur in studying the connection of individual traits and preferences for coursework and careers (Lamberton et al., 2005) to better attract educators to the field of school administration.

Additionally, correlational research could be conducted between campus leaders' TFA and school climate because of the major impact campus climate (and culture) can have on a school community. To understand the work climate of an organization, there is a need to study how employees handle uncertainty and how employees perceive the organization as managing uncertain or ambiguous situations (Clampitt & Williams, 2001). There are various climate surveys that could be used in this type of study (e.g., National Association of Secondary School Principals School Climate Survey, CFK, Ltd School Climate Profile). Because of the limited TFA research directed to educational leadership and the multiple implications that TFA can have on school organizations and because of the value of TFA for effective campus leadership (Anfara et al., 2000), further research on the topic of TFA and school leadership should be conducted.

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ACADEMIC DISHONESTY AND INTENTION TO CHEAT: A MODEL ON ACTIVE VERSUS PASSIVE ACADEMIC DISHONESTY AS PERCEIVED BY BUSINESS STUDENTS

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ABSTRACT

Academic dishonesty seems to be an increasing problem in colleges. There seems to be a positive correlation between academic dishonesty in college and unethical behavior in work environment as well. Therefore, for a more ethical business environment and a better world in that sense, universities need to train tomorrow's leaders with higher ethical standards. What is academic dishonesty or academic cheating? It does not seem to be quite black or white, one way to another, right or wrong. Student perceptions as well as others seem to be getting quite different, depending on the basis, opinion, or interpretation. The purpose of this research is to understand whether passive and active academic dishonesty as perceived by students are two separate constructs. If they are separate constructs, how each type of academic dishonesty influences intentions to cheat was also be studied. Structural equation modeling has been utilized to test the hypotheses. All hypotheses were supported, and results have been discussed.

INTRODUCTION

Academic dishonesty in colleges is a global problem (Chapman & Lupton, 2004). More and more students seem to be cheating on their tests and assignments significantly for the past few decades (Bolin, 2004; Brown & Choong, 2005; Chapman, Davis, Toy, & Wright, 2004; Chapman & Lupton, 2004; Whitley, 1998). Public and private universities seem to share the same problem among their students: academic dishonesty, lack of academic integrity, and academic cheating (Brown & Choong, 2005; Damast, 2007; Gloeckler & Merritt, 2005). Educational Testing Service (ETS) suspended some computerized tests like GRE (Graduate Records Exam) and TOEFL (Test of English as a Foreign Language) due to cheating in China, Hong Kong, South Korea, and Taiwan as noted by Shanghai Star (2002) in Chapman and Lupton (2004). According to the results of a survey conducted among management majors in both AACSB accredited a state university and a private Catholic university (Brown & Choong, 2005), students were found to be very similar in terms of their "extent of participation in 16 dishonest academic practices" despite the fact that "more emphasis was placed on ethics and values at the Catholic university". About 10 percent of the first-year MBA students (class of 2008) at Duke University were accused of cheating in an open-book, take-home test (Damast, 2007). "Several hundred MBA applicants … [were] caught hacking into software … to discover

their acceptance status weeks before decision letters were sent." Those instances happened in multiple universities such as Carnegie Mellon, Dartmouth, Duke, MIT and Stanford (Gloeckler & Merritt, 2005).

Employee dishonesty is another major problem area, especially in highly dynamic for profit business environments, and becomes "more complicated". Major forms of employee dishonesty includes fraud by top management, fraud in worker's compensation, and employee lying/ theft (Wang & Kleiner, 2005). For example, some top managers cooked the books in such companies like Enron, Global Crossing, Adelphia Comm., Qwest Comm. and WorldCom and caused a dramatic decrease in their companies stock prices (Wang & Kleiner, 2005). Many of the executives causing such frauds were trained in prestigious schools (Burke, Polimeni, & Slavin, 2007).

There seems to be a positive correlation between academic dishonesty in college and unethical behavior in work environment (Brown & Choong, 2005; Hilbert, 1985; Nonis & Swift, 2001; Sierles, Hendrickx, & Circle, 1980; Sims, 1993). For a more ethical business environment and a better world in that sense, universities aim to "educate principled leaders" with "the highest standards of integrity, sound judgment, and a strong moral compass – an intuitive sense of what is right and wrong" as noted by Kim B. Clark, Dean of Harvard Business School (Gloeckler & Merritt, 2005). However, "The university at the undergraduate level sounds like a place where cheating comes almost as naturally as breathing, where it's an academic skill almost as important as reading, writing and math" as noted by Moffatt (1990, p. 2) in Whitley (1998).

What is academic dishonesty or academic cheating? It does not seem to be quite black or white, one way to another, right or wrong. Student perceptions as well as others seem to be getting quite different, depending on the basis, opinion, or interpretation. There is a variation in findings on academic dishonesty levels, partly because of different definitions of dishonesty (Brown & Choong, 2005). Assignments, projects, take-home exams to be completed outside of the classroom seem to encourage academic dishonesty by providing more opportunities for students compared to in-class exercises, assignments, or tests (Swift & Nonis, 1998).

Moreover, students are increasingly getting required of working with others in team projects and assignments, partly because of an emphasis on businesslike environment (Henke, Locander, Mentzer, & NastasIII, 1988; Swift & Nonis, 1998). In an age of technology, students more and more keep on using many new gadgets and widgets in their personal lives and in educational environments as well. They may easily get confused about the true meaning of academic dishonesty in one extreme, or they may imagine creative ways to justify some of their behaviors regarding academic honesty in the other extreme. Specifically, (1) Is "teaming up on a take-home exam" to be considered as an "academic fraud" or "it's postmodern learning, wiki style"?; (2) Is "text-messaging exam answers or downloading essays onto iPods to be perceived as an academic dishonesty or "a wise use of technology" (Conlin, 2007)? "Learning is becoming more and more of a social process embedded in a larger network." How should the boundaries of teamwork, "shared information", "creative collaboration," (Conlin, 2007) or cheating be defined or perceived? Male students appear to be more likely to cheat than their female counterparts (Chapman & Lupton, 2004; Newstead, Franklyn-Stokes, & Armstead, 1996; Tang & Zuo, 1997), yet female students are more likely to let others copy from them (Lord & Chiodo, 1995).

These results are interesting in terms of indicating two different modes of academic dishonesty: active and passive. Academic research discusses more about active dishonesty and less about passive dishonesty. How students interpret academic dishonesty and how these interpretations or perceptions will influence their

intentions to cheat has not been investigated much. The purpose of this research is to understand whether passive and active academic dishonesty as perceived by students are two separate constructs. If they are separate constructs, how each type of academic dishonesty influences intentions to cheat will also be studied.

Passive academic dishonesty behaviors include activities such as noticing someone else cheating and not reporting it, writing notes on the test when it is first handed out, giving information about the content of an exam to someone who has not taken it yet, and using sorority/ fraternity sources and test files to study an exam. Active academic dishonesty behaviors include having another person take the test, turning in a paper written by someone else, using cell phones to transmit questions and answers, taking pictures of the exam with a digital camera.

The results about female students' propensity to engage in passive academic dishonesty whereas male students' propensity to engage in active academic dishonesty led the first hypothesis:

H1: Active academic dishonesty is a separate factor from passive academic dishonesty.

Based on the theory of reasoned action, Nonis and Swift (2001) argued that attitudes toward academic dishonesty were reliable predictors of intentions to cheat. Attitudes on the other hand, were based on individual's beliefs about what was an acceptable honest act. For example, if a student does not believe that when or before taking a test online, searching the Internet to find an applicable test bank for that course is not cheating, then that student will likely to cheat in an academic course.

Another supportive evidence about the importance of attitude toward academic dishonesty come from Bolin's (2004) work based on the general theory of crime. He evaluated the roles of self-control, perceived opportunity, and attitude toward academic dishonesty in predicting dishonest behavior. He concluded that self-control and opportunity to cheat did not provide adequate explanation of dishonest behavior in the absence of attitudes toward academic dishonesty construct. This research, however, did not provide an explanation whether attitudes cause the behavior or behavior results in attitudes toward cheating. He suggested that attitudes toward cheating and cheating behavior reciprocally determined.

It is known that attitudes are learned predispositions resulting from direct personal experience, communications with others, or knowledge obtained from mass media sources (Sheppard, Hartwick, & Warshaw, 1986) Attitudes also occur within specific situations. Subjective norms based on beliefs about what a specific referent think an individual should or should not perform behavior, and motivation to comply with the specific referents are influential on intentions (Schiffman & Kanuk, 2004).

Peer approval of dishonesty and peer cheating were associated with cheating among college students (McCabe & Trevino, 1997). So it is not surprising to learn that academic dishonesty become an issue in academic environments where norms among students favor cheating, opportunities to cheat are high, and technology makes the detection difficult. In such an environment, students may fail to recognize situations that may result in passive or active academic dishonest behaviors. This suggests the following hypotheses:

H2: There is a significant negative relationship between the ability to perceive passive academic dishonest situations as cheating and intention to cheat.

H3: There is a significant negative relationship between the ability to perceive active academic dishonest situations as cheating and intention to cheat.

METHOD

Data were collected from undergraduate students in an AACSB accredited college of business at a state university in the south. Data were collected through an online survey. Students were offered an extra credit opportunity as an incentive to complete totally voluntary survey. Responses were kept completely anonymous. In data preparation stage, anomalies, patterns and possible data entry errors were checked. Missingness was not an issue in data. Multivariate outliers did not exist in the data. The usable sample size is 248.

The sample had a relatively balanced distribution in terms of gender of respondents, where males and females had a share of 54 percent and 46 percent, respectively. Two-thirds of the respondents were younger than 23 and had a GPA lower than 3.25. Approximately four-fifths of the respondents had an on campus work experience.

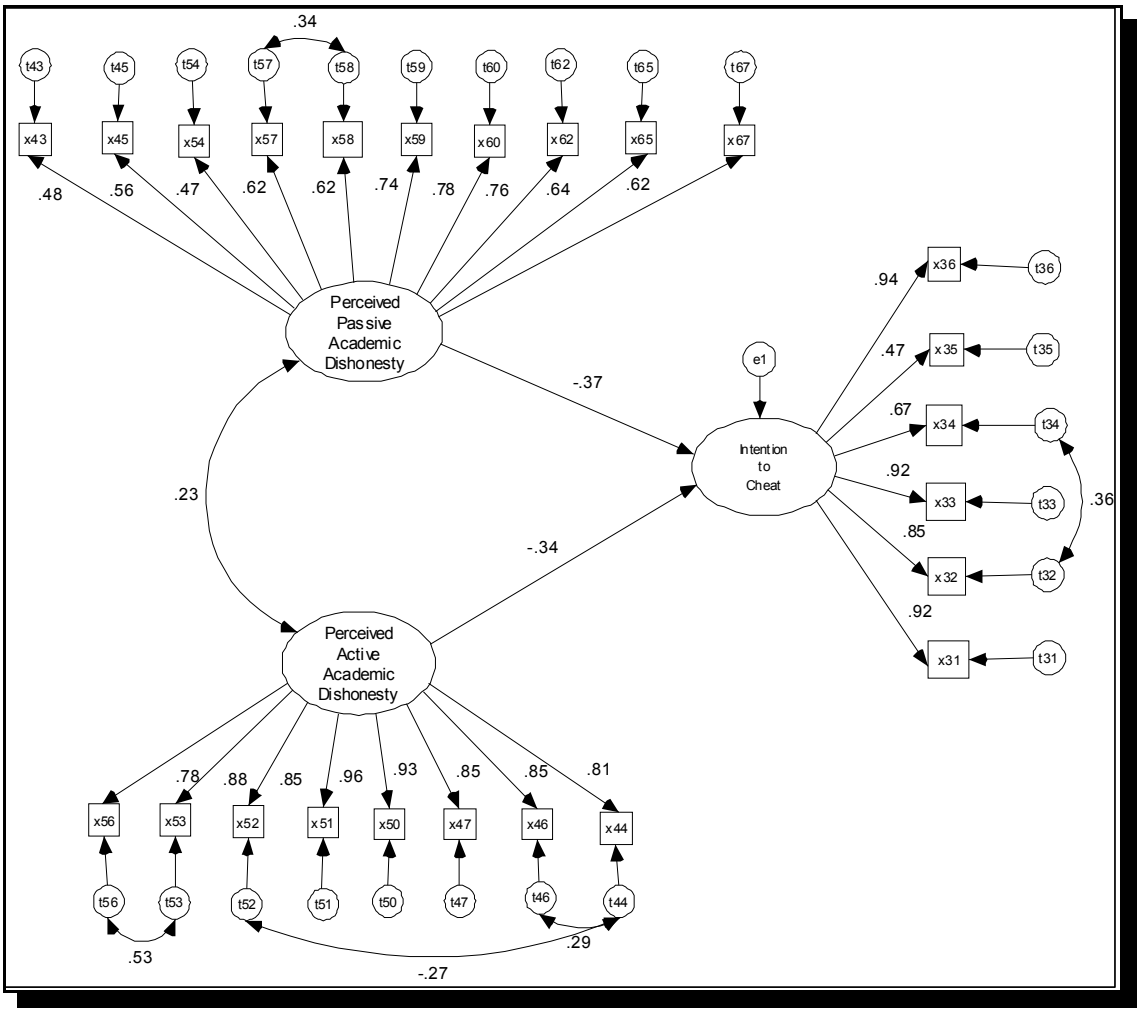
All six measurement items for intention to cheat (the probability that I [student] would cheat in an academic course) were taken from Bruner, James and Hensel (2001). Perceived passive academic dishonesty construct have 10 items, in which 5 items were generated by the researchers for the current study and the remaining items were taken from Brown and Choong (2004), Crawford and Juday (1999), Spangenberg and Obermiller (1996) and Sims (1993). Perceived active academic dishonesty construct have 6 items, all of which were developed for this study (Table 1). Students were asked whether each situation described was cheating or not. A 7-point Likert scale from strongly disagree (1) to strongly agree (7) were used. The theoretical model is in Figure 1.

Table 1: Variable Descriptions

Item #	**Perceived Passive Academic Dishonesty**
x43	Searching the Internet to find an applicable test-bank for the course.
x45	Noticing someone else cheating and not reporting it (not "whistle-blowing").
x54	Writing notes on the test when it is first handed out.
x57	Visiting a professor to influence grade.
x58	Using a false excuse to delay an exam.
x59	Having someone check over a take-home test before turning it in.
x60	Giving information about the content of an exam to someone who has not yet taken it.
x62	Exceeding the specified time limit on a take-home exam.
x65	Using sorority/ fraternity test files.
x67	Preparing cheating notes to take to class without using them.
	Perceived Active Academic Dishonesty
x44	Having another person take the test for you.
x46	Turning in a paper written 100% by someone else.
x47	Copying answers from someone else's exam.
x50	Using a cell phone to transmit answers to another student.
x51	Using a calculator to give another student a test answer.
x52	Taking pictures of the exam with a digital camera.
x53	Writing notes on your body parts.
x56	Placing notes in other accessible places.

Table 1: Variable Descriptions	
	Intention to Cheat
x31	Unlikely – Likely
x32	Nonexistent - Existent
x33	Improbable - Probable
x34	Impossible - Possible
x35	Uncertain - Certain
x36	Definitely would not cheat - Definitely would cheat

Figure 1: A Model on Active Versus Passive Academic Dishonesty



RESULTS

Table 2 shows reliability of each construct and inter-construct correlations. Constructs have adequate level of reliability. Correlations among constructs are significant and substantial indicating the predictive validity. The evaluation of discriminant and convergent validity and hypothesis testing were done using AMOS 7 software package.

Table 2: Descriptive Statistics

	Construct	Cronbach's alpha	Correlations[1]		
			(1)	(2)	(3)
(1)	Perceptions about passive academic dishonesty	0.870	-		
(2)	Perceptions about active academic dishonesty	0.961[2]	0.208	-	
(3)	Intention to cheat	0.903	-0.406	-0.387	-

Notes All correlations are significant at $p<0.001$
Redundancy caused by item 53 and 51. Items are kept until further analysis.

In order to test the discriminant validity paths among the three constructs were set to one and the resulting one factor model fit was compared to the theoretical model (Table 3). As can be seen from fit statistics and the change of the Chi-Square values, the one factor model was inferior to theoretical model. Another test for discriminant validity was to set the correlation between perceived passive academic dishonesty and perceived active academic dishonesty constructs in order to see whether active and passive academic dishonesty were two different constructs. The resulting model had still significantly worse fit indices than the theoretical model. These results showed that the theoretical model had discriminant validity. Furthermore, these results supported the first hypothesis stating that perceived passive academic dishonesty was indeed a different construct than perceived active academic dishonesty.

Table 3: Model Comparisons

Model	Change in Chi-Square	p-value	Chi-Sq. Ratio	CFI	RMSEA	AGFI	GFI
Theoretical Model	-	-	1.841	0.955	0.058	0.841	0.869
Two Factor Model	670.7	0.000	4.538	0.810	0.119	0.525	0.607
One Factor Model	1872.3	0.000	9.308	0.551	0.183	0.374	0.479

The second stage of the analysis was the confirmation of construct validity as a measure of convergent validity. One indication of this validity was the model fit. Table 4 showed details of model fit and tests of the hypothesized relationships (Chi-Square Ratio= 1.778, CFI= 0.959, RMSEA=0.056, AGFI=0.847,

GFI=0.876). Results indicated that the model fit was good. All items loaded significantly to their related constructs, indicating adequate construct validity.

The regression weight between perceived passive academic dishonesty and intention to cheat was negative and significant (Table 4), providing support to Hypothesis 2. Hypothesis 3, stating that there was a significant negative relationship between the ability to perceive active academic dishonest situations as cheating and intention to cheat.

The differences between male and female student groups were also investigated (Table 4). The importance of paths differs for both groups of students. The regression weight of perceived passive academic dishonesty for females was -0.578 where as the regression weight for active academic dishonest was -0.212. This result shows that if a female student fails to recognize a passive academic dishonesty situation as cheating, then she will cheat. On the contrary, the regression weight for male sample for active academic dishonesty intention to cheat path was -0.412 and for passive academic dishonesty to intention to cheat path was -2.501. This showed that a male student's failure to perceive an active academic dishonesty situation will lead to his cheating in an academic course.

Table 4: Model Fit and Tests of Proposed Relationships in the Model

Model Fit Statistics:

Chi-Sq	df	p	Chi-Sq Ratio	CFI	RMSEA	AGFI	GFI	RFI
433.775	244	0.000	1.778	0.959	0.056	0.847	0.876	0.900

Sample Size = 248

Structural Relationships: Hypothesized Paths	Sample	Proposed Relationship	Standardized Coefficients	Critical Ratio	Significance at p = 0.0000
H_2: Perceived Passive Academic Dishonesty → Intention to Cheat	Total (n=248) Female (n=114) Male (n=134)	Negative	-.370 -.578 -.244	-4.864 -4.741 -2.501	Supported
H_3: Perceived Active Academic Dishonesty → Intention to Cheat	Total (n=248) Female (n=114) Male (n=134	Negative	-.338 -.212 -.412	-5.569 -2.611 -4.728	Supported

DISCUSSION AND FUTURE RESEARCH

Results of this study indicated that perceived passive academic dishonesty is a separate construct than perceptions about active academic dishonesty. Both constructs are equally important on the intention to cheat. Regardless of student gender, if students failed to recognize actions leading to both passive and active academic dishonesty, the likelihood of actual cheating behavior in an academic course increases. The results also strengthened the importance of beliefs and norms influencing student intentions to cheat.

Students have less difficulty in identifying active dishonesty situations, however, they have considered situations described in passive academic dishonesty alternative as not cheating. In other words,

"teaming up on a take-home exam" appears to be considered as a " postmodern learning," not necessarily a passive academic dishonesty situation. Similarly, "text-messaging exam answers or downloading essays onto iPods" are not perceived as an academic dishonesty.

Research in social psychology (McCauley, 1989) warned about the existence of groupthink applying pressures toward uniformity as well as unquestioned belief in the group's morality. If students believe that the inherent morality of their peer group is sound they may ignore ethical and moral issues. From this perspective, passive academic dishonesty has become even more important. As long as it stays a gray area for students, norms formed by groupthink behavior encourage and even put group pressure on students to engage in cheating.

The nature of the relationship between passive and active academic dishonesty is not fully known. Will perceptions on passive academic dishonesty influence on the formation of perceptions about active academic dishonesty? This study showed that they correlate moderately but significantly. What other variables are important in this relationship? Future research will shed light to these questions.

Another important outcome of this research was the difference between male and females about the relative importance of perceptions of passive an active academic dishonesty. Exiting literature showed that academic dishonesty occurs more frequently among male students (Chapman & Lupton, 2004; Newstead, Franklyn-Stokes, & Armstead, 1996; Nonis & Swift, 2001; Tang & Zuo, 1997). However, this research showed that both genders are engaged in cheating behavior, but their approaches were different. Therefore, gray areas such as active versus passive academic dishonesty should be investigated further. This investigation would also compare a number of demographic characteristics of students in various school environments including public and private; secular and religious; and large campus and small campus.

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STUDENT DRIVEN BUSINESS PROJECTS: MOTIVATION, IMPLEMENTATION, AND CONSEQUENCES

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ABSTRACT

The importance and advantages of experiential learning is well documented. Student driven business projects can be a powerful tool to creating meaningful experience and be an invaluable tool to effective achievement of learning outcomes in accordance with the learning objectives of a business class. We review the reasons to use such projects as discussed in literature and our experience. We discuss the potential outcomes for the educator, the students and the clients, as well as pitfalls, and provide recommendations to both, the educators and the clients.

INTRODUCTION

Our goal as an educational institution is to make students self-educating people. We aim to develop in students the ability to synthesize knowledge from various sources and help them learn practical business methodologies. Specifically, the chief objective in our courses is to provide students with a fundamental understanding of concepts in a fashion such that the knowledge and skills obtained from these courses is transferable to integrated "real world" applications (Smith & Van Doren, 2004), in line with the needs of the future marketplace (see for example, Ackerman, Gross & Perner, 2003; Walczak & Lantz, 1998). The importance and advantages of experiential learning exercises is well documented in other disciplines such as nursing, medicine, economics, computer science, journalism, and social work (see Batalden and Davidoff 2007, Waldeck 2007, Todd 2007, Steel et al 2007, for instance). This paper relates to our learning gleaned from over ten years of using student driven projects as experiential learning tools to ensure learning outcomes commensurate with learning objectives espoused in our courses.

We report on student driven projects that form an important and effective means of experiential, student learning centered education in our pedagogical palette. We use this pedagogical tool based on documented effectiveness of such experiential exercises in producing learning outcomes that are cherished by students, valued by employers, and encouraged in the mission of most institutions of higher education. It is our goal to ensure that our students engage themselves in active hands-on learning and will be able to apply their learning in business settings, in particular as team players.

We start with a brief description of literature that supports the conceptualization, implementation, and efficacy of such experiential learning. We then proceed to provide examples of some of the projects our students have participated in. In the subsequent narrative, we underscore the benefits of such endeavors for

our students, our clients, and our employers. We then proceed to caution the reader about some of the stumbling blocks, pitfalls and traps that we have encountered in our pedagogical development. We conclude by providing some preliminary thoughts on further research that might enrich our scholarly approach to pedagogy.

CONCEPTUAL UNDERPINNINGS OF EXPERIENTIAL LEARNING

Past research in student learning in higher education provides us with sufficient evidence to establish that learning is an active process in which students actively construct knowledge from their experiences in the world (Michael, 2006). Add to this the idea that people construct new knowledge with particular effectiveness when they are engaged in constructing personally meaningful artifacts (Todd 2007) and we find a conceptual foundation for the use of student driven business projects as a pedagogical tool.

Extant literature provides some guidance on organizing real-life, student driven projects (for example, Lopez & Lee, 2005). However, the larger research stream in the area of experiential learning better informs our application of student driven projects. Waldeck (2007) refers to such experiential learning as "personalized education." His research underscores the complimentary relationship between such personalized experiential learning and learning outcomes. Moving from individual learning to cooperative learning, meaningful group work has also been shown to be a particularly useful active learning tool (Whetten 2007, Livingstone & Lynch, 2000).

In the medical arena, Batalden and Davidoff (2007) view experiential learning to be critical in providing patient care. They make the distinction between knowledge of medicine ("knowing that") and delivery of care ("knowing how") and report that providing quality care is better taught through experiential learning than through age old established pedagogy of medicine, which is highly effective in transferring knowledge yet woefully inadequate in establishing quality of care delivery.

Houde (2007) propounds the idea of "Analogically Situated Experience," as the next frontier in pedagogical advance of experiential learning. This innovation entails analogical learning, situated learning, and experiential learning. The key is immersion of students in a context that is very close to the actual "real world" context of the ultimate skill set required to perform expected tasks. Houde successfully establishes the insights that this methodology delivers. A student driven project achieves all the aforementioned outcomes and also places the responsibility of learning upon the student – producing student motivation and accountability that transcends traditional boundaries of pedagogy. At Goldman Sachs University, Pledger (2007) reports unparalleled success upon embracing the experiential learning model in building critical thinking skills, improving team dynamics, and enhancing the overall effectiveness of their trainees. The program has found success at all levels of employees and has gained popularity within the company.

In a study that examines the impact of experiential learning upon workplace success, Yeo (2007) found that experiential learning led to a crystallization of informal learning patterns into a cohesive structure that could actually be applied with success in solving workplace problems. Critical thinking, reflection, curiosity, and team-building are often concepts that are too ephemeral to capture in traditional teaching-learning mode, while experiential learning can actually make these learning goals attainable and measurable.

Experiential learning provides the context for participants to apply their learning in the context of their jobs and experience improvement and success to further motivate learning. With traditional teaching, any integration across discrete subjects is left to the students, usually to achieve on their own. Instead of

solving problems in a parsed out, static environment, what if students could solve actual business problems for a real organization? Such experiential learning could fundamentally change how students learn and apply their learning in our courses.

STUDENT DRIVEN BUSINESS PROJECTS

We have successfully conducted business research and consulting for over 25 business organizations. Our clients have included the Green Bay Packers, Hansen Foods, Agrilink Foods, NEW Zoo, Performa, Siena Basketball Program, Siena Center for Service and Advocacy, Fuvirese International, Adirondak Mountain Club, Rensselaer County Crime Victims Assistance Program to mention just a few. We have conducted a variety of projects ranging from market research, consumer research, competitive analysis, promotional strategies, e-commerce feasibility, conventional channel feasibility studies, new product launches, to integrated marketing communications campaigns to fund-raising campaigns for not-for-profit organizations.

Based on our experience with student driven business projects, student feedback received over several years, and client perceptions and comments, we have compiled a sample of benefits derived by various collaborators in this unique learning opportunity. This approach presents a unique combination of benefits to our students, our institution, and the business client.

Benefits to Our Students

- Enhanced project administration skills and self-confidence by working on a practical project.
- Brainstorming a real marketing problem using ideas and concepts studied in class to gain competitive advantage in real marketplace.
- This approach allowed the students to study concepts and develop critical thinking based on their particular experience with the project.
- Improved skills at working in group settings requiring necessary leadership, coordination and exchange of knowledge to meet client specifications and deadlines.
- A complex real-life project, presented to a real client, poses enough of a challenge and motivation for students to work in a truly collaborative fashion as opposed to simple delegation ("OK, you do part 1, I'll do part 2, he'll do part 3, and then we all send it to Julie and she makes the slides") that our resourceful students oftentimes resort to when faced with group projects. Thus, the opportunity to learn true teamwork is no longer bypassed, and a much better project results.
- Working under tight deadlines and producing professionally acceptable written and oral reports.
- Such reports and related components artwork, promo campaigns, research findings can become the first truly professional things that the student, who otherwise does not have much marketing experience or achievements, can then include into their portfolio. Many of our students reported using their project work during their interviews.
- Students reported that it became increasingly clear that the textbook learning did not merely intersect actual business problems but that they actually complemented one another in a mutually enriching symbiotic fashion.
- Students face the limitations and constraints of the real world ("No, you are not allowed to put that sign up in that place"; "No, the State Laws prohibit a raffle in a bar").
- Students face uncertainty inherent in real life situations. There really is not a solution manual somewhere on the Internet!

- The experience is a great resume builder and is helpful to students in career enhancements after graduation.
- Working on the projects provides students with networking opportunities among the business community.
- The added responsibility to the real client, as opposed to a purely academic exercise, increases the salience and importance of doing excellent work to the students who otherwise at times might be tempted to coast and miss learning opportunities.

Benefits to Our Institution

- These student driven business projects have been viewed as yielding tangible results in the realm of social responsibility of our educational institution in contributing to building businesses.
- In a related notion, projects completed pro bono, especially for non-for-profit organizations, instill the values of caring and social responsibility in the students, who thus learn professional service in addition to the volunteer work they are already familiar with.
- Such projects reaffirm Siena's commitment to act as a resource for companies and reinforce its links with local business.
- Such learning exercises lead to a shift in focus from teaching about business to teaching with business. Such a shift in focus facilitates a learning environment that supports and encourages higher level processing skills, problem solving, and critical thinking.
- Our role changes from an instructor to the role of a facilitator of learning and coordinator of learning environments.
- It is intellectually rewarding and pedagogically enriching experience to a teacher. (For one of the authors, this idea came on the verge of death by boredom during an excruciating series of student presentations of poorly regurgitated canned case solutions; it's always been stimulating ever since).
- Possibly generates revenue for Siena that can be plowed back into enhancing student learning.
- Projects have the potential to bring additional PR/media attention to the College. As a matter of fact, the latest project by one of the authors is being undertaken with explicit participation of Siena's PR person.
- A real life, unique project cannot just be mindlessly copied from "some web site" thus reducing the need for policing of the academic integrity.

Benefits to Client Businesses

- Provides an opportunity for local businesses to contribute to the enhancement of learning in local communities, a socially responsible service.
- Most of our students are also customers of client businesses. Such projects are excellent public relations tools to reach out to students and their families, and the local community at large -- students tend to get very interested in business they're working with and talk about it with others. As a matter of fact, this promotional aspect alone might justify participation for many a business. The number of people thus reached can become rather large – for example, one of the authors routinely gives the same project in two classes with about 60-70 students total; factoring in just the roommates of those living on campus, we might be talking about 200 students seriously involved with the client's business.
- On a related note, our students are going to graduate, become managers, and become useful business clients, partners, or donors. For example, a student who persuaded his group to center the promotional

program for a business client around collaboration with the bar he was working at. At the conclusion of this joint promotion, the student was actually invited to become a partner in the tavern and is successfully leading this small business post-graduation.

- Student Driven Business Projects provide a cost efficient means of obtaining useful strategic plans and recommendations for small and not-for-profit businesses that may not be in a position to hire high priced consultants.
- For larger businesses that can afford outside consultants at exorbitant prices, results obtained might in no way be superior to results provided by our students. In fact, several client businesses in the past have rated their experience with student driven projects to be as good (if not superior) to results obtained from independent consultants.
- Unlike professional consultants our students have no temptation to "massage" or "mine" results to ensure continued funding. Intellectual honesty is part of our students' learning experience that is stressed (and closely monitored) at Siena.
- Finally, most of our clients reported working with students to be a personally stimulating, rewarding experience.

A CASE STUDY IN INTERNATIONAL BUSINESS

What follows is a summary of the implementation of one such project in an undergraduate upper level elective course in International Marketing. This case study is divided into three distinct sections: the genesis and informing principles of the project, the implementation of the experiential learning project, and student feedback and evaluation of this learning opportunity.

Genesis

Siena College is a Franciscan institution of higher learning founded on the liberal arts tradition. The Franciscan mission of the College is reflected in all its activities and draws its fervor from the humanitarian guiding philosophy of Francis –diversity, optimism, respect and service. Service to the diversity of all humans, poor and marginalized is the basic tenet of all Franciscan endeavors. One of our goals in support of our Mission is to create professional programs and classes that support the Franciscan principles espoused by Siena. All such courses develop a learning plan that has three components: one, the study of a particular academic discipline; two, an emphasis on Franciscan values and history within the context of the discipline in question; and three, a service component that would translate the academic knowledge into direct social action. The service component was arranged by each professor with cooperating agencies that offered opportunities for service to the poor and marginalized in the tradition of Franciscanism.

Implementation

In International Marketing, students devised marketing strategies and plans to expand a local retail cooperative business' market to include underprivileged inner city market segments and ethnic minorities. Students were informed that one of the course objectives was to draw upon our Franciscan roots and commit classroom learning to building an awareness for social anomies, educating ourselves about the issues and

concerns of the poor and marginalized, and more importantly – utilizing our learning, knowledge, and skills in improving the life of a fellow human.

With this goal in mind, we undertook projects and assignments that underscored the usefulness of such high ideals in all our social endeavors, including business interactions. The instructor provided students with projects and assignments that allowed them to apply their learning, knowledge, and skills from this course to "real-life" problems and solutions that addressed the needs of the poor and the marginalized.

The term project undertaken related to a local organic food retailer -- Honest Weight Food Coop, located in downtown Albany. Their mission statement on http://www.honestweight.coop/index.html reads:

> *"Honest Weight is a member-owned and-operated consumer cooperative that is committed to providing the community with affordable, high quality natural foods and products for healthy living. Our mission is to promote more equitable, participatory and ecologically sustainable ways of living. We welcome all who choose to participate in a community which embraces cooperative principles, shares resources, and creates economic fairness in an atmosphere of cooperation and respect for humanity and the earth."*

The HWCoop faced a strategic problem in being perceived as elitist and catering only to the affluent segments in the market. The challenge presented to our class was to change this perception and provide marketing strategies and ideas that made the business more accessible to the inner city marginalized and poor market segments as well as ethnic minorities which include the often ignored immigrant market segments.

The student teams were successful in generating a variety of creative marketing ideas and strategies that were presented to the HWCoop executives during the last week of classes. The feedback from business managers in the HWCoop indicates that the strategies were very well received by the board and several ideas and plans generated by our student teams are being considered for implementation. The managers were impressed by student insights and concerns with the needs and wants of the underprivileged and the underserved market segment. Student teams spent considerable time and effort in conducting primary research to establish and support their position that these target segments were viable markets that could be profitable – not to be treated as charity. The ability of a business to serve marginalized segments, while ensuring reasonable and just profits, makes the marketing strategies and materials developed by our student teams to be very attractive to a board interested in the long-term survival and viability of the Coop.

While the response form the HWCoop managers was gratifying, it was also evident that students took pride in being able to use the marketing skills and tools they acquired in this course to solve a meaningful, relevant, and practical problem while enriching their learning through Franciscan insights.

Student Feedback and Assessment of Learning

There were a variety of measures used to register student responses to these service-learning experiences. These included formal student evaluations, in-class student assignments that had an evaluative component, ad hoc comments between students and faculty, and a dinner for students enrolled in the course, where the students from the different sections and teams compared notes and stories about their experiences.

A sample of student comments and reactions excerpted verbatim follow:

"From the HW Coop project, I learned that each segment has its own distinct features, and it is the job of the marketer to use these features.

"I learned that there are many segments of the bottom of the pyramid market that are being ignored but that these markets are very large. I learned that if the right research is done these markets can be targeted effectively and companies can make a profit from them. I also learned that self reference criterion plays a big role in market research of different cultural groups.

"With HW Coop, the importance of marketing was illustrated through an example in our own back yard. There are a large number of bottom of the pyramid consumers here in Albany and they want and need products just like everyone else. Targeting bottom of the pyramid is not exploiting them but instead giving them the opportunities that they deserve. International marketing directly relates to any group of people with cultural, …, experiences, rituals and beliefs different from our own.

"I found that even though a marketer may not be "racist" or an ethnocentric, he or she will still have preconceived biases about those other than her or herself. It is truly difficult to put those aside and to focus on facts of the market segment to create a marketing mix that fits with that particular segment. I also found that I enjoy the humanitarian aspect of marking management.

"I now have a basic understanding on why it is important not to forget about this large segment when coming up with a marketing plan and how exactly one can adjust their plans geared towards a bottom of the pyramid segment.

"We targeted African Americans. When targeting this group, there is a lot to take into consideration when coming up with a marketing kit. The strategic recommendations for one group will not be the same for another group. This was very important.

"While working with Honest Weight and focusing particularly on the low income groups, we learned to market to B-O-P (Bottom of Pyramid) groups you must exercise new and innovative marketing techniques. Educating the consumer is the most important aspect.

"I learned to think outside the box because the project required me to sell a product to people, who as of right now, see NO relative advantage in the product. This is challenging but very interesting. The presentations all portrayed excellent ways to diffuse the already established products into untapped segments.

"Marketing B.O.P. consumers is not a walk in the park. Creativity is crucial. Many considerations have to be made to be successful. Profit is not the desired end goal. The desire to help a fellow human being should be a driving factor.

"I can honestly say that I learned a lot by participating in the HW Coop project. I learned new concepts and was able to apply them on a daily basis. This made a lot of concepts more clear and gained a lot of experience in the process of doing so.

"I also learned from this project that it is not an easy task to serve this market segment, and that it takes a focused, well-researched effort to do so. It was refreshing to see a local business that is concerned about serving this market segment that can sometimes be unfairly viewed as unprofitable.

"The Honest Weight project taught me a lot about marketing and applying concepts learned in class. I gained first hand experience rather than studying and reviewing text.

"From this project I learned that BOP markets can sometimes be the most profitable, and also most helpful to individual members. People in these markets have less spending power, but collectively have a lot of buying power. They are also in need of high quality products.

"I learned that in order to serve the marginalized and poor market segments, your marketing mix must be changed to give buying power to those segments. You cannot use the same promotional, packaging and pricing strategies for the bottom of the pyramid consumers as you would for the upper tier shoppers- it is useless.

"HW Coop was useful in my understanding of serving the marginalized and poor segments because as a team, we were able to learn and research about these segments and come up with marketing kits that we thought would appeal to them. It also bettered my view of Franciscan values.

"The HW Coop project, through research and first-hand experience gave us a greater understanding of the needs of the B.O.P. segment. It gave us a greater sense of service, and our mission as students of a Franciscan school.

"The HW Coop project was useful in my understanding of serving the marginalized and poor market segments because it showed me ways to offer products to a commonly ignored segment. I better understood the needs of the poor markets and how to effectively demonstrate and provide the organic foods benefits to them.

"The HW Coop Project was very useful in understanding the poor market segments. It makes you be more creative when developing marketing strategies and a marketing kit. I've always felt targeting the bottom of the pyramid segment is somewhat unethical, but after doing this project (and the article we just read) I feel differently. I feel there is an opportunity there and the poor market segments want attention, just as much as the rich market segments do.

"…The fact that it was a real life and business and situation that was brought to us, gave more of a challenge to do better. You had to think outside of the box, whether it was the textbook or the concept of selling only products to people who could afford the surplus product…

"…I believe businesses have a responsibility to be humanitarians. Regardless of income, businesses should strive to make their products available to every potential customer by any means possible. By doing this, the business gains profit and an increased customer base which leads to increased market share, among other rewards…

"…I think the humanitarian challenge gave the HW Coop project a different feel and was an interesting spin on any business program I have participated in. it forced me to think critically about

the persons I was marketing towards, and the reality of their lives. The sky was not the limit on this project because there were realities that had to be addressed…

"…Because of this project, I have been honestly thinking about using my skills in the no-for-profit sector. As a Siena student, and a member of this Franciscan institution I value helping others very highly. This project has shown me that I can effectively use my marketing skills in a way that will not only bring company revenue, but also make a positive impact on someone else's life because I am participating in the purest form of marketing: educating…

"…The HW Coop project had a significant impact on my learning and thinking. It challenged me to think with a broader prospective; to be able to focus on people who do not seem to hold any profitable benefit for a company but somehow come up with a way to disprove that. I enjoyed working on this project because it made me think outside the box…

"…As an individual, I can definitely classify myself as a "humanitarian" in that for the most part I think about others more than I do about myself. Looking back at the HW Coop project I can honestly say that I was excited to an extent by the humanitarian challenges that I faced. In the beginning of the HW Coop project I questioned the rational behind the objective or rather purpose of the whole deal. I constantly asked myself: Why are we targeting customers that can barely afford our products? It was definitely a challenge to come up with strategies to market to these individuals. As the project persisted and now has been completed, I can say it has definitely affected the way in which I look at the "bottom of the pyramid" segment. I believe there is a lot of opportunity within the untouched "bottom of the pyramid" segment/market…

"…The ways in which the bottom of the pyramid aspects of Honest Weight Co-op project had an impact on my learning and thinking are endless. I have gained a tremendous amount of knowledge and skills needed in preparing a strategic marketing plan. I am now comfortable with having to complete any other project like this, with minimal questions or confusion. This project forced me to think much deeper and creatively to get the results I desired…

"…This project made me, and I'm sure others, realize that it takes more than good intentions to help solve a problem. Really understanding a person and their background, current situation and different attributes of their lives is needed to actually find productive ways in which problems can be corrected…

"… I was indeed excited about the humanitarian challenges posed by the HW Coop project. Being half Hispanic myself and growing up in an urban area, I see the b-o-p segments very commonly ignored. Organic food creates a better way of eating for people. Why should this only be made available to those who are wealthy? I do not believe that any company would ever go forth with a project of this sort for the sole purpose of being humanitarianly correct, but if marketers and managers can look outside the box and realize that these markets can possibly hold a profit then the needs of the poor and the needs of the company executives can both be met…

"…I am the type of person that would rather give than receive. More managers should be excited by business challenges that have a humanitarian dimension because they are then giving back to their community and playing a huge role in the happiness of another human being…

"...What made this project so interesting was the fact that it was not an out-of-the text-book assignment. People from HW-Coop actually came to the store asking for help pertaining to their business. This added a more personal touch to the assignment. Not only did I want to do well for my grade, but I was also excited to create a marketing plan that could actually be used in the real world and help out a company whose mission statement included a section that had a promise to give back to the community..."

As seen above, the learning outcomes were achieved and based on this direct assessment of outcomes one might argue that a deep level of learning and critical thought was achieved, both in terms of international marketing concepts and the humanitarian Franciscan Values that this course set forth to achieve.

The culmination of the student response assessment occurred at a dinner arranged by Dr. Richardson and Academic Affairs for any student enrolled in these Franciscan Insight courses. The dinner took place on May 1 in Serra Hall 122, and included students from all three classes. About thirty students attended the dinner and shared their diverse experiences with each other. Also present were the three supervising faculty members along with Father Brian Belanger, who had team-taught with Dr. Richardson. The students gave specific examples of what occurred in their courses, along with making suggestions about how to improve the courses. The dialogue was fruitful, and provided a capstone experience to those present.

SOME INSIGHTS GLEANED FROM OUR EXPERIENCES

Lessons for the instructor

- Learning exercises that involve real-world applications are not a free-for-all labor source. Both of us realize the need to protect our students. There are different ways of handling this issue. One of the authors ensures that businesses make financial contributions (however modest) to Siena in light of the time and effort expended by our students. The other author aims at dealing primarily with non-for-profit businesses or others that seem worthy of pro bono service, albeit determined informally; however, at least nominal prizes (oftentimes, promotional items such as t-shirts and such) to the winning team are usually asked for.
- When students know that the businesses will be "paying" for the services, they fully realize that the clients thus expect to be treated with the professional respect due a client. Such respect should also be paid to the pro bono client.
- We have different approaches regarding providing project choices. One of the authors provides a wide variety of choices of projects to students. Students pick and choose the projects and the group members. The instructor sets the upper limit to an acceptable group size based on size of the class, size of the project, and other logistical considerations. The other instructor gives one project to all the teams, making them all compete (as judged by the client), imitating to a degree the project bidding process.
- If a variety of choices is provided:
  a) Our experience has shown that providing choices not only increases student interest but also allows them to practice decision making right from the start of the project. It also results in increased ownership and resultant commitment to the learning exercise.
  b). To encourage competition among the teams as well as a diversity of ideas, more than one team is encouraged to pursue each business project.

c) We do run the risk of no student group expressing an interest in a certain project. In our experience, a task "assigned" to groups doesn't always yield the best outcomes. If time permits, we might decide to undertake the project in another class during another semester.

- If everybody works on the same project, some care needs to be taken to not expose the better ideas to the rest of the class, as well as to not create unfair competitive advantages to some of the groups through selective advising.
- Open lines of communication among faculty, student groups, and client businesses are of paramount importance. Lack of proper coordination between collaborators is inexcusable and will invariably result in student groups misrepresenting the truth in order to explain missed deadlines and unacceptable outcomes. Students do have a strong tendency to neglect communicating with the client, and we are still looking for a reliable way to induce them to act otherwise. It becomes even more of an issue when the client fails to respond to some of the students' communication attempts. Such occurrences may be used as an excuse (albeit real) by the students, and in any case do not send a positive message.
- Team member firing instructions may become a necessity. One of the approaches is to require the teams to provide a "paper trail" of attempts to deal with the problems internally, making a bona fide effort to resolve the issues. This can become sufficient motivation for freeloaders, and eradicate possible communication problems ("I did not know they were meeting because nobody told me"), as well as prevent negligence on behalf of the leaders of the group.
- The instructor needs to keep the balance between coaching and imposing their own vision on students. It is so very easy for the instructor to get excited and throw out tons of ideas that students could just take instead of developing their own. Such actions can easily become crutches for the teams. Worse yet, it seems that there is a potential for actually impeding their creativity.
- Setting up intermediate due dates. Follow throughs and follow ups are extremely important in keeping the project on track. Perhaps, the most labor-intensive yet conducive to student growth is making the students set their own timelines – and then holding each team responsible for staying on their own timeline. The logistics of such approach need to be worked out better before this instructor attempts it again.
- Possible coordination of projects within the school may become a necessity, as more and more instructors adopt this method. On one hand, students may become overwhelmed. On the other hand, having a bank of projects available to the whole school so that optimal instructor/class/ client match could be achieved may be an attractive option.
- Encouraging student networking. Students rarely fully utilize the potential for them to get to know "people who know people" in the process of their project work, even though some more mature ones do so. This needs to be carefully coached.
- The students that will soon be graduating and taking on responsibilities in various industries, are expected to work with a variety of products and markets. However, traditional undergraduate students have problems understanding/relating to market segments other than their own, and product/service categories that are irrelevant to them. This creates somewhat of a dilemma – should we push them outside of their comfort zone or not. Certainly, students design new brands of beer with much greater enthusiasm than they do a direct marketing campaign for a Child Care Referral Services but not everybody gets a job with a beer/videogame/other exciting manufacturer, and we want them to be ready.
- Students sometimes tend to have a problem with openness of a choice – when it is up to them to position/reposition the client and make choices accordingly, or when they are allowed to exceed the budget in their projections, provided they find a potential funding source. Making choices is hard.

Interestingly, some students tend to limit their own choices in such situations and then complain that they didn't have enough! This has happened in at least a couple of teams every semester.

- Since clients' budgets are usually rather restricted, additional projects or exercises might be needed to apply a larger array of tools from the marketing toolbox. For an advertising class, there are engaging new opportunities stemming from customer-driven advertising attempted by many high-budget companies. Since related contests usually involve compact submissions, they can be worked into the course schedule rather nicely.

Lessons for the client business

- Expect to have a contact person committed to working with students in a timely manner. It really is very important.
- Prepare to give thought to what your business really is about. We would not be able to help much if you do not really know.
- Expect a product/service that teaches the students a full scope of marketable skills. To give an example, do not just come to an advertising class and ask for a brochure – ask for a promotional campaign.
- Keep the instructors posted. The best client we once worked with actually brought a copy of all communication with students with him, which helped quite a bit
- Our students do best when the product/service is relevant to them. If your business is not inherently relevant to students, give some prior thought on how to frame it so it would become relevant to a traditional undergraduate.

FURTHER RESEARCH

Several interesting directions of research arise in conjunction with our student work. The first direction is, ultimately, in validation of the recommendations. Such work would include a careful examination of the best practices augmented by project management and pedagogical theories followed by empirical research of the impact of various recommendations on student learning, satisfaction, as well as employer's evaluation of the quality of graduates. Before such work is commenced, it would be interesting to explore how employers, students, instructors and alumni perceive this type of project and what the different factors impacting the differences in such perceptions (if any) are.

Secondly, it would be interesting to match up various types of projects and ways of implementing them with various student and instructor personalities, backgrounds, student learning styles and instructor teaching styles.

Administratively speaking, it is also of interest to examine the coordination of such projects across departmental and school level. Once a significant number of instructors adopt this approach, it is highly desirable to establish a synergistic pattern to maximize student learning across the classes and in line with the curricular objectives. It would be interesting to investigate organizational learning with respect to coordination and optimizing the projects, creating a project bank, establishing a culture where students and instructors are excited about real life project work.

Finally, the "live cases" could serve well in multifunctional experiences such as the traditional capstone courses offered in most institutions. In addition to traditional case analysis (and perhaps in lieu of these), students could benefit from several professors examining a live case from different disciplinary

perspectives and providing an opportunity to students to view the project as a comprehensive business problem in decision-making, rather than the silo of a particular functional discipline (marketing vs. accounting). If the learning objective and intended outcome of capstone courses is to provide an integrative framework of business decision-making to our students, it stands to reason that such student-driven project would fulfill such lofty objectives. Empirical studies that establish the veracity of such intuitive conclusions would help improve the outcomes of such learning experience for our students.

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FACULTY UTILIZATION OF END-OF-CHAPTER TEXTBOOK MATERIAL IN DEVELOPING INTERMEDIATE ACCOUNTING STUDENTS' PROFESSIONAL COMPETENCIES

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ABSTRACT

This paper reports the results of a survey of faculty members who taught intermediate accounting in Fall, 2005, using the Kieso, Weygandt & Warfield (2004 and 2005) textbook. The purpose of the study was to determine the extent to which the instructors used each type of end-of-chapter (EOC) material that the book contained. The study found that, while students' critical-thinking and communication skills were addressed to some extent, the participants used the EOC material primarily to develop students' technical accounting knowledge. The study also found that the participants seem to have adopted the frequently-voiced suggestion that preparing students to pass the CPA exam should not be a primary focus of accounting education.

INTRODUCTION

For over 20 years, those interested in accounting education have pondered the question, "What type of curriculum will best prepare students for successful careers in accounting?" The American Accounting Association's Bedford Committee (1986), the then-Big 8 CPA firms (1989), the Accounting Education Change Commission (1990, hereafter referred to as AECC), and Albrecht & Sack (2000) have all answered this question in essentially the same way. In their opinion, accounting education should decrease its traditional focus on the memorization of technical accounting rules and increase its emphasis on critical-thinking, communication, and interpersonal skills.

The end-of-chapter (EOC) material found in accounting textbooks is often the primary source of the questions, exercises, problems, and cases that faculty members use to help students develop the competencies that the instructors consider desirable (Davidson & Baldwin, 2005). For this reason, it is important to know two things about EOC material. First, is it of a type that is capable of developing students' technical, critical-thinking, communication, and interpersonal skills? Second, what types of EOC material do faculty members actually use? Answers to the first question will provide evidence of the extent to which textbook authors provide instructors with the tools they need to fulfill the mandate that the accounting profession has given them. Answers to the second question will furnish insight into the skills that instructors actually emphasize in the courses they teach.

The preceding questions are important in every accounting course. Nevertheless, given the fact that intermediate accounting has long been regarded as "one of the most important courses for accounting majors"

(Dow & Feldman, 1997, 62), the answers to these questions are especially important in the intermediate series of courses. The research that has been published to date, however, has provided only limited answers to these questions, as the following section will demonstrate.

LITERATURE REVIEW

Griffin & Dawkins (1986) surveyed intermediate accounting faculty to determine which textbooks and supplemental materials they used, the number of courses they employed in the intermediate accounting sequence, and the subject matter covered in each course. Libby (1991) investigated the use of cases in a variety of accounting classes. The participants in her study were told to ignore their use of "short case problems . . . resembling textbook examples" and to focus only on "lengthier situations requiring application of technical knowledge and a more global understanding of management motivations and the impact of decisions" (1991, 196). Libby found that approximately 14% of the 79 respondents who taught intermediate accounting used the type of case she was investigating.

Dow & Feldman (1997) surveyed faculty who taught the first intermediate accounting course for the purpose of identifying the techniques that were used to evaluate student performance, the type of material that was utilized to develop students' communication skills, and the nature of the non-textbook material that was employed. Dow & Feldman found that about 15% of their 314 respondents used EOC textbook cases.

Davidson & Baldwin (2005) investigated the extent to which the six levels of Bloom's taxonomy of learning were represented in the questions, exercises, problems, and cases contained in 41 intermediate accounting textbooks written by eight author teams during the period 1953 – 2001. Davidson & Baldwin examined only the "revenue recognition" and the "investments" chapters in each textbook and found the following. First, for both chapters combined, the amount of EOC material in the lower levels (i.e., Levels 1 – 4) of Bloom's taxonomy was at least 84% in each textbook. Second, across author teams, the amount of EOC material at the upper levels (Levels 5 and 6) of the taxonomy was not that much different for the two chapters (12% for revenue recognition versus 8% for investments).

As the preceding discussion indicates, intermediate accounting research has tended to describe how educators structure their courses. Only Davidson & Baldwin (2005) have addressed the question of whether the nature of EOC material is such that it can develop in students the skills that most observers believe are necessary for successful careers in accounting. Davidson & Baldwin's findings must be interpreted with caution, however, in light of the fact that they studied only two topics and examined none of the intermediate books that are currently on the market. Concerning the question of what types of EOC material faculty members use, the research to date has focused only on cases.

PURPOSE OF THE STUDY

The study described in this paper had two purposes. The first was to fill a gap in the existing accounting education literature by obtaining information regarding the extent to which intermediate accounting instructors utilize each type of EOC material found in the textbooks that they use. The study focused solely on "large" schools, which the author defined as schools that had at least five faculty members at or above the rank of assistant professor. The author felt that "small" schools, in order to compensate for their limited number of teachers, might assign higher-than-normal teaching loads to their instructors. These

loads, coupled with the pressure to perform research and service activities, might cause faculty members at small schools to utilize EOC material to a lesser extent than they otherwise would, which, in turn, could have caused a "low utilization" bias in the study's results.

The study's second purpose was rooted in the fact that many of the calls for accounting education reform have been based not on direct knowledge of what accounting instructors actually teach but rather on one of the following factors: complaints about accounting graduates' communication, reasoning, and problem-solving skills (Bedford Committee, 1986, 177); declining enrollments in accounting programs (Big 8 CPA firms, 1989, 1); the perceived failure of accounting programs to keep pace with changes in the accounting profession (Big 8 CPA firms, 1989, 1; AECC, 1990, 1); or reports by accounting graduates of disappointing early employment experiences (AECC, 1993, 431). These factors clearly suggest that something is wrong with accounting education. However, without information regarding what accounting educators actually do, those who advocate change in accounting education do not know exactly where the "problem" is or what specific steps should be taken to fix it. By providing information about how intermediate accounting instructors actually use EOC textbook material, the current study will help reformers more clearly discern the nature of the "problem" in accounting education.

SAMPLE SELECTION

The study described in this paper began in Fall, 2005, when the author randomly selected, with the aid of a random number table found in Ostle & Mensing (1975, 560), 100 of 490 U.S. universities listed in the 2004-2005 Accounting Faculty Directory (Hasselback, 2004). The population size of 490 schools was less than the 843 U.S. universities listed in the Directory because the following types of schools were excluded from the study:

1. Schools whose accounting departments did not have at least five faculty members at or above the rank of assistant professor.
2. Schools that taught only graduate classes.
3. Schools that specialized in an area other than accounting (e.g., hotel management).

Once 100 schools had been selected from the Accounting Faculty Directory, the author obtained the following information from representatives of the accounting departments at these schools: course numbers for the intermediate accounting courses that were being taught in Fall, 2005; the names and e-mail addresses of the instructors teaching these courses; and the names of the textbooks being used in the courses. (In some cases, textbook names were obtained from university bookstores.)

Table 1 reveals that the overwhelming majority of the 100 schools used a "traditional" intermediate accounting textbook – that is, a book that was neither a pared-down, "fundamentals" book (e.g., Kieso, Weygandt & Warfield, 2003) nor a book (e.g., Revsine, Collins & Johnson, 2005) that focused primarily on the decision-making relevance of accounting information. Table 1 also shows that, of the 95 schools that used a traditional textbook, about 75% used the book by Kieso, Weygandt & Warfield (2004 and 2005).

Table 1: Textbook Usage

Kieso	Spiceland	Stice	Nikolai	Norton	Total	
PANEL A (Number of schools using textbook):						
71	14	7	2	1	95	
==	==	=	=	=	==	
PANEL B (Number of teachers using textbook):						
Intermediate I	90	17	8	3	1	119
Intermediate II & III	66	9	6	1	0	82
Total	156	26	14	4	1	201
	===	==	==	=	=	===

Note 1. In addition to the "traditional" textbooks shown above, a total of seven schools used a "nontraditional" book (i.e., a book that was either a "fundamentals" book (e.g., Kieso, Weygandt & Warfield, 2003) or a book (e.g., Revsine, Collins & Johnson, 2005) that focused primarily on the decision-making relevance of accounting information).

Note 2. The total number of schools represented in Panel A and Note 1 is 102 (95 + 7). This number is greater than the 100 schools that were selected for potential inclusion in the study because (a) one university used Spiceland, Sepe & Tomassini (2004a) for Intermediate Accounting I and Stice, Stice & Skousen (2004) for Intermediate II and (b) one school used Spiceland, Sepe & Tomassini (2004a) for Intermediate I and Kieso, Weygandt & Warfield (2005) for Intermediate II.

Note 3. The textbooks referenced in this table are:
Kieso = Kieso, Weygandt & Warfield (2004 and 2005)
Spiceland = Spiceland, Sepe & Tomassini (2004a and 2004b)
Stice = Stice, Stice & Skousen (2004)
Nikolai = Nikolai & Bazley (2003)
Norton = Norton, Diamond & Pagach (2007)

QUESTIONNAIRE CONSTRUCTION AND DISTRIBUTION

As mentioned earlier, this study was designed to obtain information from intermediate accounting faculty members regarding their utilization of the EOC material in their textbooks. Drawing meaningful conclusions about such usage, however, obviously requires that a sufficiently large number of instructors participate in the study. The author did not believe that this would be possible for either the instructors who used the Spiceland book for Intermediate Accounting II and III or the instructors who used the Stice, Nikolai, and Norton books. This belief was based on (a) the small number of faculty members who used these books (see Table 1, Panel B) and (b) the fact that, in the surveys of intermediate accounting faculty that have been reported in the accounting literature, the highest response rate was 56.2% (Dow & Feldmann, 1997). In light

of the foregoing, then, the author included in the study only (a) faculty members who used the Kieso textbook and (b) instructors who used the Spiceland book for Intermediate Accounting I.

After deciding which instructors would be included in the study, the author constructed a questionnaire that asked the recipients to indicate, for each type of EOC material contained in their textbooks, the number of items that they used in each of the chapters they covered. For purposes of this study, an item was considered "used" if the instructor did any of the following: assigned the item as homework, required students to answer or work the item in class, answered or worked the item in class as part of a lecture, or told students they should study the item as practice for an exam. Six weeks after the questionnaires were mailed, an e-mail "second request" reminder was sent to the instructors to whom the questionnaires were originally sent.

PARTICIPANT RESPONSES

Table 2 presents information about the number of questionnaires that were sent to and completed by the intermediate accounting instructors who were selected to participate in the study. Panels A and B of this table reveal the following. First, 22% (34 of 156) of the Kieso users and 35% (6 of 17) of the Spiceland users completed their questionnaires. Second, 18 instructors (four of whom were "second request" respondents) who used the Kieso book for the first intermediate accounting course and 16 faculty members (none of whom were "second request" respondents) who used the book in Intermediate Accounting II and III actually participated in the study. While these numbers (i.e., 18 and 16) were not as high as the author would have liked, they were nevertheless high enough to allow meaningful conclusions to be drawn about the utilization of the EOC material in the Kieso textbook.

Table 2: Questionnaire Data and Respondent Demographics

	Kieso	Spiceland	Total
PANEL A (Questionnaires sent):			
Intermediate I	90	17	107
Intermediate II & III	66	0	66
Total	156	17	173
	===	==	===
PANEL B (Questionnaires completed by respondents):			
Intermediate I	18	6	24
Intermediate II & III	16	0	16
Total	34	6	40
	===	==	===

Table 2: Questionnaire Data and Respondent Demographics			
	Kieso	Spiceland	Total
PANEL C (Respondent demographics – number of respondents):			
Academic rank:			
Professor	11	3	14
Associate	10	1	11
Assistant	5	0	5
Other		3	2
Not shown	5	0	5
Total	34	6	40
	===	==	===
Years teaching intermediate accounting:			
0-5 years	6	0	6
6-10 years	5	1	6
11-15 years	7	1	8
Over 15 years	11	4	15
Not shown	5	0	5
Total	34	6	40
	===	==	===
Gender:			
Male	20	4	24
Female	9	2	11
Not shown	5	0	5
Total	34	6	40
	===	==	===
Note 1. The textbooks referenced in this table are: Kieso = Kieso, Weygandt & Warfield (2004 and 2005) Spiceland = Spiceland, Sepe & Tomassini (2004a and 2004b)			

Third, as shown in Table 2, only six Spiceland users (two of whom were "second request" respondents) participated in the study. Since it is hard to make valid observations in the presence of such a small number of respondents, the author decided to exclude the Spiceland respondents from further analysis. Thus, the discussion that comprises the remainder of this paper is based solely on the respondents who used the Kieso textbook.

Obviously, the author was disappointed that more Spiceland users did not participate in the study. Nevertheless, the author was not overly concerned that the study focused only on the Kieso book. Indeed, the

book is "the standard by which all other intermediate texts are measured" (Jones, Carter & Hogan, 2004, 47) and, as such, information about the utilization of the EOC material therein is important for both accounting faculty members and the Kieso authors. The former can use the study's findings as a benchmark against which they can asses the manner in which they use the EOC material. The latter can use the study's findings to modify the EOC material in future editions of the textbook to meet the needs of the book's users.

Before examining the study's results, the author would like to make one final comment. As mentioned earlier, only four of the 34 respondents who used the Kieso book were "second request" respondents. Because of the difficulty of reaching statistically valid conclusions with only four respondents, a nonresponse bias test was not performed for the Kieso users. Instead, all Kieso respondents were considered to be one group, regardless of whether they responded to the first or the second request to participate in the study.

CHAPTER GROUPINGS

Table 3 shows that, in general, the Kieso users covered Chapters 1-12 in Intermediate Accounting I and Chapters 14-24 in either Intermediate II or Intermediate III. Chapter 13 seemed to be a "transitional" chapter, with nine respondents covering it in Intermediate I and seven respondents including it in Intermediate II. Chapter 24 was covered by only four respondents, and, for this reason, is excluded from further analysis in the remainder of this paper.

Table 3: Kieso, Weygandt & Warfield (2004 and 2005) Textbook – Chapter Coverage by Course

		Number of Respondents Who Covered Indicated Chapter in Indicated Course			
		Intermediate Acctg.			
Chapter	Topic	I	II	III	Total
Intermediate I:					
1	Financial accounting and accounting standards	16	1	0	17
2	Conceptual framework underlying financial accounting	17	0	0	17
3	The accounting information system	16	0	0	16
4	Income statement and related information	17	0	0	17
5	Balance sheet and statement of cash flows	17	0	0	17
6	Accounting and the time value of money	14	2	1	17
7	Cash and receivables	18	0	0	18
8	Inventories: a cost basis approach	18	0	0	18
9	Inventories: additional valuation issues	18	0	0	18
10	Acquisition & disposition of property, plant & equipment	17	1	0	18

Table 3: Kieso, Weygandt & Warfield (2004 and 2005) Textbook – Chapter Coverage by Course					
		Number of Respondents Who Covered Indicated Chapter in Indicated Course			
		Intermediate Acctg.			
Chapter	Topic	I	II	III	Total
11	Depreciation, impairments, and depletion	17	1	0	18
12	Intangible assets	15	1	0	16
Transition:					
13	Current liabilities and contingencies	9	7	0	16
Intermediate II & III:					
14	Long-term liabilities	3	14	0	17
15	Stockholders' equity	0	13	0	13
16	Dilutive securities and earnings per share	0	12	1	13
17	Investments	1	11	1	13
18	Revenue recognition	3	9	2	14
19	Accounting for income taxes	0	13	2	15
20	Accounting for pensions and postretirement benefits	0	12	2	14
21	Accounting for leases	0	12	2	14
22	Accounting changes and error analysis	1	11	2	14
23	Statement of cash flows	1	13	2	16
24	Full disclosure in financial reporting	0	2	2	4

In studying the participants' responses, the author was interested in two things: (1) the percentage of respondents who covered a given chapter and who, for each type of EOC material, used at least one item of that type and (2) the number of items of a given type that the respondents actually used. Prior to determining either of these things, however, the author placed the Kieso chapters into groups. The manner in which this was done and the reason for doing it are explained in the paragraphs that follow.

It seems reasonable to assume that a faculty member's decision to use a certain type of EOC material in a given chapter depends at least in part on the nature of the topics discussed in that chapter. For example, an instructor might believe that cases promote more effective learning in a chapter dealing with financial reporting while exercises are best suited to a chapter that describes the procedures involved in recording the purchase and sale of inventory. In light of the foregoing, then, the Kieso chapters were grouped according to the nature of the material covered therein. The groupings appear in Table 4 and are discussed more fully below.

Chapter 1 contained no computational-type material (i.e., Brief Exercises, Exercises, and Problems) and, for this reason, was placed in a group by itself. Chapters 2, 4, and 5 addressed financial reporting and the Financial Accounting Standards Board's (hereafter, FASB) conceptual framework project and were put into a second group. Chapters 3 and 6, which dealt with "fundamental" issues like the accounting cycle and the time value of money, formed a third group. The final Intermediate I group consisted of Chapters 7-12, which described the procedures to be followed in accounting for balance sheet topics.

Due to the extremely diverse set of topics that the respondents covered in Intermediate II and III, the formation of groups for Chapters 14-23 was more difficult than it was for Chapters 1-12. To facilitate the formation of groups for the former, the author reviewed the groupings found in the Stice, Nikolai, Norton, and Spiceland textbooks. Following this review, the author made the following decisions. Consistent with the treatment in the non-Kieso books, Chapters 19-21 in Kieso (which covered income taxes, pensions and postretirement benefits, and leases) were grouped together. Chapters 14-18, which discussed the accounting procedures associated with balance sheet and income statement topics and for which the groupings in the non-Kieso books differed widely, were placed into a second group. Finally, Chapters 22 and 23, both of which addressed financial reporting, constituted a third group.

RESULTS – USAGE PERCENTAGES

Table 4 shows the usage percentages for each group of Kieso chapters. Before reviewing this table, however, the reader should note the following. First, for a given type of EOC material in a given group of chapters, the term "usage percentage" refers to the average percentage of respondents who used at least one item of that type in each chapter in the group. Second, the amounts in Table 4 are based on two types of respondents – those who indicated the number of EOC items they used and those who, contrary to the questionnaire's instructions, did not show how many items they used but who, through a "Yes" response, indicated that they did use a particular type of EOC material. Finally, because the current study was descriptive in nature, formal hypothesis tests were not conducted, and the statistical significance of the differences observed in Table 4 was not tested.

The first thing that stands out in Table 4 is the respondents' consistently high use of Exercises. Indeed, with the exception of Chapter 1 (which did not contain Exercises), the usage percentage was at least 94% in every chapter. Problems, which generally required students to make more calculations than Exercises, were used almost as frequently as Exercises in the early stages of Intermediate I (i.e., Chapters 2-6). The usage percentages declined, however, as the Kieso text progressed through its coverage of the balance sheet and income statement topics found in Chapters 7-21. The usage percentages for Problems were their lowest in Chapters 22 and 23.

Unlike Problems, Brief Exercises usually asked students to make fewer calculations than Exercises. Table 4 shows that, although they were utilized much less frequently than either
Exercises or Problems, Brief Exercises were nevertheless used fairly consistently and at a moderate level (usage percentages were 33%-36%) throughout the Intermediate I chapters. Beginning in Chapter 13, however, the percentage of respondents using Brief Exercises dropped markedly – to 6% in Chapter 13 and to 13%-21% in Chapters 14-23.

Table 4: Kieso, Weygandt & Warfield (2004 and 2005) Textbook – Usage Percentages								
	Questions	Brief Exercises	Exercises	Problems	Conceptual Cases	Other Cases	Financial Reporting Problems	Professional Simulations
Intermediate I:								
Introduction:								
Ch. 1	18%	NA	NA	NA	82%	0%	12%	6%
Conceptual framework & financial reporting:								
Ch. 2, 4, & 5	14%	33%	94%	91%	45%	1%	10%	6%
Fundamentals:								
Ch. 3 & 6	9%	33%	94%	91%	NA	1%	9%	6%
Balance sheet topics:								
Ch. 7-12	12%	36%	98%	87%	29%	2%	6%	6%
Transition:								
Ch. 13	25%	6%	100 %	81%	19%	0%	6%	6%
Intermediate II & III:								
Balance sheet & income statement topics:								
Ch. 14-18	20%	13%	99%	83%	10%	3%	14%	7%
Special topics:								
Ch. 19-21	28%	21%	98%	77%	12%	2%	14%	9%
Financial reporting:								
Ch. 22 & 23	23%	20%	97%	63%	17%	1%	13%	3%

Table 4: Kieso, Weygandt & Warfield (2004 and 2005) Textbook – Usage Percentages

	Questions	Brief Exercises	Exercises	Problems	Conceptual Cases	Other Cases	Financial Reporting Problems	Professional Simulations

Note 1. "NA" means that the chapter did not contain the indicated material.

Note 2. For a given type of EOC material in a given chapter group, the percentage shown herein represents the average percentage of respondents who used at least one item of that type in each chapter in the group. The percentages were determined as follows:

$$\text{Percentage} = \sum P_i \div \sum C_i$$

where: P_i is the number of respondents who used at least one item in the i^{th} chapter in the group ($i = 1, 2, \ldots n$)

C_i is the number respondents who covered the i^{th} chapter in the group ($i = 1, 2, \ldots n$)

n is the number of chapters in the group

Questions were used sparingly in all of the Intermediate I chapters, as seen in the fact that the usage percentages were in the 9% to 18% range for every chapter. More respondents used questions in Chapters 13-23, but, even so, the usage percentages were still low (20%-28%).

The Kieso textbook contained the following types of case material: Conceptual Cases, Research Cases, Comparative Analysis Cases, Financial Statement Analysis Cases, and International Reporting Cases. Although it is not shown in Table 4, the respondents totally ignored the Research Cases in 14 of the 22 chapters in which they appeared. Comparative Analysis Cases were used in only two of 19 chapters. Financial Statement Analysis Cases were used in about 50% of the 21 chapters that contained them, while International Reporting Cases were ignored by all of the participants who encountered them. When cases other than Conceptual Cases were used, the usage percentages were in the 6%-8% range. Because they were used so infrequently, cases other than Conceptual Cases were combined into a single category called "Other Cases." As Table 4 indicates, the Other Cases, as a group, were seldom used.

The Conceptual Cases generally required students to do some type of writing, whether it was explaining the differences between accounting alternatives, discussing the advantages and disadvantages of an accounting procedure, specifying the appropriate accounting treatment for an item, or commenting on an ethical issue. Table 4 shows that the usage percentages for Conceptual Cases were the highest in the Intermediate I chapters that contained no computational-type material (Chapter 1) or that focused on financial reporting or its underlying conceptual framework (Chapters 2, 4, and 5). As the textbook chapters became more procedural in nature, however, the usage percentages steadily declined.

Financial Reporting Problems asked students to answer questions by referring to the financial statements of 3M Company, which were contained in a textbook appendix. Table 4 shows that, while they

were used more frequently than the Other Cases, Financial Reporting Problems were nevertheless used by only a small percentage of respondents (6%-14%). In addition, Financial Reporting Problems were employed slightly more frequently in Chapters 14-23 than in Chapters 1-13.

Professional Simulations presented students with questions and problems in a format similar to that of the new computerized CPA exam. As revealed in Table 4, only 3%-9% of the respondents used the Simulations in any given chapter.

RESULTS – NUMBER OF ITEMS USED

Table 5 shows the average number of items that the respondents used. Before examining this table, the reader should consider the following. First, for a given type of EOC material in a given chapter group, the amount in Table 5 represents the average number of items that were used in each chapter in the group. Second, as was true of the data presented in Table 4, the statistical significance of the differences reported in Table 5 was not investigated.

A quick glance at Table 5 reveals that, for every chapter group except Chapter 1, the respondents used more computational-type items (i.e., Brief Exercises, Exercises, and Problems) than they did Questions and Conceptual Cases. This is not surprising in light of the fact that most of the chapters in the Kieso book are procedural in nature – that is, they describe the procedures that one must follow to record the transactions in which organizations engage. Table 5 also provides the basis for the following observations. First, the respondents used the fewest Exercises in the Intermediate I chapters dealing with (a) financial reporting and the FASB's conceptual framework project (Chapters 2, 4, and 5) and (b) accounting fundamentals (Chapters 3 and 6). For all other chapter groupings, the participants used 6.1-7.1 Exercises in each chapter.

Second, the participants who taught Intermediate II and III used more Problems than those who taught Intermediate I. The latter used more Brief Exercises than the former, however. Third, the respondents used more Questions in Chapters 1-13 than they did in Chapters 14-23. Finally, more Conceptual Cases were used in Chapter 1 than in any of the other chapter groupings. This was probably due to the nature of the in-chapter material and the fact that Chapter 1 contained no computational-type material. In all other chapter groups, the participants used no more than two cases, suggesting that case usage was not affected by the nature of the in-chapter material.

Table 5: Kieso, Weygandt & Warfield (2004 and 2005) Textbook – Average Number of Items Used

	Questions	Brief Exercises	Exercises	Problems	Conceptual Cases
Intermediate I:					
Introduction:					
Ch. 1	7.0	NA	NA	NA	4.1
Conceptual framework and financial reporting:					
Ch. 2, 4, & 5	8.0	7.0	4.2	2.6	1.7
Fundamentals:					
Ch. 3 & 6	5.7	7.1	4.6	2.7	NA
Balance sheet topics:					
Ch. 7-12	10.5	7.2	7.1	2.8	1.3
Transition:					
Ch. 13	9.8	3.0	6.2	3.4	1.0
Intermediate II & III:					
Balance sheet and income statement topics:					
Ch. 14-18	7.2	3.7	6.6	3.5	1.7
Special topics:					
Ch. 19-21	5.0	3.8	6.5	3.8	1.4
Financial reporting:					
Ch. 22 & 23	4.2	2.3	6.1	3.2	1.8

Note 1. "NA" means that the chapter did not contain the indicated material.

Note 2. For a given type of EOC material in a given chapter group, the number shown herein represents the average number of items the respondents used in each chapter in the group. The averages were determined as follows:

$$\text{Average} = \sum N_i \div \sum R_i$$

where: N_i is the total number of items the respondents used in the i^{th} chapter in the group ($i = 1, 2, \ldots n$)
R_i is the number of respondents who indicated how many items they used in the i^{th} chapter in the group ($i = 1, 2, \ldots n$)
n is the number of chapters in the group

Note 3. The manner in which the averages in this table were computed would have given the erroneous impression that the respondents used one Other Case, one Financial Reporting Problem, and one Professional Simulation in each chapter in each group. Consequently, averages were not reported for these items. On the rare occasions when the respondents did use these types of materials, however, they generally used only one item of a given type.

CONCLUSIONS

The findings discussed above provide the basis for the following conclusions. First, the extremely high usage percentages for Exercises and Problems (Table 4) and the large number of Brief Exercises, Exercises, and Problems that the respondents used (Table 5) suggest that the participants were primarily interested in developing their students' technical accounting knowledge. This is not surprising for two reasons. First, employers expect accounting students to know certain things when they graduate (e.g., how to calculate depreciation or write off worthless receivables), and the intermediate-accounting sequence of courses is the arena in which many of these things are learned. Second, the entities that have called for accounting education reform have never suggested that academicians stop teaching technical material. Rather, they have expressed the belief that, in the words of the Bedford Committee (1986, 178), "the teaching process should be expanded to assure that students not only learn the technical professional accounting body of knowledge, but also develop the ability to use that knowledge analytically, in creative and innovative ways."

Second, the respondents seem to have made an effort to develop their students' critical-thinking and communication skills. As Table 4 indicates, this effort appears to have relied mainly on Conceptual Cases in Intermediate I and on Questions, Conceptual Cases, and Financial Reporting Problems in Chapters 13-23. It is possible that the respondents, like those in the Libby (1991) and the Dow & Feldmann (1997) studies, used cases from non-textbook sources. Since data concerning the respondents' use of the latter was not collected in the study, it is not possible to make inferences about the relative importance that the participants attached to the development of students' technical knowledge vis-à-vis their non-technical skills. Finally, as indicated by the low usage percentages for Professional Simulations (Table 4), the respondents appear to have embraced the oft-voiced recommendation that preparing students to pass the CPA exam should not be a primary focus of accounting education.

LIMITATIONS

The study described in this paper has the following limitations. First, the data presented in Tables 4 and 5 for a given chapter group are based on the responses of only the 13-18 intermediate accounting teachers who covered the chapters in that group. It is possible that these respondents are not representative of the population of Kieso textbook users, even though the respondents were fairly equally dispersed throughout the Eastern, Southern, Midwestern, and Western portions of the United States. Second, this paper described usage patterns for only one set of textbook authors – Kieso, Weygandt & Warfield (2004 and 2005). Different patterns might have been observed had enough teachers using other textbooks participated in the study. Third, the study excluded schools whose accounting departments did not have at least five faculty members at or above the rank of assistant professor. It is possible that the study's findings would have been different had such schools been included.

FUTURE RESEARCH

The study described in this paper represents a preliminary step in determining the manner in which instructors use the EOC material found in intermediate accounting textbooks. Clearly, further research is needed to validate the representativeness of the results reported herein for the Kieso textbook users. Second,

research is also needed to identify the extent to which intermediate accounting teachers who have adopted textbooks other than Kieso actually use the EOC material contained therein. Third, whereas Tables 4 and 5 revealed how the respondents used the EOC material in the Kieso textbook, future researchers should address the question of why intermediate accounting faculty use EOC material in the way that they do. Fourth, future studies should attempt to identify the types of skills that are being developed in upper-level classes other than intermediate accounting. Fifth, additional research is needed to determine the manner in which faculty members at "small" schools utilize EOC material. Finally, the low usage percentages reported in Table 4 for certain types of EOC material and the fact that (although not shown in Table 5), for a given type of EOC material, the respondents used only a handful of the items that were available to them suggest that future research should address the subject of what EOC material, if any, could be eliminated from textbooks without adversely affecting faculty members' ability to accomplish their educational goals.

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ESSAY VERSUS MULTIPLE-CHOICE: STUDENT PREFERENCES AND THE UNDERLYING RATIONALE WITH IMPLICATIONS FOR TEST CONSTRUCTION

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ABSTRACT

The budget cuts experienced at many universities are leading to larger class sizes and pressuring faculty to make greater use of multiple-choice exams, a practice that conflicts with the frequently held intuitive belief that multiple-choice is inferior to essay and other open-ended assessments for both measuring and promoting student learning. This paper reviews previous findings suggesting that teaching methods designed to encourage higher-order thinking among students tend to do so and that the adoption of study strategies focused on learning with greater understanding tend to lead to superior student performance, relating those results specifically to the use of multiple-choice versus essay questions. It will also report the results of a survey administered to undergraduate business students in which the students specified not only their preferences for multiple-choice or essay but also the rationale behind those preferences. The results suggest that students generally prefer multiple-choice but become more enthusiastic about essays when they are well prepared for exams. The responses concerning preference rationale are seen to fall into two major factors, one focused on the ease of obtaining a high test score (and favoring multiple-choice) and the other focused on the fairness and validity of the assessment (and favoring essay). These results, in conjunction with suggestions derived from the literature, are used to develop assessment-related pedagogical recommendations.

INTRODUCTION

Many universities are experiencing budget cuts that result in larger classes. The need to teach these larger classes without suffering an excessive reduction in the amount of time available for research and service-related endeavors exerts pressure on faculty to make increasing use of multiple-choice questions on quizzes and exams. Although multiple-choice questions provide the obvious benefit of being easier to grade, their use is in conflict with the intuitive feelings of many faculty that multiple-choice questions are inferior to essays and other open-ended forms of assessment both as a measure and as a promoter of student learning.

Previous studies have demonstrated that the use of assessments that test higher-order thinking can encourage students to pursue study strategies that develop a deeper level of understanding rather than utilizing strategies that achieve little more than test-related recall. Previous work has also demonstrated that the use of these deeper learning strategies tends to lead to greater learning, at least for those learning tasks requiring higher-order thinking. This paper will review those results, relating them to the choice between multiple-

choice and essay, and also discuss various other strengths and weaknesses of the essay and multiple-choice format. The paper's major purpose is to extend the knowledge of student assessment preferences by investigating the rationale behind those preferences. It will report the results of a survey questionnaire in which undergraduate business students in a junior level Principles of Management course and a capstone Strategic Management course specified not only their preferences for multiple-choice or essay but also the reasons for those preferences. The patterns that result will demonstrate two main factors driving student opinions, one factor focused on the ease of obtaining a high test score (with preferences for multiple-choice) and the other focused on the fairness and validity of the assessment measure (with preferences for essay). These results, in conjunction with various ideas drawn from the literature, will be used to generate exam-related pedagogical recommendations.

ESSAY VERSUS MULTIPLE-CHOICE AS A MEAURE OF LEARNING

Because the primary goal of an exam is to accurately assess student learning, one of the key issues to consider is whether or not open-ended and multiple-choice questions differ in terms of reliability and validity. The literature tends to favor multiple-choice. For example, Bridgeman (1992) suggested that although multiple-choice is less reliable on a question-by-question basis due to guessing, the fact that multiple-choice questions take less time to answer (and grade) would allow an exam made up entirely of multiple-choice to contain more questions and therefore be more reliable than an exam containing fewer open-ended questions. Hassmen and Hunt (1994) agreed but also suggested that guessing shouldn't be discouraged because guesses are generally based at least partially on student knowledge of the relevant course content. A weakness of essay questions cited by many authors is that they require subjective grading, with even factors that are unrelated to answer content shown to have an impact on exam scores. For example, Powers, Fowles, Farnum and Ramsey (1994) found that handwritten answers tended to be graded more leniently than identical answers written using a word processor. The authors suggested that graders may be more forgiving of handwritten answers because poor penmanship can disguise spelling and grammar errors, because the scratch-outs that appear in handwritten answers demonstrate the students' efforts at improvement and because word processed answers tend to fill less space on the page and therefore may appear to be less complete.

A related measurement issue concerns the question of whether or not essays and other forms of open-ended questions truly assess different dimensions of learning than are assessed by multiple-choice. Many studies have found that student scores on open-ended questions were so closely related to their scores on multiple-choice as to suggest that both types of questions were measuring the same things (Bridgeman, 1992; Lukhele, Thissen & Wainer, 1994; Walstad & Becker, 1994), suggesting that the difficult-to-administer open-ended questions might not be worth the extra effort because multiple-choice alone could be used to assess the same learning. Lukhele et al. noted further that essays became particularly unhelpful as a measure of learning if students were allowed to select the questions to answer from a longer list of questions provided, allowing the students to avoid topics they hadn't learned. In contrast, Thissen, Wainer and Wang (1994) and Harris and Kerby (1997) found that essay scores and multiple-choice scores, although significantly correlated, were not so closely related as to be identical. Even more convincingly, Becker and Johnston (1999) applied two-stage least squares, a more sophisticated statistical procedure than was used in most previous studies of

this topic, and found that essay and multiple-choice scores were not significant predictors of each other, suggesting that they were clearly measuring different dimensions of knowledge.

Various authors have provided potential explanations for the high correlations often seen between multiple-choice and essay scores, implying that this should not be interpreted as a suggestion that both types of questions measure the same learning. Driessen and van der Leuten (2000) suggested that student reasoning is so difficult to grade that the grading process for essay answers may unintentionally deteriorate into an exercise in counting the number of facts provided in the answer, thereby turning even an essay question into a recall-oriented question. Because many students recognize that quantity is often rewarded and therefore attempt to provide it in their answers, timed exams may not give students the opportunity to provide both the quantity-oriented list of facts and the more thoughtful organization, integration, and analysis of those facts that would demonstrate higher order thinking (Minbashian, Huon & Bird, 2004). Students who are fearful of failure are particularly prone to this behavior of attempting to provide quantity (Diseth & Martinsen, 2003).

Despite the mixed evidence for the existence of a meaningful difference between what is measured by multiple-choice questions and what is measured by open-ended questions, many authors suggest that open-ended questions are more effective at assessing higher order thinking in contrast to the recall-oriented focus often seen in multiple-choice (Bridgeman, 1992; Scouller, 1998; Scouller & Prosser, 1994; Walstad & Becker, 1994). For example, essay answers can demonstrate student thought processes and creativity in a way that cannot be achieved using multiple-choice (Walstad & Becker, 1994). Students may hold these same perceptions of multiple-choice questions as being targeted at lower level recall-oriented learning (Scouller, 1998), even for multiple-choice questions that have been specifically designed to test higher level learning (Scouller & Prosser, 1994). Faculty should pay full attention to student perceptions of assessment methods because those perceptions may influence student study strategies, as will be discussed further below.

ESSAY VERSUS MULTIPLE-CHOICE AS A PROMOTER OF LEARNING

Student perceptions of what learning really is and the study strategies used to achieve that learning are conventionally classified into two categories, surface and deep. Surface-oriented strategies focus on course content as a set of disconnected ideas that are to be accepted passively from the instructor or text. The primary learning goal is to memorize facts and subsequently reproduce them on an exam (Entwistle & Entwistle, 1992; Minbashian et al., 2004). To a certain extent, surface strategies could be viewed as simply the lack of a strategy. As shown by Scouller and Prosser (1994), surface-oriented students tend not to be self-reflective about their studying processes and may not really be able to appreciate the difference between the recall of facts and a true understanding of the material. The surface orientation can apply to the instructor as well as to the students. A surface-oriented instructor, operating under the assumption that students bring little expertise of their own to the class, would tend to emphasize lecture with the view that his primary task is to impart information.

In contrast, deep learning strategies focus on achieving true understanding rather than simply preparing for the test. This would involve more self-directed learning with less focus on the teacher being in charge, increased collaboration between students, integration of ideas, critical evaluation of the logic and evidence that support each new concept, inference of abstract principles from examples, and careful monitoring of one's own understanding accompanied by efforts to clear up any misunderstandings as they arise (Chi, Bassok, Lewis, Reimann & Glaser, 1989; Minbashian et al., 2004). Students report that the sense

of being able to integrate the various ideas into one's own structure and recognize the patterns that result is a key component of their understanding (Entwistle & Entwistle, 1992). Students using deep strategies tend to have a feeling of being in control of their own learning as well as a sense of excitement. Because these students, in essence, construct their own knowledge through their strategic efforts, deep learning is often referred to as constructivist. A deep-oriented instructor would deemphasize lecturing and instead encourage questions and discussion, present multiple perspectives rather than portraying ideas as completely true or completely false, provide time and opportunities for student collaboration, relate course content to professional practice, provide frequent feedback and encourage students to monitor their own understanding.

Any given student would generally apply a mix of surface and deep strategies, with most students having a bias toward one or another and some being adept at adjusting their choice of strategy in reaction to the characteristics of a particular class or assignment. Some students, unfortunately, apply little of either type, seeming unwilling or unable to evaluate their own largely strategy-free behavior or to develop the study skills necessary to become more strategic. Many authors (Cassady, 2004; Hagedorn , Sagher & Siadat, 2000; Taylor & Hyde, 2000) point out the importance of teaching students how to study effectively in addition to teaching course content. In general, students tend to gravitate toward taking more control over their own learning and adopting more sophisticated study habits as they age and progress through college, graduate school and working careers (Baxter Magolda, 2004; Gijbels, 2005; Richardson; 1995). The conventional assumption that older students returning to school after significant work experience will have poor study practices is not necessarily correct.

Although the results in the literature are somewhat mixed, generally students emphasizing deep strategies and deemphasizing surface strategies have been found to learn more effectively and achieve better performance on assignments involving higher order learning, although their performance may not be better on lower order activities (Gijbels, 2005; Gravoso, Pasa and Mori, 2002; Minbashian et al., 2004; Taylor & Hyde, 2000). As reported by Scouller and Prosser (1994), the use of deep strategies has also been found to lead to greater student satisfaction. Thus it would seem worthwhile for instructors to behave in such a way as to encourage students to adopt deep learning strategies. Trigwell, Prosser and Waterhouse (1999) found that instructors who use surface-oriented teaching methods encourage a similar surface approach from the students and also found a similar although weaker relationship for the deep orientation. A particular danger is that instructors utilizing surface-oriented teaching methods may encourage a surface approach not only in their own classes but also in subsequent classes, making it harder for instructors in those later more advanced classes to prompt the adoption of deeper learning strategies (Raimondo, Esposito & Gershenberg, 1990).

A key question given this paper's contrast of multiple-choice and essay questions, is whether or not the type of exam questions utilized in a course will impact student learning strategies. Scouller (1998) found that students believe different abilities are being assessed by multiple-choice and essay questions, with essays being viewed as testing higher level thinking than multiple-choice. These student perceptions were found to translate into action as students applied more deep strategies and fewer surface strategies when preparing for essays. Although not specifically comparing multiple-choice and essay, Entwistle and Entwistle (1992) similarly found that students' study strategies were impacted by the level of questions they expected to see on the exam, with narrowly focused questions that stressed recall rather than the integration of ideas encouraging the use of surface strategies. Even students who had applied deep strategies throughout the semester and had achieved a high level of understanding felt pressured to apply surface-oriented memorization in the last days leading up to the exam. However, there is also evidence suggesting that

students with a general preference toward deep strategies will continue to use deep strategies even if the exam itself does not encourage that (Entwistle & Entwistle, 1992; Scouller & Prosser, 1994). An overly heavy workload may undermine efforts to encourage deep strategies, possibly due to students believing that recall-focused surface strategies will enable them to quickly gather enough information to pass an exam that they do not have enough to time prepare for more carefully (Taylor & Hyde, 2000). Similarly, an exam on which achieving a high score is particularly critical, for example a single exam on which an entire semester's grade will be based or a highly competitive exam for admission into an exclusive graduate program, may encourage a "beat the test" mentality and therefore foster an increased reliance on surface strategies (Diseth & Martinsen, 2003).

Overall, the evidence suggests that the use of exams focused on higher-order learning is an important component of any teaching effort intended to encourage greater student adoption of deep strategies. Most authors view open-ended questions, including essays, as more capable of achieving a higher-order focus. Gijbels (2005), for example, suggests that even when worded in such a way as to test higher-order thinking, multiple-choice will be approached by students as a task calling for surface-oriented strategies. Nevertheless, there are some counterarguments. Wainer and Thissen (1993) suggest that skilled test writers can create multiple-choice questions that effectively test higher-order thinking and that the obvious efficiency advantages of multiple-choice should promote greater faculty efforts to develop that skill. Suskie (2004) agrees that multiple-choice questions can be written to test some, although not all, of the higher-order thinking skills from Bloom's Taxonomy. Similarly, but from the opposite perspective, Raimondo et al. (1990) advise that not all essay questions are necessarily higher-order as many simply call for recall-oriented answers.

ADDITIONAL CONSIDERATIONS

There are several additional advantages and disadvantages that should be mentioned briefly to complete the discussion. A key disadvantage of multiple-choice questions, especially in light of the fact that grading efficiency is one of their key benefits, is that multiple-choice questions tend to be more difficult to write, thus negating some of the time savings achieved during the grading process. One danger of this problem is that it tends to be more difficult to write multiple-choice questions designed to test higher order thinking than those that test recall, which can result in exams that are more recall-oriented than the instructors might have actually intended (Suskie, 2004). The writing difficulty can also encourage faculty to protect their questions for use in future semesters by not handing back the graded exams or by handing them back only long enough for the students to see the scores (Roediger, 2005), a practice would not only deprive the students of valuable feedback but might also tend to encourage a belief among the students that the test score is the important thing, not the learning. In fairness, it should be noted that the ease with which multiple-choice can be graded can allow very quick feedback in the cases in which the instructor is willing to hand back and review the exam (Becker and Johnston, 1999).

Another disadvantage of multiple-choice is that test-takers are exposed to numerous incorrect answers, many of which may be constructed so as to appear to be correct. Roediger (2005) found that students tended to remember these incorrect lures as being correct when queried about them later, suggesting that students actually learn the wrong things as part of the testing process. A related disadvantage is that students receive corrective feedback whenever their own answer does not appear as one of the available

alternatives, a prompt to reconsider the question and correct their mistake that would not be present in an open-ended assessment (Bridgeman, 1992). Some students react to the availability of the possible answers by working backwards to answer the question, particularly on quantitative problems. Bridgeman (1992) found that 81% of the students reported working backwards to solve problems, a problem-solving methodology that would not normally be appropriate when solving realistic problems in the field.

The need to minimize the impact of this corrective feedback encourages faculty to create incorrect answers that match common student errors or that are worded in such a way as to appear to be correct. The problem with this tactic, however, is that those apparently reasonable but incorrect answers are what the students may most clearly remember later as truly being correct. Creating incorrect answers that match common student mistakes, although potentially problematic as discussed above, can also be viewed as a benefit of multiple-choice in that this method allows an instructor to quickly diagnose the various misconceptions that appear to be occurring most frequently in a given semester.

An additional disadvantage of multiple-choice questions is that they can be gender-biased. As reported by Hassmen and Hunt (1994), numerous studies have shown that men tend to have an advantage on multiple-choice. Including essay questions on an exam can help to reduce this bias.

A major weakness of essay questions is that they are relatively time-consuming to answer, meaning that a timed exam can only include a small number of questions (Walstad & Becker, 1994). This can result in an exam that is unable to evaluate student learning over all of the topics covered in that portion of the course, a problem that can penalize some students and reward others depending upon which topics go untested. This problem of failing to test a significant portion of the course content is exacerbated (but tends to become more favorable for the students) if students are allowed to select the questions that they prefer to answer from a longer list of questions provided.

A final advantage of essay, probably more accurately characterized as a disadvantage of multiple-choice, is that essay or other open-ended questions can more appropriately drive the curriculum and instructional activities. While it would be inappropriately simplistic to view teaching as an exercise in preparing students to pass exams, most faculty would be somewhat accepting of the idea that one of teaching's main goals is to enable students to correctly complete relevant problem-solving exercises and broadly focused integrative essays. Very few, in contrast, would view teaching toward the test to be valid if that test were made up of only multiple-choice questions (Harris & Kerby, 1997).

METHODOLOGY

The intent of this study is to evaluate student preferences for multiple-choice or essay questions and, in particular, to extend that evaluation to investigate the rationale behind those preferences and the extent to which those preferences may change depending on whether the student feels himself to be well prepared or poorly prepared for an upcoming exam. Numerous studies, some cited above, have investigated the relationships between teaching methods, student study strategies and student performance. Various studies have also evaluated student preferences for multiple-choice versus open-ended questions. However, little work has been done to determine student rationales for having given preferences. The data on student preference as a function of preparedness will implicitly suggest which type of question students believe requires greater preparation and may provide some insight concerning the type of exam questions that instructors should use to prompt greater study effort.

Data was gathered using a survey instrument that was completed by 81 undergraduate students enrolled in either the junior-level Principles of Management course or the senior-level Strategic Management capstone course. Because both courses are required for all business students in the program, the sample included a mix of the usual business school majors, i.e. accounting, finance, economics, management, marketing and so forth. Seven of the respondents were pursuing majors other than business.

The first section of the survey, for which students were instructed to reflect upon their entire college experience and not just the course in which they were completing the survey, required the students to respond to eleven statements and two questions. Of the eleven statements, two concerned general preferences for multiple-choice or essay questions and nine concerned the rationale behind those preferences. The students responded to each statement by selecting "Disagree Strongly," "Disagree," "Neutral," "Agree" or "Agree Strongly." The nine available reasons for preferring one type of exam over another were based on discussion with fellow business faculty and extensive anecdotal evidence concerning student opinions about testing methods. These nine statements allowed the expression of opinions such as multiple-choice questions being unfair due to the inability to earn partial credit and multiple-choice being easier because the student doesn't need to know the topic thoroughly but rather just enough to recognize the right answer. More detail on the nine statements will be provided during the discussion of the survey results.

The first section of the survey ended with two questions focused on student preferences for multiple-choice or essay questions as a function of how well prepared the students were for a hypothetical exam. One question asked for the preferred type of exam question if "you are very well prepared for an exam, knowing the subjects involved backwards and forwards." The second asked for the preference if "you haven't been able to study as much as you would have liked and aren't really very well prepared for an exam." In order to provide the students with the option of selecting a middle ground rather than forcing them to either extreme, the students could respond by selecting an exam composed entirely of multiple-choice questions, an exam composed entirely of essay questions, or an exam containing a mix of both types of questions.

The second section of the survey contained a series of statements and questions that were intended to apply only to the class in which the students were currently enrolled. Although this section was designed primarily to obtain feedback on certain class-specific teaching strategies and not as part of this study, some of the results are relevant and will be included in the discussion of the survey results. The third and final section of the survey asked for demographic information such as major and grade point average. The survey concluded with an open-ended question asking for comments in order to solicit input concerning any preference-related rationales that might have been omitted from the nine statements in the first section. The data were analyzed using SPSS.

RESULTS AND DISCUSSION

For purposes of analysis the responses to the 11 statements from the first section of the survey were coded using 1 for "Disagree Strongly" through 5 for "Agree Strongly" such that values of 1 or 2 signified disagreement with the statement, a value of three signified neutrality, and values of 4 or 5 signified agreement. The null hypothesis tested for each statement was "students on average do not agree with the statement," which was expressed numerically as "the population average is less than or equal to 3.0." The alternative hypotheses of "students on average agree with the statement" was expressed numerically as "the population average is greater than 3.0." An abbreviated version of each statement can be found below in

Table 1 along with the sample mean, t score and level of significance. The statements have been numbered for convenience, with the order changed somewhat from that used on the survey to facilitate the discussion that follows the table. Throughout the discussion recall that rejection of the null hypothesis signifies agreement with the relevant statement.

Table 1: Hypothesis Tests of Student Agreement with Assessment Method Statements

Statements (abbreviated versions)	Mean	t score	Significance
(1) I prefer multiple-choice questions to essay questions	3.30	2.375	.01
(2) I prefer essay questions to multiple-choice questions	2.84	-1.227	.888
(3) Multiple-choice easier: I only need to recognize correct answer	3.38	3.339	<.001
(4) Multiple-choice easier: I can eliminate obviously wrong answers	3.70	6.008	<.001
(5) Multiple-choice easier: I might guess correctly even if I don't know	3.52	5.208	<.001
(6) Multiple-choice harder: I need to know nit-picky details	2.79	-1.645	.948
(7) Multiple-choice less fair: I can't earn partial credit	3.47	3.977	<.001
(8) Essay easier: I can earn partial credit even if topic knowledge low	3.14	1.085	.141
(9) Essay harder: I must fully understand topic to produce good answer	3.42	3.693	<.001
(10) Essay more fair: More accurately show what I know/don't know	3.69	6.888	<.001
(11) Essay less fair: Content knowledge results biased by writing skill	2.70	-2.449	.991

Note that statements 1 and 2 (which did not appear consecutively in the survey) are mirror images of one another, with the first stating a preference for multiple-choice over essay and the second stating the reverse. The correlation between these two statements was -.843, close to -1.0 as would be expected. The results for the hypothesis tests of these two statements, as shown in Table 1, led to a rejection of the null hypothesis for the statement preferring multiple-choice and an acceptance of the null for the statement preferring essays. Because these statements are opposites of one another it would be unreasonable to obtain data that would lead to a rejection of the null for both. The results for these two statements were evaluated further using paired t tests.

The paired t test of the difference between the multiple-choice preference and the essay preference resulted in a t score of 1.862 and a significance level of .066, suggesting that there was almost but not quite sufficient evidence to conclude that multiple-choice questions were preferred more highly. Breaking the sample into two subsets, one containing students in the junior-level Principles of Management course and the other containing students in the senior-level capstone Strategic Management course, led to results that were a little more enlightening. The paired t test for the Principles of Management students achieved a t score of 2.824 and a significance level of .007, suggesting that multiple-choice questions were preferred by a significant margin. The Strategic Management students, however, produced a t score of -0.437 and a significance level of .655, suggesting no difference in preference. This finding that the preference for multiple-choice declines for more advanced students is in alignment with the ideas discussed earlier that students tend to develop more of a deep focus and a drive for greater understanding as they progress through school (Baxter Magolda, 2004; Gibjels, 2005; Richardson, 1995).

To investigate whether the preferences were impacted by the presence of a quantitative orientation, the subset of the sample majoring in accounting, finance or economics was compared to the other students. The supposition that quantitative skills might be correlated with a dislike for writing and hence a dislike of essays was not supported by the data.

As can be seen in Table 1, the null hypothesis was rejected for six of the nine rationale-related statements. The results suggested that students agreed with three of the statements related to the ease of multiple-choice: (3) Multiple-choice easier: I only need to recognize correct answer; (4) Multiple-choice easier: I can eliminate obviously wrong answers; and (5) Multiple-choice easier: I might guess correctly even if I don't know. The results also suggested agreement with one statement about the unfairness of multiple-choice, (7) Multiple-choice less fair: I can't earn partial credit. The results demonstrated support for two statements concerning essay questions, one statement about the difficulty of essays, (9) Essay Harder: I must fully understand topic to produce good answer, and one statement about the fairness of essays, (10) Essay more fair: More accurately show what I know/don't know. Only three statements were not supported: (6) Multiple-choice harder: I need to know nit-picky details; (8) Essay easier: I can earn partial credit even if topic knowledge low; and (11) Essay less fair: Content knowledge results biased by writing skill.

In general the significant statements appear to show two trends, one suggesting that students believe that multiple-choice questions are easier and another suggesting that students feel essay questions to be fairer and more valid. To further investigate this phenomenon a factor analysis was run which resulted in two factors, the first of which explained 40.46% of the variance and the second of which explained 20.06%. Excluding loadings between .40 and -.40, the first factor had positive loadings on all four statements viewing multiple-choice as easier or similarly essays as more difficult, statements 3, 4, 5 and 9, and loaded negatively on all other statements. The second factor loaded on all three fairness-related statements. It loaded positively on (7) Multiple-choice less fair: I can't earn partial credit, and (10) Essay more fair: More accurately show what I know/don't know, and loaded negatively on (11) Essay lass fair: Content knowledge results biased by writing skill. The second factor also loaded positively on (4) Multiple-choice easier: I might guess correctly even if I don't know. These results suggest that the ability to obtain a high score more easily (via multiple-choice) and the ability to receive a score that accurately measures what the student has learned (via essay, except for statement 4) are both valued by the students.

While the first factor could be viewed as somewhat disappointing although certainly not surprising, the second factor is encouraging from an instructor's perspective. It is particularly encouraging to note that the inclusion of writing ability as a component of essay performance was not seen as a drawback of that format. It is unclear, however, whether that result is primarily due to the students having had experiences that suggest that most instructors do not pay particularly close attention to writing when grading or whether the students truly accept the idea that writing is an important skill in business and is therefore a reasonable thing to assess. It is curious that being able to guess on multiple-choice loaded positively on a fairness-related factor. Possibly the students agree with the Hassmen and Hunt (1994) contention that guessing is valid because it is generally based on at least partial knowledge of the relevant course content. These results also agree with Bridgeman's (2006) finding that although 81% of the students reported preferring multiple-choice, only 43% felt that multiple-choice was more valid. The fact that ease appears to be more important to the students than validity also supports O'Neill (2001), who studied multiple sections of the same course, some of which received multiple-choice exams and others essay exams, and found that the essay sections' students were the ones who complained about being treated badly.

The data for the two questions on preference as a function of preparedness were coded using 1 for students who preferred an exam made up entirely of multiple-choice, 2 for those who wanted a mix of multiple-choice and essay, and 3 for those who preferred entirely essay. The mean response was 1.74 under the hypothetical situation in which the student was well prepared for the upcoming exam and only 1.44 for the situation in which the student was poorly prepared. With both means less than 2.0, these results match those seen earlier in which the students in general preferred multiple-choice. However, the preference for multiple-choice diminished as the students became more prepared. A paired t test of the difference between the well prepared preference and the poorly prepared preference resulted in a t score of 3.829 and a significance level of less than .001, suggesting that the appeal of essays increases as preparedness does. In light of the results discussed above, this suggests that the fairness and validity attraction of essays may begin to overcome the easiness attraction of multiple-choice when the students have prepared sufficiently well to not fear the increased difficulty of essay questions.

Although the second section of the survey was focused on only the classes in which the respondents were registered (all of which were taught by the author) and thus asked questions geared specifically towards methods used in those classes, some of the results from that section are relevant to the discussion here. These classes all utilized a pedagogical approach in which the students were given a study guide in advance of the coverage of each chapter that pointed out the key concepts to learn for that chapter. Each study guide contained two sections, one with a list of terms and concepts to learn and another with several essay questions. The students were told to know and understand the definitions for each of the terms on the top half of the page and to recognize the key management issues related to each term. They were also told to be ready to fully answer every essay question as all of them were eligible to be selected for the exam. The essays were often broadly focused and required the students to contrast or integrate a variety of ideas, often including ideas from previous chapters. It was made very clear that complete, detailed and organized answers were required for the essays. The exams were a mix of multiple-choice and essay, with the one or two essay questions drawn word-for-word from the study guides and the multiple-choice designed such that students who had learned all of the terms from the study guides should be able to achieve a good score. The students were not able to use the text during the exams but were allowed to use their notes. They were also allowed to write out essay answers in advance of the test if they chose to do so and then simply hand in those answers if the questions they had answered turned out to be on the exam. The instructor's goal, as was explained to the class on the first day of the semester, was to provide students with a significant incentive to study carefully and take good notes, operating under the assumption that most students who did so would learn the material successfully (an assumption that end-of-semester instructor evaluation surveys have supported repeatedly).

This section of the survey was structured similarly to the first section, containing a series of statements followed by two questions concerning exam preference as a function of preparedness. Four of the statements referred to whether the respondent was "encouraged to study more diligently than I would have otherwise" as a result of, respectively, the study guides, the use of open notes exams, the presence of essays on the exams, and the requirement for the essays to be answered very completely in order to obtain a good score. Two other statements concerned whether being required to provide more complete essay answers than usual was made fair by the student's ability to see the questions in advance on the study guides and whether the student felt that the extra study effort put forth had actually resulted in greater learning. The students demonstrated highly significant agreement with these statements, with all of them achieving a level of

significance less than .001. Taken as a group, these statements suggest several things. First, students are prompted to study harder both by the presence of essays on an exam and by the fact that those essays will be rigorously graded. Second, students find it reasonable to include rigorously graded essays if the content of the questions can be viewed in advance to direct the students' study efforts. And third, students believe that their increased efforts led to greater learning than in the usual class.

These results support the literature discussed previously that demonstrated that prompting students to adopt deep-oriented study strategies would tend to encourage them to do so and that this increased adoption of deep-oriented strategies would tend to lead to an increased level of learning. Narrowing the focus to this paper's comparison of multiple-choice and essay questions, these results suggest that students are simply more fearful of essays and recognize that they need to put forth more effort to answer them effectively.

IMPLICATIONS FOR TEST CONSTRUCTION

The results of this study demonstrate that students tend to prefer multiple-choice and that their preference is driven largely by the belief that this type of question is easier, with the preference becoming even stronger when the students are poorly prepared for an exam. More encouragingly from a faculty perspective, the results also demonstrate that students appear to have an appreciation for the fairness and validity of essay questions as a measure of the success of their learning efforts and become more accepting of essays when well prepared for an exam. The results also support previous findings in the literature, for example Entwistle and Entwistle (1992), Scouller (1998), and Trigwell, Prosser and Waterhouse (1999), that suggest that instructor efforts to promote increased student utilization of deep learning strategies can be successful.

These results, in conjunction with previous work discussed earlier in the paper, prompt a variety of pedagogical recommendations for faculty who are being pressured by time or budget constraints to make greater use of multiple-choice questions. First, faculty should recognize that it is possible to test certain types of higher-order learning using the multiple-choice format and that a multiple-choice exam does not therefore have to be an assessment of only memorization and recall (Anderson et al., 2001; Suskie, 2004; Wainer and Thissen, 1993). Thus an increase in the use of multiple-choice questions does not necessarily lead to an inferior exam, although faculty should be aware when writing multiple-choice questions that there can be an unintentional bias toward writing questions focused on lower-level learning simply because those questions are so much easier to create (Roediger, 2005).

The results for statements 3, 4, 5 and 9 demonstrate that students believe multiple-choice questions to be easier. Thus a second recommendation is that faculty who attempt to develop higher-order multiple-choice questions must make it clear to students that these questions will call for deeper learning than is normally required by multiple-choice. Otherwise the use of multiple-choice may encourage the students to apply primarily surface-oriented study methods or to simply put less effort into studying (Gijbels, 2005; Scouller, 1998; Scouller & Prosser, 1994). They would therefore fail to achieve a level of learning sufficient to succeed on the unexpectedly difficult exam. It would be worthwhile to provide each class with example questions from previous semesters that could be utilized to demonstrate the difference between lower-order questions and those focused on higher-order learning in the context of the discipline of the course.

As an extension of the second recommendation, faculty should consider the possibility of broadening the discussion beyond simply test questions to consider higher- versus lower-order learning in general by

beginning each semester with a discussion of relevant pedagogical topics such as Bloom's Taxonomy and the utilization of deep learning strategies (Cassady, 2004; Hagedorn, Sagher & Siadat, 2000; Taylor & Hyde, 2000). Most undergraduates aren't exposed to these topics and therefore haven't received the guidance that would enable them to more fully develop their own study skills. Anderson et al. (2004) provide a good discussion of Bloom's Taxonomy.

A third and closely related recommendation is that faculty should emphasize the fact that exams including higher-order multiple-choice questions will more closely mimic an essay exam's ability to distinguish between students who have utilized surface strategies to memorize a list of isolated facts and those who have applied deep strategies to develop a more complete understanding of course content. Traditional lower-order multiple-choice questions often fail to reward the use of deep strategies because surface strategies are sufficient, i.e. the students who develop a deeper understanding don't benefit tangibly via higher test scores because that deeper understanding isn't required to answer the exam questions correctly. As was demonstrated by statement 10 in this study, students have an appreciation for the fairness and validity of essays due to their ability to reward those who have worked to achieve higher-order learning. Students need to be convinced that higher-order multiple-choice questions will similarly reward those who have achieved greater understanding.

The results from the second section of this study's survey suggest a fourth recommendation that it can be very beneficial for faculty to provide clear guidelines to students concerning the level of learning expected for each course topic. With years of experience taking traditional multiple-choice exams, in which most exam questions call primarily for memorization and recall, many students may conclude that all topics deserve approximately the same rather cursory study. With the addition of higher-order questions, however, it becomes necessary to let students know which topics are fully deserving of deeper study. Providing study guides, grading rubrics and old exams and assignments to demonstrate the level of understanding required can be an important motivator (Driessen & van der Leuten, 2000). By the way, it should be noted that in most courses there are indeed quite a few topics that really don't deserve more than cursory coverage and therefore probably shouldn't be tested via anything other than lower-order questions. Faculty must overcome the natural tendency to feel that every topic within their discipline is interesting and important in order to focus the students' deeper-oriented study efforts on the truly critical ideas.

A fifth recommendation is that faculty must allow students sufficient time both for the exam specifically and for studying and learning in general. The inclusion of higher-order multiple-choice questions will result in exams that require more reasoning time per question. If faculty write exams containing the same number of questions as before and provide the same amount of time as before, the students will be forced to approach the new higher-order questions with the same rather cursory approach that so many students have learned to utilize for multiple-choice from years of experience with lower-order questions. This situation will not only seem tremendously unfair to the students but may also lead many of them to conclude that there is little payoff from utilizing the deep study strategies that the faculty are hoping to foster. Although no faculty want to offer a class that will become known as easy, it is also important to make sure that students are given achievable learning goals and reasonable (though challenging) workloads. As noted by Taylor and Hyde (2000), students tend to gravitate toward surface strategies in order to quickly accumulate a list of test-ready facts when there isn't enough time to learn more deeply. Providing students with insufficient time to prepare for an exam or insufficient time to take an exam may sabotage faculty efforts to encourage the adoption of deep learning strategies.

A final particularly critical recommendation is that faculty should make certain to provide timely detailed feedback. One of the characteristics of students practicing deep learning strategies is a desire to monitor their own understanding and correct misconceptions as they occur (Chi, Bassok, Lewis, Reimann & Glaser, 1989; Minbashian et al., 2004). To facilitate this process, faculty will need to avoid the temptation to protect multiple-choice questions for repeat use in future semesters by preventing students from seeing anything more than just their exam scores. The inclusion of higher-order questions, which by definition involve more complex reasoning than would usually be seen in multiple-choice exams, makes this feedback even more critical. Faculty must hand back the exam and discuss such questions in detail so that students will fully understand the complex reasoning processes required. By carefully designing the incorrect answer options so that each incorrect answer would appear correct to students guilty of a common misconception or reasoning error, the exam can be used to diagnose these common mistakes. The incorrect answers then become a useful device to drive an enlightening discussion about those common misconceptions and reasoning errors, why they are incorrect, and how to correctly apply the ideas and skills of the discipline to find the right answer. In this way the students' incorrect answers can prompt valuable learning rather than becoming little more than uncorrected mistakes that the students may vaguely remember later as being correct (Roediger, 2005). Purdie, Hattie and Douglas (1996) investigated student utilization of a variety of learning strategies and found that the least-used of the various tactics was reviewing feedback. This suggests that students may view the score as the ultimate outcome of an exam, regardless of the type of questions used. It is important that faculty promoting deep learning strategies make the provision of meaningful informative feedback a key part of the learning process.

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A COMPARISON OF THE ACHIEVEMENT OF STUDENTS TAUGHT BY FULL-TIME VERSUS ADJUNCT FACULTY IN BUSINESS COURSES

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ABSTRACT

In recent years there has been a significant increase in the numbers of adjunct faculty teaching at the college level. As of 2005, almost half of four-year college teachers were part-time faculty members. The causes of this shift toward a part-time faculty are well known; however, the effect of this shift is only beginning to be examined. In this paper we test empirically whether students of adjunct faculty in beginning accounting courses are as well prepared for required upper-level business course work as students of full-time faculty members. We also address whether adjunct faculty contribute to grade inflation. We find that students taught by full-time faculty members in their accounting principles classes performed at a significantly higher level (than students taught by adjunct faculty) in their first finance course. We find some evidence consistent with adjunct faculty assigning higher grades to students than full-time faculty, thus contributing to grade inflation. We also find that students taught by adjunct faculty in their first accounting course were less likely to choose accounting as a major.

INTRODUCTION

Educators strive to understand how students learn from a number of perspectives. Faculty seek technology and nurturing environments to facilitate student achievement in course work which will support future learning and eventual career success. College administrators share these goals, reinforced by academic standards of accrediting bodies, but are fiscally constrained by limited budgets. The shortage of qualified business faculty, especially in accounting, has resulted in competition for scarce academic and professionally qualified faculty. Accounting salaries are soaring past the means of some schools to compete. One solution to the problems of faculty shortages and rising salaries has been to increase the number of part-time (adjunct) faculty.

The increase in the numbers of part-time faculty is not just occurring in business schools; it is happening across all academic fields. The U.S. Department of Education reports that the number of part-time faculty in degree-granting institutions has grown from 22% of instructional faculty in 1970 to 48% in 2005. Although some observers note that part-time faculty tend to be currently practicing professionals who enhance the classroom environment with their up-to-date, real-world examples and expertise, others ponder the possible drawbacks of this shift toward a part-time college faculty. Since adjunct instructors are typically less-experienced teachers not involved in scholarly research, faculty governance or student advisement, some educators speculate that the change in faculty characteristics is adversely affecting the academic environment

and students' educational experiences. In addition, it has been speculated that the job insecurity of non-tenure-track, part-time instructors could prompt them to reduce academic rigor and/or to ease student grades in order to protect student evaluations of their teaching which impact their employment opportunities.

In this study we address two issues related to adjunct faculty instruction in business courses. First, we address the issue of grading policies to determine if part-time faculty assign higher grades than full-time faculty. Second, we examine the achievement of students of adjunct faculty in higher level course work to see if students taught by adjunct faculty are receiving the same quality of instruction as students of full-time faculty members.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

The increase in the numbers of adjunct faculty has not gone unnoticed in the academic literature or in the popular press. Much has been written addressing the influx of part-time instructors, but there have been few published empirical papers which have looked at the effects of adjunct teaching. Van Ness, Van Ness and Kamery (1999) analyzed the effect of adjunct instruction on grades assigned in the first principles of finance class. They found that students in classes taught by adjunct faculty received significantly higher grades than students taught by full-time faculty. Kezim, Pariseau and Quinn (2005) similarly found that average grades given by adjunct faculty were higher than those assigned by full-time faculty. Leverett, Zurita and Kamery (2005) also found this same result as did Bonner (2000).

In this paper, we compare grades assigned by adjunct faculty versus full-time faculty in introductory accounting classes and in the first course in finance. Secondly, we extend this line of research to look at the impact of adjunct instruction on student learning. In this paper, we examine the achievement of students in introductory accounting classes taught by adjunct faculty versus the achievement of students taught by full-time faculty by comparing grades earned by these students subsequently in intermediate accounting classes and in corporate finance classes. We have not found any previously published empirical work addressing the effects of adjunct teaching on achievement in subsequent course work.

Building on results of prior research, we first address the issue of grading differences of adjunct faculty versus full-time faculty in three college business courses: Principles of Accounting I, Principles of Accounting II and Corporate Finance. The null hypothesis in each of the three tests is:

H1: Final grades assigned by adjunct faculty do not differ significantly from grades assigned by full-time faculty teaching the same course

We are concerned also with the quality of adjunct teaching versus full-time faculty teaching. We address this issue by looking at the achievement of students who have had an adjunct instructor in at least one principles of accounting class on their subsequent achievement in two upper level business courses for which the principles of accounting courses are prerequisites: Corporate Finance and Intermediate Accounting. Though utilizing the same prerequisites, these courses differ in an important way. Corporate Finance is the first course in finance taken by our students, and it is required of all students in the School of Business. Intermediate Accounting is typically only taken by accounting majors. The null in each of our two tests on subsequent achievement is:

H2 *Achievement of introductory accounting students taught by adjunct instructors does not differ from achievement of introductory accounting students taught by full-time instructors in higher-level business courses*

TESTS AND RESULTS

Hypothesis 1

Our study includes data on 2,597 students completing a course in Corporate Finance at our School of Business between the years 1992 and 1998. Our school enrolls approximately 1,000 full-time business students as part of a four-year, 8,000-student state college campus. Corporate Finance is the first finance course taken by business students, and it is required of all students in the School of Business. The Corporate Finance classes were taught during this time frame by five full-time business faculty members (2,367 students) and three adjunct business faculty (230 students). Among the required courses students must take before enrolling in the finance class are two principles of accounting courses. Since many of our students are transfer students who have taken introductory accounting courses at other schools, tests involving grading tendencies in principles of accounting courses have fewer observations. Of the 2,597 students completing corporate finance classes, 1,100 took the first introductory accounting class at our school and 1,264 took the second introductory accounting course at our school. Data on accounting grades earned by students taking accounting courses at other institutions was not available for this study. Table 1 describes our sample and the number of observations available for the tests of hypotheses 1 and 2.

In our tests of Hypothesis 1, we used nonparametric, two-sample, two-tailed tests of the difference between final grades assigned by full-time business faculty versus part-time business faculty in the two introductory accounting courses and in the first finance course. (During the time of our study, no adjuncts taught Intermediate Accounting, so this course could not be used to test Hypothesis 1.) Results are shown in Table 2, Panels A, B and C. Panels A and B show the results of tests of differences in semester grade assignments for the two, sequential, introductory accounting courses required of all students in the school of business. Results are mixed with regard to the accounting classes. In Panel A no significant difference was found between final grades assigned in the first accounting course, but in Panel B a significant difference (though weak) was found in the second principles of accounting course between grades assigned by part-time and full-time faculty members.

In Table 2, Panel C, we display the results of the test of grading differences in the corporate finance classes and find a highly significant difference in grades between part-time and full-time faculty. The test in Panel C shows strong support to reject H1 on the basis of 2,597 observations. The mean grade assigned by part-time faculty was 2.595 versus the mean grade assigned by full-time faculty (which was 2.366). The two-tail Mann-Whitney test supports the conclusion that these samples are significantly different at the 1% level. It appears that adjunct faculty assign significantly different grades than full-time faculty in the first finance course.

To summarize, our tests of the first hypothesis are mixed. Two of the three tests supported the conclusion that adjunct business faculty assign higher grades than full-time faculty.

Table 1: Data	
Number of students enrolled for the first time in the first required finance course from 1992 –1998 = the number of observations in the first test of H1: **Table 2, Panel A: Grades Assigned in the First Finance Course by Adjunct Faculty vs. Full-time Faculty**	**2,597**
Less: number of students taking the second prerequisite accounting course elsewhere	-1,333
= number of observations in second test of H1: **Table 2, Panel B: Grades Assigned in the 2nd Accounting Course by Adjunct Faculty vs. Full-time Faculty** = number of observations in second test of H2: **Table 3, Panel B: Student Achievement in the First Finance Course and Status of Faculty Teaching the 2nd Accounting Course**	**1,264**
Less: number of students who took the 2nd accounting course at our school but who took the 1st accounting course elsewhere	-164
= number of observations in third test of H1: **Table 2, Panel C: Grades Assigned in the 1st Accounting Course by Adjunct Faculty vs. Full-time Faculty** = number of observations in first test of H2: **Table 3, Panel A: Student Achievement in the First Finance Course and Status of Faculty Teaching the 1st Accounting Course**	**1,100**

Table 2: Tests of Hypothesis I

Panel A:

Comparison of two samples (Mann-Whitney) : Grades assigned by adjunct business faculty versus grades assigned by full-time business faculty in the first accounting course

Variable	# Observations	Mean Grade	Std deviation
Adjunct grades	158	2.608	.984
Full-time faculty grades	942	2.674	.911
n=1,100			

p-value (two-tailed) = 0.314: alpha = 0.10 (not significant)
Test interpretation: The null hypothesis that the difference between grades assigned by adjunct faculty and full-time faculty is not significantly different from zero cannot be rejected.

Panel B:

Table 2: Tests of Hypothesis I			
Comparison of two samples (Mann-Whitney): Grades assigned by adjunct business faculty versus grades assigned by full-time business faculty in the second accounting course			
Variable	# Observations	Mean Grade	Std deviation
Adjunct grades	154	2.710	.832
Full-time faculty grades	1110	2.586	.894
n= 1,264			
p-value (two-tailed) = 0.085: alpha = 0.10 * Test interpretation: The null hypothesis that the difference between grades assigned by adjunct faculty and full-time faculty is not significantly different from zero should be rejected at the 10% level of significance. *As the computed p-value is lower than the significance level alpha=0.1, one should reject the null hypothesis H0, and accept the alternative hypothesis that there is a difference between adjunct faculty and full-time faculty in assigning grades in the first finance course. The risk to reject the null hypothesis H0 while it is true is lower than 8.48%.			
Panel C:			
Comparison of two samples (Mann-Whitney): Grades assigned by adjunct business faculty versus grades assigned by full-time business faculty in the first course in finance			
Variable	# Observations	Mean Grade	Std deviation
Adjunct grades	230	2.595	1.086
Full-time faculty grades	2367	2.366	1.037
n= 2,597			
p-value (two-tailed) = 0.002: alpha = 0.01 *** Test interpretation: The null hypothesis that the difference between grades assigned by adjunct faculty and full-time faculty is not significantly different from zero should be rejected. ***As the computed p-value is lower than the significance level alpha=0.01, one should reject the null hypothesis, and accept the alternative hypothesis that there is a difference between adjunct faculty and full-time faculty in assigning grades in the first finance course. The risk to reject the null hypothesis while it is true is lower than 0.15%.			

Hypothesis 2

In our second set of tests, we look to the quality of adjunct teaching versus full-time faculty teaching by examining the achievement of students in upper level courses who have experienced adjunct teaching in at least one of the two required accounting courses. The two upper level courses we consider are the corporate finance course (the first finance course) and the first intermediate accounting course. These courses are normally taken in the junior year of study.

Semester grades earned by all 2,597 corporate finance students were ranked within each of their class sections. Those who took at least one introductory accounting course at our school were included in these tests. We used class ranks in the corporate finance class rather than the average class grade in order to allow for the different grading schemes of the various faculty (such as the differences in grading found in tests of

hypothesis 1). Each student's rank within his/her finance class section was classified as "top third," "middle third," and "bottom third" of his/her class section. Observations were also classified according to whether or not the student had an adjunct instructor for at least one of the required accounting principles courses. Results of chi-square tests of independence of corporate finance class rank and status of the faculty teaching the prior accounting courses are shown in Table 3. Panel A shows the test of achievement in the finance course of students who had an adjunct instructor for the first principles of accounting class. Panel B displays the test of achievement in the finance course of students who had an adjunct instructor for the second principles of accounting class. Using a chi square test of independence, both panels A and B show that students who had an adjunct instructor for at least one principles of accounting class tended to rank lower in subsequent performance in their finance courses than students of full-time faculty. Both of these tests strongly suggest that there is a relationship between student performance in the corporate finance class and the status of the instructor in a prerequisite accounting course.

Table 3: Tests of Hypothesis 2

Panel A:

Chi-square test of independence of class rank in corporate finance class and status of faculty teaching the first principles of accounting course.

	# Observations of adjunct instructor in 1st accounting course	# Observations of full-time faculty instructor in 1st accounting course
Achievement in *top third* of corporate finance class	52	341
Achievement *in middle third* of corporate finance class	44	329
Achievement in *bottom third* of corporate finance class	62	272
n= 1,100		

Chi-Square = 7.196: p-value = 0.027: alpha = 0.05 **

Each student's finance class grade was ranked among all students in his/her class section regardless of where the principles of accounting course was taken. The 1,100 observations in the test of independence were those students who had taken the first prerequisite accounting course at our school.

Test interpretation: There is a relationship between a student's class rank in corporate finance and faculty status in the student's first principles of accounting course.

**As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis and accept the alternative hypothesis that there is a difference between results of adjunct faculty and full-time faculty teaching accounting principles and subsequent student achievement in the first finance course.

The risk to reject the null hypothesis while it is true is lower than 2.74%.

Table 3: Tests of Hypothesis 2

Panel B:

Chi-square test of independence of class rank in corporate finance class and status of faculty teaching the second principles of accounting course.

	# Observations of adjunct instructor in 2nd accounting course	# Observations of full-time faculty instructor in 2nd accounting course
Achievement in *top third* of corporate finance class	57	384
Achievement *in middle third* of corporate finance class	39	392
Achievement in *bottom third* of corporate finance class	59	333
n= 1,264		

Chi-Square = 7.151: p-value = 0.028: alpha = 0.05 **

Each student's finance class grade was ranked among all students in his/her class section regardless of where the principles of accounting course was taken. The 1,264 observations in the test of independence were those students who had taken the second prerequisite accounting course at our school.

Test interpretation: There is a relationship between a student's class rank in corporate finance and faculty status in the student's second principles of accounting course.

**As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis and accept the alternative hypothesis that there is a difference between results of adjunct faculty and full-time faculty teaching accounting principles and subsequent student achievement in the first finance course.

The risk to reject the null hypothesis while it is true is lower than 2.80%.

After finding strong results that student performance in the first finance course is related to faculty status in principles of accounting, we ran similar nonparametric tests on student performance in the first intermediate accounting course. Surprisingly, results showed no significant difference in achievement of students in intermediate accounting related to faculty status in the principles of accounting course. Because of the strong result in the finance tests, we considered reasons why we did not find a similar relationship in intermediate accounting.

We believe that the tests on performance in intermediate accounting were impacted by the very small number of students in intermediate accounting who had adjunct instructors in their principles of accounting courses. Of the 1,100 students who took the first principles of accounting course at our school, only 321 enrolled in intermediate accounting. Only 30 of these had adjunct instructors in the first principles of accounting course. We suspect that the small number of observations impacted our results. It may also be the case that faculty status in principles of accounting affects the number of students enrolling in upper level accounting course work. If the overall academic experience of a student varies by whether his/her instructor is a part-time or full-time faculty member, then it may be that this affects the student's choice of major. Thus, we examine our third issue with hypothesis 3 (stated in the null form):

H3: A student's choice of accounting as a major is not influenced by faculty status in the principles of accounting course

To test whether faculty status affected student's choice of being an accounting major, we calculated the percentage of students in each Accounting Principles I class section who chose to subsequently enroll in Intermediate Accounting I . Since intermediate accounting course work is not required in any other major, virtually all students enrolling in Intermediate Accounting I are accounting majors. The choice of whether to enroll in intermediate accounting is typically made by students about half-way through their Accounting Principles II class, before their achievement in the second accounting class is known. Hence we believe there is a more likely relationship between the first accounting class experience and choice of major than the second accounting course.

There were 35 separate sections of the first accounting principles class in our timeframe. Twenty-eight sections were taught by full-time faculty and 7 were taught by adjunct faculty. We conducted a nonparametric, two-sample, two-tailed test of the difference in the percentage of students in adjunct-taught-principles classes vs. full-time-faculty-taught principles classes who enrolled in the first intermediate accounting class. We found a statistically significant (at the 5% level) difference between adjunct-taught sections and full-time-faculty-taught sections with respect to their student's subsequent choice of majors. Results are displayed in Table 4. Students who had a full-time faculty instructor in the first principles of accounting class enrolled more often in intermediate accounting classes, and thus chose to major in accounting, as compared to those students who had an adjunct instructor for the first accounting class.

We find the results of this test interesting, but we acknowledge the possibility of alternative reasons for the results. Students who plan to major in accounting may purposely choose to take their principles of accounting classes from full-time instructors. Also, since most of our adjunct instructors teach in the evening, it is possible that accounting majors selected day classes for courses in their major field.

SUMMARY

In recent years there has been a significant increase in the numbers of adjunct faculty teaching at the college level. As of 2005, almost half of four-year college teachers were part-time faculty members. The causes of this shift toward a part-time faculty are well known; however, the effect of this shift is only beginning to be examined. In this paper we test empirically whether students of adjunct faculty in beginning accounting courses are as well prepared for required upper-level business course work as students of full-time faculty members. We also address whether adjunct faculty contribute to grade inflation. We find that students taught by full-time faculty members in their accounting principles classes performed at a significantly higher level (than students taught by adjunct faculty) in their first finance course. We find some evidence consistent with adjunct faculty assigning higher grades to students than full-time faculty, thus contributing to grade inflation. We also conclude that students taught by adjunct faculty in their first accounting course were less likely to choose accounting as a major.

Table 4: Test of Hypothesis 3:

Comparison of two samples (Mann-Whitney): Percentage of students in accounting principles classes enrolling in intermediate accounting who took their first principles course with adjunct faculty vs. those who took their first principles course with a full-time faculty instructor

Variable	# Class Sections	Mean of the introductory class sections' percentages of students choosing to enroll in Intermediate Accounting	Std deviation
Full-time faculty teaching the first accounting principles course	28	0.201	0.115
Adjunct faculty teaching the first accounting principles course	7	0.115	0.060
n = 35 class sections			

p-value (two-tailed) = 0.036: alpha = 0.05 **
Test interpretation: The null hypothesis that the percentage of students in the first principles of accounting class sections choosing accounting as a major (as proxied by enrollment in Intermediate Accounting) does not differ by faculty status should be rejected.
**As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis and accept the alternative hypothesis that there is a difference between adjunct faculty and full-time faculty in whether or not their students choose accounting as a major.
The risk to reject the null hypothesis H0 while it is true is lower than 3.61%.

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DIFFERENTIAL EFFECTS OF STUDENT CHARACTERISTICS ON PERFORMANCE: ONLINE VIS-À-VIS OFFLINE ACCOUNTING COURSES

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ABSTRACT

The purpose of this study is to examine if there exist any systematic differences in the effects of student characteristics on student performances as measured by test scores between online courses and offline courses. Student characteristics variables include grade point average (GPA), age, commuting distance, working hours, gender and marital status. Academic and demographic data of 91 students who took undergraduate accounting courses offered through online as well as offline at California State University-San Bernardino during a three-year period extending from fall 2003 to spring 2005 are examined using univariate analyses as well as regression models. Overall, empirical results suggest that while there is no significant difference in student performances, some characteristics variables have differential effects on performances between online and offline learners. Specifically, the effects of GPA and gender on performances are significantly higher for offline students than for online students. These results are robust across different testing methodologies.

INTRODUCTION

A considerable body of research on distance learning suggests that there is no significant difference in achievement levels between online learners and offline learners (E.G., The Institute for Higher Education Policy (1999), Chamberlin (2001) and Yin et. al. (2002)). However, online learners and offline learners may perform differently due to differences in student perception, available learning tools, use of the learning tools, and other technical issues. (See Barker (2002), Beard et. al. (2002), Dunbar (2004), Kendall (2001), Lightner et. al. (2001), Perreault et. al. (2002), Schulman et. al. (1999), Schwartzman et. al. (2002), and Woods (2002)) Furthermore, many previous studies suggest that student performances can be affected by student characteristics such as gender, age, educational experience, and motivation. (E.G., Sullivan (2001), Younger (1999)) Thus, the purpose of this study is to examine whether there exist any systematic differences in the effects of student characteristics on student performances as measured by test scores between online courses and offline courses.

The remainder of the paper is organized as follows: first, sample data descriptions are discussed the next section, which is followed by discussions on data analyses and their results. Concluding remarks are made in the final section.

SAMPLE DESCRIPTIONS

Sample data are collected from students who took undergraduate accounting courses offered through online as well as offline at California State University-San Bernardino during the three years from fall 2003 to spring 2005. Both online and offline classes were taught by the same instructor who used Blackboard as a web-based learning assistance tool. The same textbook was used and the same lecture notes for each chapter developed by the instructor were provided to students in both classes. Exams for on line and off line classes are developed by the instructor in such a way that exams for on line classes are equivalent to those for off line classes. All exams were proctored and graded by the same instructor.

Table 1: Descriptive Statistics for Student Characteristics Variables

Variables	Online sample (N=54)			Offline sample (N=37)			Wilcoxon z-statistics (p-value)
	Mean	Std. Dev	Median	Mean	Std Dev	Median	
Score	70.009	12.944	72.250	74.784	12.937	77.500	1.592 (0.111)
GPA	3.106	0.539	3.249	3.195	0.425	3.244	0.388 (0.698)
Age	30.204	8.381	27.000	26.622	6.958	25.000	2.203 (0.028)**
Distance	45.685	29.740	38.500	17.784	13.105	20.000	4.624 (0.001)***
Hour	32.963	14.193	40.000	22.703	15.028	25.000	3.366 (0.001)***
Gender	Female: 40 (74.07%)			Female: 22 (59.46%)			2.160 (0.142)
Marital	Married: 21 (38.89%)			Married: 13 (35.14%)			0.132 (0.716)

1) Score = final test scores, including midterm test results.
GPA = the student's previous grade point average.
Age = age of the student.
Distance =distance from student's residence to the campus (miles).
Hour = working hours per week.
Gender = female (1) and male (0).
Marital = marital status; married (1) and single (0).
2) For the variables Gender and Marital, tests on differences in frequencies between online and offline samples are based on chi-square statistics.
***: Significant at a<0.01; **: significant at a<0.05; *: significant at a<0.10

Student performance data such as test scores and GPA are collected from the course instructor or the university database, while student demographic data such as gender, age, commuting distance and working hours are from survey questionnaires to the student sample. After deleting students with insufficient data, the final data of 91 students (54 online learners and 37 offline learners) are analyzed in this study.

The descriptive statistics for the characteristics variables are presented in Table 1. There are no significant differences in gender compositions, marital status, GPA, and performance (test scores) between on line learners and their matching off line learners. On the other hand, significant differences exist in age, commuting distance, and working hours between on line learners and off line learners. As expected, students taking online courses are older, commute longer distance and work more hours than those taking offline courses.

Table 2 shows the correlations among student characteristics. Online sample exhibits significant positive correlation between commuting distance and working hours. For offline sample, distance has significantly positive correlations with marital status as well as working hours, which is also positively correlated with marital status.

Table 2: Correlations Among Student Characteristics Variables

Panel A: Online Sample						
	GPA	Age	Distance	Hour	Gender	Marital
GPA	1.000	0.098	0.200	0.032	-0.162	-0.174
Age		1.000	-0.028	-0.082	0.045	0.053
Distance			1.000	0.264*	-0.062	0.018
Hour				1.000	0.035	-0.060
Gender					1.000	0.039
Marital						1.000
Panel B: Offline Sample						
	GPA	Age	Distance	Hour	Gender	Marital
GPA	1.000	0.133	-0.231	-0.107	0.026	-0.218
Age		1.000	-0.059	0.090	-0.270	-0.166
Distance			1.000	0.493***	0.033	0.459***
Hour				1.000	0.095	0.343**
Gender					1.000	0.146
Marital						1.000

1) GPA = the student's previous grade point average.
Age = age of the student.
Distance = distance from student's residence to the campus (miles).
Hour = working hours per week.
Gender = 1 if female; 0 if male.
Marital = 1 if married; 0 if single.
2) Pearson correlations are reported.
***: Significant at a<0.01; **: significant at a<0.05; *: significant at a<0.10

ANALYSIS AND RESULTS

Univariate Analyses: Mean Difference Comparisons

In order to conduct unvariate comparison analyses, all sample students are divided into two subgroups for each characteristics variable: i.e., Low GPA and High GPA. For each sample (online or offline), students with higher GPA than the sample median GPA belong to High GPA group, while students with lower GPA than the sample median GPA to Low GPA group. Same procedure was applied to other variables. The potential effects of student characteristics on performances were then examined by comparing test scores between these two groups.

Table 3 presents the results of comparing performances between two subgroups and corresponding Wilcoxon z-statistics for both online sample and offline sample. GPA is the only factor affecting performance for both online and offline students. For example, online (offline) students with high GPA have average test score of 75.9 (80.5), while those with low GPA show 67.5 (68.6). These differences (about 10 points) are statistically significant (a<0.05). Other than GPA, gender has significant impact on performance for offline sample. Specifically, male students are doing better than female students (80.5 versus 70.9).

Table 3: Effects of Student Characteristics on Performance

Univariate Analyses

Variables/ Group	Online sample (n=54)		Offline sample (n=37)	
	Mean SCORE	Wilcoxon z-stat (p-value)	Mean SCORE	Wilcoxon z-stat (p-value)
GPA:				
High	75.922	2.103 (0.035)**	80.579	2.766 (0.006)***
Low	67.520		68.667	
Age:				
Old	69.250	0.087 (0.931)	76.950	0.991 (0.321)
Young	70.769		72.235	
Distance:				
Far	69.422	0.564 (0.573)	74.434	0.000 (1.000)
Near	70.864		75.153	
Hour:				
Long	70.905	0.643 (0.520)	74.039	0.152 (0.879)
Short	68.059		75.569	
Gender:				
Female	69.238	0.849 (0.396)	70.898	1.980 (0.048)**
Male	72.214		80.483	
Marital:				
Married	69.821	0.036 (0.972)	74.019	0.493 (0.622)
Single	70.129		75.198	

1) For each variable, sample was classified into two groups based on median value of the variable. For example, High if GPA>=median; Low if GPA<median.

** Significant at a<0.01; ** significant at a<0.05; * significant at a<0.10

Regression Analyses

Results from univariate analyses in preceding section show that GPA is a factor affecting performances for both online learners and offline learners, while gender is a factor for offline learners. As an attempt to investigate if these results hold after controlling for other student characteristics, we estimate the following regression model:

$$\text{Score} = \alpha_0 + \alpha_1 \text{GPA} + \alpha_2 \text{Age} + \alpha_3 \text{Distance} + \alpha_4 \text{Hour} + \alpha_5 \text{Gender} + \alpha_6 \text{Marital} + \epsilon \quad (1)$$

Where,

Scores = final test scores, including midterm test results,
GPA = grade point average,
Age= age of the student,
Distance = the distance from a student's residence to the campus (miles),
Hour = the number of working hours per week,
Gender= 1 if female; 0 if male.
Marital= marital status, 1 if married; 0 if single.
α_i = the partial regression coefficients of variable 'i',
ϵ = the error term.

The significantly positive correlation between Distance and Hour (see Table 2) may cause the multicolinearity problem. To avoid this potential problem, we estimate the regression model (1) without Hours (Model 2) or Distance (Model 3) along with the full model (Model 1). Results from estimating the regression model (1) are presented in Table 4. The regression coefficients of GPA are all positive and statistically significant ($a<0.01$) across different models for both online and offline samples. This result indicates that GPA is a factor affecting student performances. The coefficient estimates for Gender are consistently negative, indicating that male students perform better than female students. However, this gender difference is significant ($a<0.01$) only for offline sample. Overall, these results suggest that GPA is a factor affecting performances for both online learners and offline learners, while gender is a factor for offline learners even after controlling for other characteristics variables.

Table 4: Effects of Student Characteristics on Performance

Regression Analyses

$\text{Score} = \alpha_0 + \alpha_1 \text{GPA} + \alpha_2 \text{Age} + \alpha_3 \text{Distance} + \alpha_4 \text{Hour} + \alpha_5 \text{Gender} + \alpha_6 \text{Marital} + \epsilon$

	Online sample (n=54)			Offline sample (n=37)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	20.058 (1.80)*	23.348 (2.21)**	20.242 (1.82)*	11.461 (0.79)	11.418 (0.80)	12.212 (0.88)
GPA	15.517 (5.40)***	15.467 (5.39)***	14.896 (5.29)***	18.146 (4.61)***	18.141 (4.65)***	18.022 (4.70)***

Table 4: Effects of Student Characteristics on Performance						
Regression Analyses						
Score= $\alpha_0 + \alpha_1$ GPA $+\alpha_2$ Age $+ \alpha_3$ Distance $+ \alpha_4$ Hour $+ \alpha_5$ Gender $+ \alpha_6$ Marital $+ \epsilon$						
	Online sample (n=54)			Offline sample (n=37)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Age	0.002 (0.01)	-0.011 (0.06)	0.008 (0.04)	0.387 (1.57)	0.355 (1.47)	0.384 (1.58)
Distance	-0.056 (1.07)	-0.043 (0.85)		0.034 (0.23)	-0.008 (0.06)	
Hours	0.104 (0.96)		0.073 (0.70)	-0.087 (0.69)		-0.076 (0.67)
Gender	-0.394 (0.12)	-0.214 (0.06)	-0.242 (0.07)	-9.024 (2.66)**	-9.295 (2.78)***	-9.075 (2.72)**
Marital	2.904 (0.96)	2.706 (0.89)	2.662 (0.88)	5.082 (1.31)	4.646 (1.23)	5.365 (1.49)
Adj. R2(%)	32.24	32.33	32.02	44.92	45.85	46.60
1) Estimates and t-statistics (parenthesis) from the regression are shown. *** Significant at a<0.01; **: significant at a<0.05; *: significant at a<0.10						

Given the significant effects of GPA and Gender on performances, we employed the following regression model to examine whether there exist systematic differences in these effects between online and offline students:

$$\text{Scores} = \alpha_0 + \alpha_1 \text{ GPA} + \alpha_2 \text{ Gender} + \alpha_3 \text{ Maturity} + \alpha_4 \text{ GPA*On-Off} + \alpha_5 \text{ Gender*On-Off} + \alpha_6 \text{ Maturity*On-Off} + \epsilon \quad (2)$$

Where,

Scores = final test scores, including midterm test results,
GPA = grade point average,
Gender= 1 if female; 0 if male.
Maturity= metric to measure the level of student's maturity,
On-Off=1 if the student is offline learner; 0 if online learner.
α_i = the partial regression coefficients of variable 'i',
ϵ = the error term.

We construct and include a new variable Maturity in lieu of the variables such as Age, Distance, Hour, and Marital. The reasons for this are as follows: First, these variables may represent the common characteristics, i.e., the maturity. Second, although each of theses variables does not affect the performance, they may collectively have significant effect. Finally, we can estimate parsimonious model by including less variables while maintaining essentially the same range of student characteristics variables. To obtain this

metric, sample was first classified into two subgroups based on Age, Distance (or Hour) and Marital variable, respectively. Next, each student was assigned 1 if older (Age), farther/longer (Distance/Hour), or married (Marital), and 0 if otherwise. Finally, assigned values of three variables were added up to get the measure of Maturity. Hence, the value of Maturity has the range between 0(least mature) and 3(most mature).

We estimate the regression model (2) separately for online sample and offline sample, as well as for the total sample. Table 5 shows the estimation results. First, regression coefficients of GPA are positive and statistically significant (a<0.01) for both online and offline samples. However, the coefficient for offline sample (19.414) is larger than that for online sample (14.747). This difference can be seen in the positive value of the regression coefficient (GPA*On-Off). More importantly, the coefficient is statistically significant (a<0.01), indicating that GPA has more effect on performance for offline students than for online students. Second, regression coefficients of Gender are negative but statistically significant (a<0.01) only for offline sample. Furthermore, the coefficient for offline sample (-10.177) is smaller than that for online sample (-0.314), and this difference is statistically significant (a<0.01) as shown in the coefficient (Gender*On-Off). This result indicates that male students perform better in offline courses than in online courses. Third, regression coefficients of Maturity are positive but statistically insignificant for both online and offline samples. While offline sample has larger coefficient (5.037) than online counterpart (1.455), this difference is not significant.

Overall, these results suggest that GPA and gender have significant effects on student performances, and theses effects are larger for offline students than for online students.

Table 5: Differential Effects of Student Characteristics on Performance

Online vis-à-vis Offline

Scores = $\alpha_0 + \alpha_1$ GPA $+\alpha_2$ Gender + α_3 Maturity + α_4 GPA*On-Off + α_5 Gender*On-Off + α_6 Maturity*On-Off + ϵ

	Online	Offline	Total
Intercept	23.731 (2.48)**	16.365 (1.27)	21.482 (2.82)***
GPA	14.747 (5.36)***	19.414 (5.08)***	15.361 (6.88)***
Gender	-0.314 (0.09)	-10.177 (3.23)***	-0.025 (0.01)
Maturity	1.455 (0.50)	5.037 (1.57)	1.618 (0.58)
GPA*On-Off			2.571 (2.10)**
Gender*On-Off			-10.286(2.26)**
Maturity*On-Off			2.954 (0.70)
Adj. R2 (%)	33.42	47.21	40.79

1) Maturity= metric to measure the level of student's maturity. To obtain this metric, sample was first classified into two groups based on Age, Distance (or Hour) and Marital variable, respectively. Next, Each student was assigned 1 if older (Age),farther (Distance), or married (Marital); 0 if otherwise. Finally, assigned valuesof three variables were added up to get the measure of Maturity. Hence, the valueof Maturity has the range between 0(least mature) and 3(most mature).
On-Off=1 if the student is offline learner; 0 if online learner.

2) Estimates and t-statistics (parenthesis) from the regression are shown.
***: Significant at a<0.01; ** significant at a<0.05; * significant at a<0.10

CONCLUSIONS

The purposes of this study are twofold. The first is to examine the potential effects of student characteristics on performances as measured by test scores. Second purpose is to investigate if there is any systematic difference in those effects between online courses and offline courses. Academic and demographic data of 91 students who took undergraduate accounting courses offered through online as well as offline at California State University-San Bernardino during a three-year period extending from fall 2003 to spring 2005 are examined using univariate analyses as well as regression models.

The empirical results can be summarized as follows: First, There is no significant difference in student performances (test scores) between online learners and offline learners. Second, while no significant differences exist in gender compositions, marital status, and GPA, students taking online courses are older, commute longer distance and work more hours than those taking offline courses. Third, GPA is a factor affecting performances for both online learners and offline learners, while gender is a factor for offline learners even after controlling for other characteristics variables. Finally, the effects of GPA and gender variables on performances are larger for offline students than for online students. These results are robust across different testing methodologies.

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ACADEMIC PUBLISHING AND TEACHING EFFECTIVENESS: AN ATTITUDINAL STUDY OF AACSB ACCREDITED BUSINESS SCHOOL FACULTY

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ABSTRACT

The purpose of this study was to understand faculty attitudes toward research and publishing and its role in and contributions to teaching effectiveness and student learning at non-doctoral granting AACSB-accredited business schools. A questionnaire was developed to assess faculty attitudes toward the research, teaching and the impact of research directly on teaching. The survey was sent to a random sample of business faculty at comprehensive AACSB accredited business schools. The results showed conflicting perspectives. While faculty perceived teaching and research to be mutually supportive and believed that their research activities made them better teachers, they also noted that they would spend less time in scholarly publication pursuits if it did not have such a strong impact on their job security. Faculty also acknowledged that securing a publication is often more important than providing a contribution to the advancement of business knowledge. Thus, while faculty say that research enhances the teaching and learning experience of students, they did not clearly demonstrate how they actually make this happen.

INTRODUCTION

Historically the role of publishing in the academy has been to provide a venue for academic discourse and the dissemination of newly created knowledge, a role that is as valid today as it was fifty or one hundred years ago. There is, however, a new paradigm emerging in business schools that is changing what should be the legitimate purpose and contribution of academic research. This shift is especially evident in schools which are currently accredited by the Association to Advance Collegiate Schools of Business (AACSB) and in the process of seeking reaccreditation as well as candidacy schools seeking initial accreditation.

The new standards adopted by AACSB in 2003, specifically AACSB Standards 10 and 2 (AACSB, 2003), which address defining faculty as academically qualified (AQ) and professionally qualified (PQ), have caused academic publishing to become even more highly prioritized. Under the new standards the most important component for business faculty achieving and/or maintaining AQ status is *the number of* refereed journal publications. Although not specifically stated in the new AACSB standards, it is widely understood that the minimum requirements for a faculty member to maintain AQ status is that they have, at a minimum, two refereed journal publications within a five year period (Miles, Hazeldine & Munilla, 2004).

The new standards have caused candidacy schools, seeking initial AACSB accreditation, and those in the reaccreditation process to require a higher percentage of their faculty to actively engage in research, and, more specifically, publish their research in peer reviewed journals. This increased emphasis on quantity

of publications has the potential to shift the focus of research, to a degree greater than it has been, from what should be its primary contribution, the dissemination of new knowledge, to a focus on publishing purely for the sake of publishing.

AN INCREASING EMPHASIS ON PUBLICATIONS

Business schools at doctoral granting institutions have always placed a priority on their faculty publishing in high quality, peer reviewed academic journals. Business schools at balanced, non-doctoral schools have, in the past, focused primarily on teaching, with a balanced emphasis on research and service. But, today's business school faculties, even in balanced non-doctoral schools, are under greater pressure to produce publishable research in order to maintain their academic qualifications. This increasing emphasis on research and, particularly, research resulting in publications (Pettijohn, Udell & Parker, 1991), has been the focus of much discussion among business academicians.

In Boyer's (1990) famous work *Scholarship Revisited: Priorities of the Professorship,* results were reported from a national 1989 Carnegie Foundation study that 45% of business faculty believed the number of publications is the primary indicator of research productivity. Additionally, Boyer cited that 45% of business faculty did not perceive that the quality of the journal was an important criterion for tenure. Since the time of this study it appears that an even greater emphasis has been placed on published research, especially for institutions who wish to obtain or maintain their accreditation through AACSB. In a study of finance faculty, Bures and Tong (1993) reported that the primary factor influencing performance evaluations was the number of journal articles published. Arlinghaus (2002) reported in a study of AACSB accounting programs that the number of publications expected has increased at the majority of institutions. Udell, Parker and Pettijohn (1995) noted that "discussions of the validity and desire for AACSB accreditation generally become discussions of the seeming dichotomies of teaching and research" (p. 108). These authors found a difference between faculty in AACSB accredited and non-accredited institutions. Not surprisingly, faculty in AACSB accredited institutions published significantly more journal articles than their counterparts at non-accredited schools. This coincides with the earlier finding of Ethie and Karanthanos (1994) that accredited schools value intellectual contributions as more important and teaching contributions as less important than schools without accreditation.

More recently, Roberts, Johnson and Groesbeck (2006) examined the attitudes of new faculty hired at schools who were recently accredited by AACSB. Their study found that newly hired faculty at AACSB accredited institutions value research more than established faculty. In a study on the rise of co-authorship in business journal articles a primary reason cited was that "universities and colleges have had evolving missions with an increased emphasis on scholarly endeavors" (Manton & English, 2006, p. 86). In this study of business faculty at universities in Texas which did not offer doctoral programs in business, 70% of those responding said that AACSB had a significant or very significant influence on the research and scholarly endeavors of business faculty. Only 7% of the faculty who participated in the study said that AACSB had no impact. Not surprisingly, administrators also have increased publication expectations for their faculty with a trend toward more weight on scholarly activities (Alshare, Wenger & Miller, 2007).

The inevitable result can only be that business faculty will generate a greater quantity of publishable research in order to meet the increased publication expectations, regardless of the value or relevance of that research. Although many rationales can be provided for the increased emphasis on peer reviewed journal

publications, one of the primary justifications often given for this increased emphasis is that research and publishing results in more effective teaching; the premise given that faculty members who are actively engaged in research, *resulting in publications*, are more likely to remain current in their discipline and that, in turn, results in enhanced teaching effectiveness and student learning (AACSB, 2008). Not all agree with this viewpoint, however. "The dirty little secret at most of today's best business schools is that they chiefly serve the faculty's research interests and career goals, with too little regard for the needs of other stakeholders" (Bennis and O'Toole 2005, p. 103). Some argue that an increased emphasis on research and publications comes at the price of placing less value on teaching (Roberts, Johnson & Groesbeck, 2004).

THE VALUE OF RESEARCH ON TEACHING EFFECTIVENESS

There appears to be no clear empirical evidence to support the value of research and publishing and the role it plays in enhancing teaching effectiveness. A substantial body of literature exists which has analyzed, debated and theorized about the value of a professor's research and publishing to teaching success and effectiveness. The majority of studies have concluded that there is some, albeit not strong, correlation between the quantity and/or quality of journal articles published and teaching success or effectiveness. Allman (1988) stated that research activities of faculty are related to the amount of time a faculty member devotes to teaching, and as more time and energy is devoted to research, less emphasis is placed on teaching. Kasten (1984) is therefore speculating that there is a negative relationship between research and teaching. DeYoung (1985) stated that faculty are encouraged by their departments to be highly visible. He defined high visibility as attending professional meetings and having research articles accepted for publication rather than quality teaching or students' career success after graduation. Webster (1985) also attempted to address the issue of whether there was a correlation between research and effective teaching. He found 10 empirical studies on the relationship between research and teaching success. None of the studies found a high positive correlation between research productivity and teaching success.

Over the years several scholars have conducted meta-analyses of studies examining the relationship between teaching and research. Feldman (1987) examined 42 studies and concluded that "the likelihood that research productivity actually benefits teaching is extremely small...the two, for all practical purposes, are essentially unrelated." Hattie and Marsh (1996) conducted a meta-analysis of 58 studies exploring the correlation between teaching outcomes and measures of research productivity and their conclusion was that for teaching and research "the relationship is zero."

Tanner, Totaro and Hotard (1992) in a study of management faculty, using student opinion surveys as a measure of teaching performance and the number of papers published as the measure of research productivity, found little relationship between the two activities. Tanner, et.al. (1999) in a later study of MIS faculty concluded that any relationship that might exist between teaching and research was very weak or convoluted at best. Noser (1996) in a nationwide study of economics faculty using teaching evaluations and self reported measures of research output found only a marginal relationship between teaching and research. Bell, Frecka & Solomon (1993) in a study of accounting faculty found generally positive associations between teaching effectiveness and research publications, but also noted one of the reasons such a relationship might exist is that people who are good at research are also good at teaching because they excel at most everything they do. Tang and Chamberlain (1997) in a broad based study of six regional state

universities in Tennessee compared the attitudes of administrators versus faculty in terms of the supportive relationship between teaching and research. Their study showed that administrators tended to believe that research and teaching are mutually supporting activities and that both are missions of the universities while faculty were less inclined to agree that research and teaching were essential parts of their jobs. Faculty were also more inclined to believe that research interfered with their teaching.

More recent studies have not provided additional support for the role of research in effective teaching or career success of business school graduates, at either the undergraduate or MBA level, in fact many argue that the continued emphasis on research-based knowledge has led to an "academic-practitioner divide" (e.g. Ottesen and Gronehaug 2004; Thomas 2006). Jenkins (2004) conducted a review of the literature through 2004 and also failed to find persuasive evidence that research improves teaching.

In a comprehensive study on the state of business school education and success after graduation, Pfeffer and Fong (2002) found little correlation between graduates' career successes and research output by their business faculty. While the authors acknowledged that business faculty research output is positively related to the prestige of a school/university and that graduates of the top business schools such as Wharton, Stanford, MIT, etc. tend to advance further career-wise than graduates from less prestigious institutions, they attributed this to the quality of students admitted. Pfeffer and Fong's (2002) study did not show evidence that prestigious business schools provide students with a superior education because of the faculty's research focus or output.

Beyond the failure to find a strong positive correlation between teaching and research several scholars are of the opinion that much of the research published is of dubious value and that the result of the increased emphasis has even had a negative impact on business education. Allman (1988) in an article published 20 years ago delineated what he considered several abuses of the use of research findings. The abuses included flawed research, the listing of inordinate numbers of authors on a research paper, studies with inflated results, and publishing what he called the 'minimum publishable unit,' i.e. publishing the results of a research project in small incremental units in order to maximize the quantity of publications. The current emphasis by the AACSB on quantity of publications will most likely lead to an increase in the types of abuses cited by Allman twenty years ago.

One of the most critical statements about academic research and publishing, in general, came from Cornell physicist N. David Mermin who said "many of the papers written today contain trivial and uninteresting results. If 80 percent of them weren't written, the progress of science wouldn't be affected at all" (Allman, 1988). Charles J. Sykes (1988) offered an equally critical analysis of research by stating:

> *"A bill of indictment for the professors' crimes against higher education would be lengthy. Here is a partial one: They have created a culture in which bad teaching goes unnoticed and unsanctioned and good teaching is penalized. They have cloaked their scholarship in stupefying, inscrutable jargon. This conceals the fact that much of what passes for research is trivial and inane. In tens of thousands of books and hundreds of thousands of journal articles, they have perverted the system of academic publishing into a scheme that serves only to advance academic careers and bloat libraries with masses of unread, unreadable, and worthless pabulum."*

Warren G. Bennis, one of today's leading scholars on leadership and James O'Toole, research professor at the University of Southern California's Center for Effective Organizations contend that there is a crisis in management education, especially in graduate education, in today's business schools. Bennis and O'Toole (2005) state:

> *"During the past several decades, many leading B schools have quietly adopted an inappropriate—and ultimately self-defeating—model of academic excellence. Instead of measuring themselves in terms of the competence of their graduates, or by how well their faculties understand important drivers of business performance, they measure themselves almost solely by the rigor of their scientific research. They have adopted a model of science that uses abstract financial and economic analysis, statistical multiple regressions, and laboratory psychology. Some of the research produced is excellent, but because so little of it is grounded in actual business practices, the focus of graduate business education has become increasingly circumscribed—and less and less relevant to practitioners."*

From an institutional point of view the research productivity of a university's faculty has some very obvious beneficial outcomes. The two most obvious benefits are increasing the status of the institution and securing grant dollars. However, good teaching takes place in the classroom between the individual faculty and students and the evidence on the benefit of research to teaching effectiveness does not generally support the proposition that research enhances that interaction or outcome. Based on the current empirical evidence on the hypothesized relationship between teaching and research at best there would appear to be little or no effect on teaching effectiveness, at worst it could be an impediment to improving teaching.

PURPOSE OF THIS STUDY

In light of the lack of any clear evidence that increasing levels of research and publishing leads to enhanced teaching outcomes and student learning, are business schools, especially those at balanced non-doctoral schools, and the AACSB on the right track by placing greater emphasis on their faculty's research and publishing and determining academic qualification almost exclusively on the number of published research papers? The purpose of this study is not to confirm nor discredit prior conclusions about the value of research and publishing or its correlation with teaching/learning outcomes. That debate will be left to those more concerned with the pedagogical aspects of the role of research on teaching effectiveness in general. This study is an attitudinal study and is designed to examine the more narrow issue of how business administration faculty themselves perceive the value of research and publishing as it relates to increased teaching effectiveness and their opinions about the role of research. Specifically the major research questions of interest are:

1. Do business administration faculty, at AACSB accredited schools, who engage in research and publishing *perceive* that their teaching effectiveness is enhanced by their research and publishing?

2. To what extent to business professors feel that research and teaching are mutually supporting activities versus conflicting activities?

3. To what extent do professors actually incorporate their research and published findings into the classroom?

METHODOLOGY

A survey was developed to gather attitudinal information about various aspects of the research and teaching activities of faculty and their perceptions about the value of their research and publishing relative to their teaching effectiveness. One thousand business faculty members from the list of AACSB accredited schools were randomly chosen. E-mail addresses for these faculty members were obtained from their respective university's web site. Each faculty member selected was sent an e-mail asking for their participation. The e-mail included a link to the questionnaire that could be accessed online. A follow-up e-mail request was sent to non-respondents two weeks after the initial request. Ten e-mails were blocked with an additional 44 undeliverable, leaving a remaining sample of 946 business faculty. A total of 136 faculty responded to the survey, resulting in a 14.4% response rate. Although the response rate was lower than desired, it is fairly typical of online surveys (Deutskens et al. 2004; Porter and Whitcomb, 2003). In an effort to rule out non-response error, the respondents were compared based on when they completed the survey. Respondents who completed the survey within 24 hours of receipt of the initial e-mail were compared to respondents who responded two weeks later as previous research has shown that those who respond less readily, late responders, are similar to non-respondents (Armstrong and Overton, 1977). Because no differences were found demographically, attitudinally or behaviorally, it can be concluded that the data did not suffer from non-response issues.

PROFILE OF SURVEY RESPONDENTS

A profile of the survey respondents is summarized in Table 1. In terms of rank, one-third of those responding (33.6%) were full professors, 31.3% were associate professors, 23.7% were assistant professors, 6.1% were instructors, and the remaining 5.3% were in other categories to include lecturer, executive/professor in residence, etc. With regard to tenure status, 58.8% of those responding were tenured, while the remaining 41.2% were not tenured. Slightly more than one-half of those responding, 54.2%, said they had no administrative duties in addition to their role as a faculty member. The respondents represented the breadth of business disciplines where 24.4% were from marketing, 20.6% were management, 13% were finance, 12.2% were information systems, 10.7% were accounting, 7.6% were economics, and 4.6% were operations. In terms of credit hour teaching load per academic term, the majority of those responding, 43%, taught nine credit hours per term. An additional 21.9% taught twelve credit hours, while 18% taught six credit hours. Almost two-thirds of the survey respondents were male (64.1%).

Table 1: Profile of the survey respondents			
Faculty Rank		Business Discipline	
Rank	% Responding	Discipline	% Responding
Instructor	6.1	Accounting	10.7
Assistant Professor	23.7	Business Law	2.3
Associate Professor	31.3	Economics	7.6
Full Professor	33.6	Finance	13.0
Other	5.3	Information Systems/MIS	12.2
Teaching Load Per Academic Term		Management	20.6
		Marketing	24.4
Credit Hours Taught	% Responding	Operations	4.6
Less than 6	10.9	Other	4.6
6	18.0	Tenure Status	
7 - 8	4.7		
9	43.0	Status	% Responding
12	21.9	Tenured	58.8
More than 12	1.6	Not tenured	41.2
Gender		Administrative Duties in Addition to Faculty Role	
Male	64.1	No	54.2%
Female	35.9	Yes	45.8%

RESULTS

Responses to the statements regarding faculty attitudes on the impact of research on teaching are provided in Table 2. Table 3 provides information on the statistically significant differences between the respondents' demographic groupings where applicable. For the purposes of presentation, the statements are not listed in the order presented in the survey but, rather, grouped into two areas: personal perspectives on teaching and research and the perceived impact of research on teaching.

Faculty almost overwhelmingly agreed with the statement "if receipt of tenure and promotion were not contingent on research and publishing, most business faculty would devote less time and effort to this activity". More than four-fifths of those responding (83.8%) either agreed or strongly agreed with this statement. The mean rating of 4.10 was the highest in the survey. This also leads one to believe that faculty would produce fewer publications if this were not a criterion for tenure and promotion.

Table 2: Faculty attitudes toward the impact of research on teaching				
Attitudinal statement	Mean	Percentage Responding		
		Agree / Strong Agree	Neither Agree or Disagree	Disagree / Strongly Disagree
Personal perspectives on teaching and research				
Teaching and research are mutually supportive activities	3.52	60.3	16.2	23.5
Research interferes with my teaching effectiveness	2.85	33.1	18.4	48.5
Teaching interferes with my research productivity	3.41	57.1	14.8	28.1
Business schools place too much emphasis on publications	3.38	50.0	21.3	28.7
For most business faculty, the primary reason for conducting research is to secure a publication rather than advance the body of knowledge	3.93	67.4	21.5	11.1
If receipt of tenure and promotion were not contingent on research and publishing, most business faculty would devote less time and effort to this activity	4.10	83.8	7.4	8.8
The most highly rated professors, by students, in my department are those who are the most prolific publishers	2.15	11.0	26.5	62.5
The practice of business has been greatly advanced due to the volume of published academic research over the past 10 years	2.88	18.8	55.6	25.6
Perceived impact of research on students/teaching				
Business students' educational experience is enhanced by the research activities of their professors	3.54	61.5	18.5	20.0
Securing publications in prestigious academic journals contributes more to teaching excellence than publications in less prestigious journals	2.20	11.8	21.3	66.9
Students would not be as well prepared, academically, to enter the business world if their professors did not publish in academic journals	2.66	30.1	21.3	48.5
My students are generally aware of my current research projects	2.71	33.1	14.7	52.2
My students have an appreciation for my contributions to my academic discipline resulting from my publications	2.21	16.2	14.7	69.1
By researching and publishing, I am a better teacher	3.57	61.8	18.4	19.9
I regularly use published research from academic journal or conference proceedings when preparing for my classes	2.81	37.5	14.7	47.8

Table 3: Statistically significant differences in faculty attitudes	
Attitudinal Statement	Statistically Significant Differences
Personal perspectives on teaching and research	
Teaching and research are mutually supportive activities	• Males were more likely to agree with this statement than females ($p \leq .035$) • Economics faculty were more likely to agree with this statement than accounting faculty ($p \leq .007$)
Research interferes with my teaching effectiveness	• Faculty at the instructor rank were more likely to agree with this statement than those at the associate professor ($p \leq .019$) or full professor rank ($p \leq .007$) • Faculty at the assistant professor rank were more likely to agree with this statement than those at the full professor rank ($p \leq .027$) • Accounting faculty were more likely to agree with this statement than economics faculty ($p \leq .039$)
Teaching interferes with my research productivity	• Faculty at the instructor rank were less likely to agree with this statement than those at the assistant professor rank ($p \leq .05$)
Business schools place too much emphasis on publications	• Females were more likely to agree with this statement than males ($p \leq .04$) • Accounting faculty were more likely to agree with this statement than economics faculty ($p \leq .008$)
For most business faculty, the primary reason for conducting research is to secure a publication rather than advance the body of knowledge	• Faculty who teach 12 hours were more likely to agree with this statement than those who teach fewer than 6 credit hours ($p \leq .05$)
Perceived impact of research on students/teaching	
Business students' educational experience is enhanced by the research activities of their professors	• Faculty with administrative duties were more likely to agree with this statements than those without administrative duties ($p \leq .007$)
Students would not be as well prepared, academically, to enter the business world if their professors did not publish in academic journals	• Males were more likely to agree with this statement than females ($p \leq .045$)

Table 3: Statistically significant differences in faculty attitudes	
Attitudinal Statement	Statistically Significant Differences
By researching and publishing, I am a better teacher	• Faculty with administrative duties were more likely to agree with this statements than those without administrative duties ($p \leq .031$) • Faculty at the instructor rank were less likely to agree with this statement than those at the assistant ($p \leq .049$), associate ($p \leq .007$) or full professor rank ($p \leq .005$) • Faculty who teach 12 credit hours were less likely to agree with this statement than those who teach fewer than 6 credit hours ($p \leq .042$), 6 credit hours ($p \leq .048$), and 9 credit hours ($p \leq .013$

An interesting but not surprising result is represented by the item regarding the primary reason for conducting research. The mean for the statement "for most business faculty, the primary reason for conducting research is to secure a publication rather than advance the body of knowledge" was 3.93 with two-thirds (67.4%) of the respondents either agreeing or strongly agreeing with this statement. Only 11.1% disagreed or strongly disagreed with this statement. It was also not surprising that faculty with higher teaching loads were more likely to agree with this statement. This result seems to reinforce the findings from previous studies and is concert with the notion that an increasing emphasis on the number of publications may indeed lend itself to an emphasis on the output from scholarly activity rather than the outcome. One-half of those responding (50%) also agreed with the statement "business schools place too much emphasis on research" The remaining one-half either disagreed (28.1%) or neither agreed or disagreed (21.3% with this statement. Interestingly, female faculty were more likely to agree with this statement than males and accounting faculty were more likely to agree than were economics faculty.

While many faculty agreed or strongly agreed (60.3%) with the statement "teaching and research are mutually supportive activities", an almost equally high percentage of faculty agreed or strongly agreed (57.1%) that "teaching interferes with my research productivity". Male faculty were more likely than female faculty to agree with that teaching and research are mutually supportive. Assistant professors are more likely to agree that teaching interferes with research than were instructors. This makes intuitive sense since assistant professors are typically on the tenure-track and are under pressure to have a specified publication record in order to be tenured and promoted. Interestingly, only one-third (33.1%) of those responding agreed with the statement "research interferes with my teaching effectiveness". However, assistant professors were far more likely to agree with this statement than were full professors. Again, this intuitively is sound given the pressures for assistant professors to have adequate records in both teaching and research at most balanced institutions.

The largest percentage of faculty responding, 55.6%, neither agreed or disagreed with the statement "the practice of business has been greatly advanced due to the volume of published academic research over the past 10 years". An additional 25.6% disagreed or strongly disagreed, while 18.8% agreed or strongly

agreed. It is likely that most faculty have no real knowledge of the merit of most academic contributions on practice which may account for such a high percentage responding in the neutral category. Faculty typically did not agree that "the most highly rated professors, by students, in my department are those who are the most prolific publishers". Only 11% of those responding said they either agreed or strongly agreed with this statement, while 62.5% either disagreed or strongly disagreed.

The items regarding the perceived impact of research on students/teaching also reported mixed results. While almost two-thirds of those responding agreed with the statements "by researching and publishing, I am a better teacher" (61.8%) and "business students' educational experience is enhanced by the research activities of their professors" (61.5%), the majority of faculty disagreed that "securing publications in prestigious academic journals contributes more to teaching excellence than publications in less prestigious journals" (66.9%). It should be noted, though, that faculty with administrative assignments and faculty with a lower teaching load, were more likely to believe that researching and publishing makes a faculty member a better teacher. Administrative faculty were also more likely to agree that the educational experience of students is enhanced by a professor's research activities. This may be because faculty serving in an administrative role are the ones typically charged with setting the research expectations and, as these expectations continue to increase, espousing the notion that teaching benefits from increased research makes the concept more salient to faculty.

While faculty appeared to support the idea that research benefited teaching, this was not evidenced by how faculty perceived the impact of their research on students. Only 33.3% of faculty responding agreed or strongly agreed with the statement "my students are generally aware of my current research projects". More than one-half, 52.2%, in fact, disagreed or strongly disagreed with this statement. Only 16.2% agreed or strongly agreed that "my students have an appreciation for my contributions to my academic discipline resulting from my publications", while 69.1% disagreed or strongly disagreed.

Results as to how faculty meshed research activities with teaching and learning were mixed. Almost one-half of those responding, 47.8%, disagreed or strongly disagreed with the statement "I regularly use published research from academic journals or conference proceedings when preparing for my classes". An additional 37.5% indicated they did use their research to help prepare for class. When asked to react to the statement "students would not be as well prepared, academically, to enter the business world if their professors did not publish in academic journals", 48.5% disagreed or strongly disagreed while 30.1% agreed or strongly agreed.

DISCUSSION

This study examined the perceived impact of research and publishing on teaching effectiveness. Results revealed that faculty in non-doctoral granting business colleges say that their research activities actually make them better teachers. Faculty also perceived that their research enhances the educational experience of their students. Perceptions, however, did not appear to reflect actual behavior. Most faculty who participated in the study acknowledged that their students were unaware of their research and that publishing in prestigious publications did not contribute to teaching excellence any differently than less prominent outlets. More importantly, the majority of faculty in this study did not use published research when preparing materials for class. If students are unaware of faculty research efforts, publication outlets do not enhance teaching, and published research is not used in class preparation, it begs several questions. How

does or can research enhances the overall educational experience of business students? What specific elements of a faculty member's research improves his/her instructional quality? Why do faculty typically not use published research in preparing course materials? There seems to be a disconnect between how faculty think and act. Is it possible that faculty believe that research enhances teaching because it provides them with a sense of self efficacy? If faculty truly desire to bridge the gap between thought and action, they should examine mechanisms for bringing their research into the classroom environment.

Faculty also sent conflicting messages about their personal perceptions of research. While the majority said that teaching and research are mutually supportive activities, a large number also noted that their teaching obligations interfered with their research agenda. They did not, however, typically think that research interfered with their teaching. More telling is that an overwhelming number of the faculty surveyed said they would spend less time in research and publishing activities if it were not expected for tenure and promotion. Many also acknowledged that most faculty publish to secure a publication rather than advance the body of knowledge in their discipline or, more plainly, many faculty publish for the sake of publishing. If research is simply a means to an end -- the publication -- how do disciplines, business practice and students benefit? This is an important question for faculty, administrators and accrediting bodies to examine. If no one other than the author of the research benefits, it seems as business schools have lost their compass. It is imperative that accrediting bodies begin to evaluate research less on numbers and more on how it will impact the various stakeholders of the business school, most importantly, the future business leaders who are sitting in today's classrooms. It is up to everyone involved to make research relevant, not only to other researchers, but to enhance the teaching and learning experience as well.

LIMITATIONS AND FUTURE RESEARCH

One limitation of this study was that the low response rate resulted in a smaller than expected effective sample size. While the test of early versus late respondents did not reveal any significant differences, a larger sample size would have allowed for closer examination of differences by some of the classification variables, particularly discipline. A follow-on study focused on discipline with a sufficient sample size within discipline would provide an interesting comparison to better understand the impact of research on teaching and learning. Additionally, the sample included only AACSB-accredited schools. Future research could include both AACSB candidacy schools as well as schools non-accredited institutions in order to determine the impact of the accreditation factor. Another direction for future research might be a cross-cultural examination of business schools in multiple countries in order to understand how research is used in various cultural settings. Finally, a study examining behavioral variables related to research and teaching coupled with faculty altitudinal variables would provide an interesting mechanism for determining how what faculty say about research and teaching translates into what they actually do.

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STUDENT PERCEPTIONS OF THE IMPORTANCE OF INSTRUCTOR TRAITS: A CROSS-CULTURAL STUDY

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ABSTRACT

This study attempts to explore students' perceptions of importance of instructor traits in three countries; The United States, Jordan, and Chile. A survey questionnaire was administered to samples of college students in the three countries during the academic year of 2004-2005. The questionnaire was sent and distributed to 500 college students in each country. Demographic variables, such as gender, age, educational background, GPA, and learning style were included in the questionnaire. In addition, the survey requested information about perceptions of importance of forty-five traits of instructors. The results of ANOVA revealed that there were significant differences in students' responses in 43 statements (traits). However, many of these differences were in the extent of their agreements. There were only 8 statements in which students significantly disagreed on the importance of these traits. On the other hand, there were thirty-four traits which were considered by students to be important to very important. These traits could be classified into 5 main categories: traits related to instructor 1) personality; 2) communication skills; 3) style of class management and evaluation of student performance; 4) qualification and credential; and 5) teaching style. Among the demographic factors, gender was the most significant factor that influenced student responses; especially for the American and Jordanian students. The results of the paired sample t-test showed that there were significant differences in student perceptions of importance of instructor traits between face-to-face and online teaching modes. Differences among perceptions of the importance of instructor traits could be partially explained by cultural differences among the three countries using Hofstede's cultural dimensions. Yet, respondents agreed that to be respectful of students, approachable in and out of class, and clear as well as concise explanations of course materials were the most important traits.

INTRODUCTION

Instructional effectiveness is an integral component of the educational process. In practice, considerable time/effort and financial resources are devoted to formal preparation of learners for successful personal and professional lives. Even though cultures and modes of lifestyles may differ, the essential nature of meaningful educational experiences is most relevant to citizens and countries. Growing globalization and technological advances are likely to serve as further impetuses for value-added higher-education experiences.

Understanding student perceptions of an effective instructor has historically been an important consideration. However, with the introduction of online teaching and an increase in exchange programs among universities throughout the world, it becomes more urgent than before to understand what characteristics (traits) make an effective instructor from student perspectives across different cultures.

Therefore, instructors should be aware of student expectations, especially if students are from different countries.

This study addresses relevant issues by comparing student perceptions of instructor traits in the USA, Jordan, and Chile. These three countries were primarily selected because they represent different sets of cultures according to Hofstede's cultural dimensions (the power distance, individualism, masculinity, and uncertainty avoidance). We believed that differences in these cultural dimensions among students in these three countries influence, to certain extent, their perceptions of traits associated with effective instructors.

BACKGROUND PERSPECTIVE

Students and professors may interact in dissimilar educational environments that differ in any number of ways, including instructional approaches as well as equipment and facility resources. Nevertheless, student perceptions regarding their educational experiences prevail. As noted by Doyle (1977), research efforts on teacher effectiveness involve numerous complications related to such things as consistency of outcomes, methodology, and theoretical considerations. Nearly two decades later, Tuckman (1995) noted the absence of consensus about definitions of effective teaching and lack of agreement over how to measure it.

Studies by Bousfield (1940), Duncan and Leach (1934), and Kilcoyne (1949) were among earlier research involving student ratings of instruction. By the 1960s, the topic continued to interest researchers. For instance, Voeks and French (1960) sought to learn if differences existed between student ratings and grades received. Quick and Wolfe (1965) examined student responses to learn factors that described ideal college professors. Cashin (1996) observed that considerable research on student evaluation of instruction evolved since the early 1970s. Seemingly, however, a dearth of reported studies on the topic exists for some countries, including Chile and Jordan.

Compared to Western societies, Anwar and Chaker (2003) noted that Arab society is more collective and less individualistic. Meleis (1982) commented that Arabs have higher orientation to verbal than written communication and also rely on persons who have more experience and education to be responsible for decisions involving educational experiences. Al-Hamdan (2007) surveyed students at Kuwait University and found that males gave higher average ratings to faculty on factors such as feeling respected and appreciated, managing the classroom with strictness, and setting good in-class modular examples. Badri, Abdulla, Kamali, and Dodeen (2006) reviewed student evaluations in business programs at United Arab Emirates University. Students who anticipated higher grades gave higher ratings to professors than those who expected lower grades. As related to grade-point averages, results were inconsistent; poor students and excellent students gave higher ratings than average students. Professors of second and fourth-year courses were rated higher than those teaching first and third-year courses.

Smart, Kelley, and Conant (2003) surveyed marketing professors who were considered to be superior teachers by their marketing department chairs. These professors associated success with characteristics reported by outstanding professors in several earlier studies, some dating from the 1980s. Valued characteristics included excellent communication skills, interactive teaching styles, a real-world focus, empathy for others, and both organization as well as presentation skills. Tang's analysis (1997) of responses from business students at a regional state university revealed several factors as predictors of teaching effectiveness. These factors included clarity of presentations, ability to answer questions,

courteous/professional treatment of students, and preparation for class. Faranda and Clarke (2004) used interviews to ascertain business students' views of traits evidenced by effective professors, which included building rapport, developing an engaging learning environment, being knowledgeable, and practicing fairness.

Costin, Greenough, and Menges (1971) reviewed numerous studies involving relationships between student evaluations and grades. While some researchers reported no relationships, others found positive relationships that were significant. Ahmadi, Helms, and Raiszadeh (2001) sampled business students and reported they did not agree that giving higher ratings than professors deserved would negatively impact course grades. Also, students disagreed that higher ratings were given to professors who assigned little, if any, homework. Finally, respondents indicated that giving easy examinations did not result in getting higher ratings. Greenwald and Gillmore (1979) sampled 200 undergraduate classes at the University of Washington. Results supported the viewpoint that lenient instructors received higher student evaluations.

Sojka, Gupta, and Detter-Schmelz (2002) surveyed students and faculty at a Midwestern university to determine perceptions toward student ratings. Students tended not to agree that ratings of instructors led to changes in courses or even styles of teaching. Yet, faculty felt that easy and more entertaining instructors were apt to be more highly rated. Griffin's study (2001) of instructor reputations concluded that hearing of positive information about instructors led to higher student ratings for courses and instructors, as compared to ratings by students who heard negative information. Best and Addison (2000) examined instructor behavior and concluded that professors perceived to practice warm behaviors were more likely to receive higher student ratings.

Gender represents another variable that has been a focus of student-evaluation research. Bachen, McLoughlin, and Garcia (1999) studied instructional stereotypes associated with gender and found that females rated female professors higher across these gender-related dimensions; however, male students tended not to differentiate between male and female professors in terms of student ratings. Whitworth, Price, and Randall (2002) reviewed slightly more than 12,000 student evaluations and concluded that female instructors rated higher and were perceived to promote significantly greater amounts of learning. Centra and Gaubatz (2000) surveyed 741 classes to determine if gender bias existed in student ratings. While differences were not especially large, they reported some same-sex preferences, especially in situations involving female students rating female instructors.

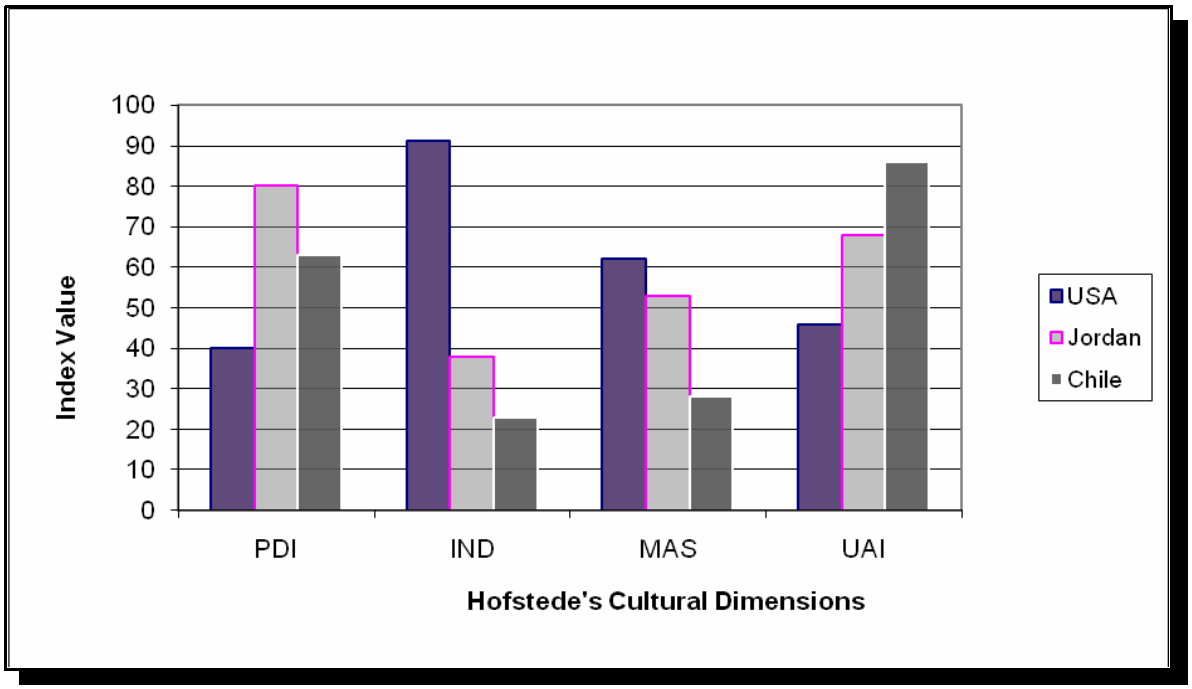
Seemingly, the extent of student participation varies among faculty and classes. Fritschner (2000) used a nonparticipant observation technique and sociological interview approach to study student participation in introductory and higher-level classes. Students participated to a greater extent in higher-level classes, and she also reported that traditional students considered their nontraditional peers to be more driven as well as motivated. Fassinger (2000) studied data from 51 classes and found that classes with higher levels of participation tended to evidence greater cooperation and involvement with the professors viewed as being more approachable and supportive of students. In classes with lower student participation, professors held more positive views toward a class than those held by their students.

Hofstede's (1997) research on cultural dimensions provides a theoretical underpinning that might help in explaining differences in student perceptions of instructor traits. In his study, Hofstede surveyed 50 different countries, including the USA and Chile, and grouped together the Arab-speaking countries. He identified four dimensions that can be used to distinguish among different cultures: power distance,

individualism, masculinity, and uncertainty avoidance. Figure 1 provides the index scores of these cultural dimensions for each country.

Power distance (PDI), defined as "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally" (Hofstede, 1997, p. 28) is larger for Arab countries than for Chile and the USA (80 vs. 63 vs. 40). In a school setting, larger values of power distance mean considerable dependence of students on teachers; students are unlikely to approach and contradict their teachers directly. Individualism (IDV), defined as "the interest of the individual prevails over the interest of the group" (Hofstede, 1997, p. 50) is significantly higher for the USA than Arab countries and Chile (91 vs. 38 vs. 23). Larger values of IDV mean more individualistic countries/societies.

Figure 1: A comparison of Hofstede's Cultural Dimensions (USA vs. Jordan vs. Chile)



Masculinity (MAS), defined as "pertains to societies in which social gender roles are clearly distinct" (Hofstede, 1997, p. 82) is higher for the USA than Arab countries and Chile (62 vs. 53 vs. 28). Larger values of MAS mean more distinct social roles between men and women with dominant societal values such as assertiveness, acquisition of money, and focus on material success. Finally, uncertainty avoidance (UAI) is defined as "the extent to which the members of a culture feel threatened by uncertain or unknown situations" (Hofstede, 1997, p. 113) is stronger for Chile than for Arab countries and the USA (86 vs. 68 vs. 46). Larger values of UAI mean more avoidance to uncertainty. We believed that differences in Hofstede's cultural dimensions among students in these three countries influenced, to certain extent, their perceptions of importance of instructor traits.

Based on the above literature and due to the exploratory nature of this study, we formulated the following research questions:

RQ1: Is there any significant difference in perceptions of importance of instructor traits among American, Jordanian, and Chilean students?

RQ2: Does each trait have same perceived importance, regardless of the mode of delivering instruction (face-to-face and online)?

RQ3: Do gender, age, discipline, student classification, GPA, learning style, and prior online experience influence student perceptions?

More specifically, the following hypotheses were proposed:

H1: The perceived importance of instructor traits is significantly different among these three countries.

H2a: In the USA, there is a significant difference in perceived importance of instructor traits between online and face-to-face mode of instruction.

H2b: In Chile, there is a significant difference in perceived importance of instructor traits between online and face-to-face mode of instruction.

For each country:

H3a: There is a significant difference in perceived importance of instructor traits between male and female students.

H3b: There is a significant difference in perceived importance of instructor traits between traditional and non-traditional students.

H3c: There is a significant difference in perceived importance of instructor traits among students' disciplines.

H3d: There is a significant difference in perceived importance of instructor traits between students with high GPA and those with low GPAs.

H3e: There is a significant difference in perceived importance of instructor traits among student classifications.

H3f: There is a significant difference in perceived importance of instructor traits among students' learning styles.

H3g: There is a significant difference in perceived importance of instructor traits between students who had online experience and those who did not.

METHODOLOGY

Instrument Development, Data Collection, and Statistical Techniques

Samples of 500 college students in each of the three countries–USA, Chile, and Jordan– were selected to participate in the study, which was conducted in the 2004-2005 academic year. To assure appropriate respondent understanding of survey questions, students in Jordan responded to a version written in English and Arabic, as professors as well as students were generally familiar with English and Arabic (AMIDEAST, 2004). As only about two percent of people in Chile who are 15 years of age or older have fluency in English (Miranda, 2004), a colleague facilitated translation of the questionnaire to Spanish. Feedback was solicited from several instructors and students to ascertain translation accuracy, and subsequently, a few minor modifications were included in a final version of the questionnaire.

Demographic variables, such as gender, age, educational background (discipline), GPA, and learning style were included in the questionnaire. In addition, the survey requested information about perceptions of importance for instructor traits. The framework for the questionnaire and many items were adopted from a study by Moorman (2004). Participants responded to statements using a 5-point Likert scale, which ranged from not important (1) to very important (5). The reliability of the instrument was tested using the Cronbach's alpha coefficient. The values of alpha for the three samples ranged from 0.83 to 0.91. These values are considered to be acceptable for an explanatory study (Hair et al., 1998). SPSS statistical software was used to compute frequencies, means, percentages, Cronbach's alpha, and factor analysis. T-test, paired sample t-test, and ANOVA procedures were used to test the hypotheses. When significant differences in group means were found, we extended the analysis by performing pairwise comparisons.

DATA ANALYSIS

Two-hundred fifty-four American students, 229 Chilean students and 190 Jordanian students returned completed surveys. This represented response rates of 51, 46 and 38 percent, respectively. Forty-five percent of American students were males, compared with 82 and 45 percent in the Chilean and Jordanian samples. In the three samples, students were undergraduates, and the majority was younger than 30 years old. The student samples represented different disciplines (business, hard sciences, and social sciences). Additionally, the three samples included students from lower-level classes (freshman and sophomore) and upper-level classes (junior and senior) as shown in Table 1. Eighty-nine percent of American students, 31 percent of Chilean students and 73 percent of Jordanian students had GPAs higher than or equal to 2.5 (A = 4.0). Forty-one percent of American students, 4 percent of Chilean students, and 25 percent of Jordanian students had taken online courses. The majority of students in the three countries (48 percent of American students, 43 percent of Chilean students, and 36 percent of Jordanian students) indicated that their learning style was "visual/verbal." A summary of frequency distributions by country for relevant variables is presented in Table 1.

Table 1. Frequency Distributions of Key Variables by Country.

Variable	USA (n1=254)		Chile (n2=229)		Jordan (n3=190)	
	No. of Responses	(%)	No. of Responses	(%)	No. of Responses	(%)
Gender:						
Male	115	45.28	187	81.7	85	44.7
Female	139	54.72	42	18.3	105	55.3
Age:						
<= 22 years	203	79.92	163	71.18	165	86.80
> 22 years	51	20.08	66	28.82	25	13.20
Class rank:						
Freshman	51	20.1	74	32.3	45	23.7
Sophomore	68	26.8	25	10.9	48	25.3
Junior	78	30.7	27	11.8	56	29.5
Senior	45	17.7	103	45.0	41	21.6
Graduate	11	4.3	0	0	0	0
Other	1	0.4	0	0	0	0
GPA:						
< 2.5	27	10.6	158	69.0	52	27.4
>= 2.5	227	89.4	71	31.0	138	72.6
Had online courses:						
Yes	103	40.6	8	3.5	48	25.3
No	151	59.4	221	96.5	142	74.7
Learning Method:						
Visual/Verbal	121	47.6	98	42.80	69	36.3
Visual/Nonverbal	25	9.8	18	7.90	45	23.7
Tactil/Kinesthetic	82	32.3	87	38.0	41	21.6
Auditory/Verbal	26	10.2	26	11.4	35	18.4

RESULTS OF THE STUDY

Results are presented in three parts. The first part provides answers for research question RQ1 concerning students' perceptions of importance for instructor traits in these three countries. ANOVA and Bonferroni multiple comparisons procedures were used to perform the analysis for testing H1. We utilized country as the independent variable at three levels (USA, Jordan, and Chile). The dependent variables were the traits. The next part provides the answer to the second research question related to whether the perceived importance of instructor traits was affected by the mode of delivering instruction. Paired sample t-test was used to test hypotheses H2a-H2b. The third part presents the answer for the third research question related to the impact of demographic variables on students' perceptions. ANOVA and Bonferroni multiple comparisons procedures were employed to test hypotheses H3a-H3g. *A Comparison of Student Perceptions*

The ANOVA procedure revealed that there was a significant difference among students' perceptions in the three countries for all but two statements (identified as statements 18 and 28) as shown in Table 2. Thus, the first hypothesis was supported. Students in these three countries agreed with following statements

(i.e., Students felt that these traits were important or very important.): Statements # 1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 14, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30, 31, 32, 33, 35, 36, 37, 38, 40, 41, 42, and 44. However, they differed in the extent of their agreement. On the other hand, students in these three countries agreed that statement # 12 was "not important to somewhat important." Finally, students disagreed on the importance of the following traits: Statements # 2, 9, 15, 19, 34, 39, 43, and 45.

Table 2: The Results of ANOVA Procedure for Three Countries

	When evaluating a professor, how important it is that the professor …	USA		Chile		Jordan		
#	Trait	Mean	Std.	Mean	Std.	Mean	Std.	F*
1	Is courteous?	4.65	.64	4.62	.73	4.24	1.1	13.69
2	Is well published in her/his discipline?	4.03	1.0	3.86	1.0	3.02	1.1	49.55
3	Is approachable in and out of class?	4.74	.50	4.61	.60	4.45	.86	9.94
4	Gives rapid feedback on test/assignment?	4.52	.73	4.11	.89	3.61	1.2	51.91
5	Is respectful of students?	4.82	.46	4.81	.54	4.62	.77	6.85
6	Stays current in her/his academic field?	4.64	.57	4.75	.54	4.12	.98	44.51
7	Has a sense of humor?	4.19	.93	3.70	1.1	3.72	1.1	16.35
8	Uses visual aids such as PowerPoint/?	3.88	1.0	3.83	.92	3.21	1.1	26.85
9	Is an easy grader?	3.26	1.2	4.91	.32	3.04	1.2	233.58
10	Demonstrate good subject knowledge?	4.68	.54	4.88	.39	4.32	.92	38.23
11	Is enthusiastic in class?	4.53	.71	4.29	.84	4.09	.97	14.01
12	Is a specific gender?	1.59	1.1	1.67	1.2	2.04	1.5	6.53
13	Is flexible with students?	4.22	.81	3.67	.94	4.11	.95	23.19
14	Is available outside class?	4.55	.61	4.36	.68	4.05	.95	22.01
15	Assigns group projects?	3.01	1.3	3.41	.94	2.96	1.1	10.07
16	Has good verbal communication?	4.69	.63	4.65	.58	4.02	1.0	47.98
17	Makes class expectation clear?	4.70	.64	4.48	.71	3.74	1.1	79.63
18	Is a full-time professor?	3.12	1.5	3.00	1.2	2.95	1.3	**0.925**
19	Uses students' names?	4.17	.96	3.55	1.2	2.98	1.3	58.15
20	Uses good examples for content application?	4.55	.66	4.64	.55	4.23	.93	17.11
21	Is organized?	4.59	.71	4.60	.57	4.20	.91	18.58
22	Is concerned about students?	4.60	.61	4.38	.76	4.10	.94	22.08
23	Is able to command the class' attention without shouting?	4.53	.65	3.96	1.0	4.33	.81	27.48
24	Makes eye contact with students during the class?	4.43	.77	4.11	.90	3.42	1.1	64.29
25	Has a professional appearance?	4.12	1.0	3.78	1.2	3.36	1.3	23.1
26	Communicates class rules?	4.42	.72	4.51	.78	3.38	1.0	105.7

Table 2: The Results of ANOVA Procedure for Three Countries								
	When evaluating a professor, how important it is that the professor …	**USA**		**Chile**		**Jordan**		
#	**Trait**	**Mean**	**Std.**	**Mean**	**Std.**	**Mean**	**Std.**	**F***
27	Demonstrates the importance and significance of the subject matter?	4.61	.61	4.42	.73	3.84	1.1	48.54
28	Stimulates students to intellectual effort beyond that required by most courses?	4.06	.97	3.91	1.0	3.90	1.1	**1.54**
29	Explains course material clearly and concisely?	4.68	.68	4.78	.47	4.56	.71	5.468
30	Asks students to share ideas and experiences with others whose viewpoints differ from their own?	4.07	.98	3.70	.99	3.70	1.0	9.07
31	Involves students in "hand on" projects such as research, case studies, or "real life" activities?	4.16	.96	4.13	.90	3.33	1.2	43.50
32	Inspires students to set and achieve goals which really challenged them?	4.24	.79	4.20	.85	3.55	1.2	33.75
33	Provides access to course material via web sites?	3.79	1.1	4.12	.91	3.15	1.3	36.61
34	Seeks feedback from students on the course web site content?	3.64	1.2	3.45	1.1	2.99	1.2	15.49
35	Encourages student/faculty interaction outside of class time? (office visits, emails, chat rooms)	4.16	1.0	3.74	1.0	3.50	1.2	19.13
36	Schedules course work in ways which encourages students to stay up-to-date in their work?	4.43	.77	3.95	.91	3.80	1.0	28.87
37	Has charisma?	4.29	.84	4.02	1.1	3.17	1.4	57.40
38	Provides students access to frequently asked questions?	4.17	.93	4.00	1.0	3.92	1.0	3.46
39	Requests students to report on their progress in the class weekly?	3.24	1.3	3.27	1.1	2.74	1.2	10.60
40	Encourages students to use multiple resources to improve understanding?	4.13	.89	4.13	.84	3.29	1.1	50.33
41	Relates course material to real life situation?	4.50	.68	4.33	.88	3.89	1.0	24.88
42	Has a role of facilitator? ("try this")	4.26	.81	4.13	.91	3.89	1.1	7.08
43	Has a role of formal authority? ("now hear this")	4.01	1.1	3.84	1.0	1.97	1.3	189.91
44	Has a role of demonstrator? ("watch me, now")	4.38	.75	4.01	.95	3.89	1.0	16.71
45	Has a role of delegator? ("do it yourself")	3.64	1.2	3.29	1.1	2.59	1.3	40.83
*. Values in bold are not significant; the rest are significant at $p<0.05$.								

Since there were significant differences in students' perceptions, a post-test analysis using Bonferroni multiple comparisons was employed to see where the differences lie. The results are reported in Table 3.

Table 3: The Results of Multiple Comparisons Bonferroni			
Trait	(I) country	(J) country	Mean Difference (I-J)
v1	USA	Jordan	.381(*)
	Chile	Jordan	.349(*)
v2	USA	Jordan	1.000(*)
	Chile	Jordan	.802(*)
v3	USA	Chile	.154(*)
		Jordan	.280(*)
v4	USA	Chile	.397(*)
		Jordan	.909(*)
	Chile	Jordan	.512(*)
v5	USA	Jordan	.190(*)
	Chile	Jordan	.186(*)
v6	USA	Jordan	.500(*)
	Chile	Jordan	.625(*)
v7	USA	Chile	.475(*)
		Jordan	.459(*)
v8	USA	Jordan	.675(*)
	Chile	Jordan	.614(*)
v9	USA	Chile	-1.655(*)
	Chile	Jordan	1.870(*)
v10	USA	Chile	-.194(*)
		Jordan	.351(*)
	Chile	Jordan	.545(*)
v11	USA	Chile	.245(*)
		Jordan	.421(*)
v12	USA	Jordan	-.417(*)
	Chile	Jordan	-.374(*)
v13	USA	Chile	.530(*)
	Chile	Jordan	-.436(*)
v14	USA	Chile	.201(*)
		Jordan	.477(*)
	Chile	Jordan	.276(*)
v15	USA	Chile	-.397(*)
	Chile	Jordan	.444(*)

Table 3: The Results of Multiple Comparisons Bonferroni			
Trait	(I) country	(J) country	Mean Difference (I-J)
v16	USA	Jordan	.640(*)
	Chile	Jordan	.621(*)
v17	USA	Chile	.194(*)
		Jordan	.949(*)
	Chile	Jordan	.755(*)
v19	USA	Chile	.641(*)
		Jordan	1.182(*)
	Chile	Jordan	.540(*)
v20	USA	Jordan	.308(*)
	Chile	Jordan	.397(*)
v21	USA	Jordan	.370(*)
	Chile	Jordan	.399(*)
v22	USA	Chile	.230(*)
		Jordan	.492(*)
	Chile	Jordan	.262(*)
v23	USA	Chile	.556(*)
		Jordan	.194(*)
	Chile	Jordan	-.362(*)
v24	USA	Chile	.314(*)
		Jordan	1.005(*)
	Chile	Jordan	.691(*)
v25	USA	Chile	.369(*)
		Jordan	.779(*)
	Chile	Jordan	.411(*)
v26	USA	Jordan	1.030(*)
	Chile	Jordan	1.095(*)
v27	USA	Chile	.189(*)
		Jordan	.751(*)
	Chile	Jordan	.562(*)
v29	Chile	Jordan	.203(*)
v30	USA	Chile	.340(*)
		Jordan	.337(*)
v31	USA	Jordan	.824(*)
	Chile	Jordan	.784(*)

Table 3: The Results of Multiple Comparisons Bonferroni			
Trait	(I) country	(J) country	Mean Difference (I-J)
v32	USA	Jordan	.679(*)
	Chile	Jordan	.651(*)
v33	USA	Chile	-.304(*)
		Jordan	.655(*)
	Chile	Jordan	.959(*)
v34	USA	Jordan	.619(*)
	Chile	Jordan	.438(*)
v35	USA	Chile	.415(*)
		Jordan	.627(*)
v36	USA	Chile	.475(*)
		Jordan	.611(*)
v37	USA	Chile	.281(*)
		Jordan	1.118(*)
	Chile	Jordan	.837(*)
v38	USA	Jordan	.230(*)
v39	USA	Jordan	.471(*)
	Chile	Jordan	.469(*)
v40	USA	Jordan	.809(*)
	Chile	Jordan	.797(*)
v41	USA	Jordan	.581(*)
	Chile	Jordan	.429(*)
v42	USA	Jordan	.333(*)
v43	USA	Jordan	2.012(*)
	Chile	Jordan	1.850(*)
v44	USA	Chile	.373(*)
		Jordan	.468(*)
v45	USA	Chile	.390(*)
		Jordan	1.061(*)
	Chile	Jordan	.672(*)

* The mean difference is significant at the .05 level.

The Impact of the Mode of Delivering Instruction on Perceived Importance of Instructor Traits

The results of the paired sample t-test showed that there were significant differences in students' perceptions of the importance for instructor traits between face-to-face and online modes. As shown in Table 4, there were only 6 statements for the American sample, compared to 11statements for the Chilean sample, in which there were no significant differences in these perceptions for instructor traits between face-to-face and online methods of instruction. Thus, hypotheses H2a and H2b were partially supported. Data regarding online statements for Jordanian students were not available.

Table 4: The Results of Paired Sample T-test (USA and Chile)*

		USA			Chile		
		Mean		T	Mean		T
#	Trait	F-2-F	online		F-2-F	online	
1	Is courteous?	4.65	3.73	11.536	4.62	3.32	13.901
2	Is well published in her/his discipline?	4.03	3.71	5.037	3.86	4.09	-3.150
3	Is approachable in and out of class?	4.74	4.02	8.802	4.61	3.95	7.864
4	Gives rapid feedback on test/assignment?	4.52	4.50	**.274**	4.11	4.09	**.399**
5	Is respectful of students?	4.82	4.40	6.783	4.81	4.20	8.181
6	Stays current in her/his academic field?	4.64	4.49	3.511	4.75	4.70	**1.315**
7	Has a sense of humor?	4.19	3.20	11.653	3.70	2.62	12.755
8	Uses visual aids such as PowerPoint/?	3.88	3.59	3.440	3.83	3.96	**-1.559**
9	Is an easy grader?	3.26	3.27	**-.260**	4.91	4.86	2.211
10	Demonstrate good subject knowledge?	4.68	4.46	4.418	4.88	4.47	6.046
11	Is enthusiastic in class?	4.53	3.06	15.313	4.29	2.96	13.159
12	Is a specific gender?	1.59	1.59	**-.094**	1.67	1.54	2.116
13	Is flexible with students?	4.22	4.03	2.771	3.67	3.55	2.836
14	Is available outside class?	4.55	3.98	7.160	4.36	3.94	5.778
15	Assigns group projects?	3.01	2.31	9.235	3.41	2.86	7.594
16	Has good verbal communication?	4.69	3.22	15.251	4.65	3.03	15.738
17	Makes class expectation clear?	4.70	4.56	3.218	4.48	4.45	**.749**
18	Is a full-time professor?	3.12	2.83	4.222	3.00	2.64	4.991
19	Uses students' names?	4.17	3.33	9.878	3.55	3.00	6.344
20	Uses good examples for content application?	4.55	4.36	3.255	4.64	4.62	**.491**
21	Is organized?	4.59	4.41	3.429	4.60	4.47	2.484
22	Is concerned about students?	4.60	4.32	5.159	4.38	3.96	7.716

Table 4: The Results of Paired Sample T-test (USA and Chile)*							
		USA			Chile		
		Mean		T	Mean		T
#	Trait	F-2-F	online		F-2-F	online	
23	Is able to command the class' attention without shouting?	4.53	2.72	17.708	3.96	2.22	16.170
24	Makes eye contact with students during the class?	4.43	2.20	21.941	4.11	2.09	18.191
25	Has a professional appearance?	4.12	2.34	17.038	3.78	2.64	11.389
26	Communicates class rules?	4.42	3.76	8.501	4.51	4.32	3.494
27	Demonstrates the importance and significance of the subject matter?	4.61	4.35	5.338	4.42	4.34	2.156
28	Stimulates students to intellectual effort beyond that required by most courses?	4.06	3.90	2.498	3.91	3.71	3.213
29	Explains course material clearly and concisely?	4.68	4.51	3.357	4.78	4.71	**1.497**
30	Asks students to share ideas and experiences with others whose viewpoints differ from their own?	4.07	3.47	8.576	3.70	3.24	6.140
31	Involves students in "hand on" projects such as research, case studies, or "real life" activities?	4.16	3.48	9.456	4.13	3.92	4.459
32	Inspires students to set and achieve goals which really challenged them?	4.24	3.90	6.195	4.20	3.97	4.425
33	Provides access to course material via web sites?	3.79	4.54	-8.350	4.12	4.69	-9.763
34	Seeks feedback from students on the course web site content?	3.64	4.42	-8.435	3.45	4.24	-10.121
35	Encourages student/faculty interaction outside of class time? (office visits, emails, chat rooms)	4.16	3.92	3.309	3.74	3.58	2.257
36	Schedules course work in ways which encourages students to stay up-to-date in their work?	4.43	4.33	**1.810**	3.95	3.94	**.097**
37	Has charisma?	4.29	3.25	12.091	4.02	2.88	11.318
38	Provides students access to frequently asked questions?	4.17	4.30	**-1.656**	4.00	4.02	**-.506**
39	Requests students to report on their progress in the class weekly?	3.24	3.57	-4.147	3.27	3.39	**-1.874**
40	Encourages students to use multiple resources to improve understanding?	4.13	4.07	**1.122**	4.13	4.12	**.192**
41	Relates course material to real life situation?	4.50	4.22	4.592	4.33	4.15	2.932
42	Has a role of facilitator? ("try this")	4.26	4.01	4.589	4.13	4.02	**1.778**
43	Has a role of formal authority? ("now hear this")	4.01	3.35	8.647	3.84	3.09	8.571
44	Has a role of demonstrator? ("watch me, now")	4.38	3.51	10.272	4.01	3.67	5.356
45	Has a role of delegator? ("do it yourself")	3.64	3.80	-2.707	3.29	3.04	3.431
*. T- Values that are not significant were marked in bold, the rest of t vales are significant at p<0.05							

The Impact of Demographic Variables on Student Perceptions

The results of ANOVA procedure revealed that there were significant differences in perceived importance of instructor traits between male and female students for 14 statements, 11 statements, and 4 statements for American, Jordanian, and Chilean samples, respectively. With respect to the age factor, there were 3 statements for the American sample, compared to 2 statements for the Chilean, and one statement for the Jordanian sample, in which there were significant differences in perceived importance of instructor traits between traditional and non-traditional students. Academic disciplines had impact on the American and Jordanian students. There were 6 statements for the American students, compared to 8 statements for the Jordanian students, in which there were significant differences in perceived importance of instructor traits among business, social sciences, and "hard" sciences. Student GPA impacted one statement for American students, 2 statements for Jordanian students, and 5 statements for Chilean students. With respect to student classifications, there were significant differences in 6 statements for American and Jordanian samples and 8 statements for the Chilean sample. Student learning styles impacted American students in 5 statements, Jordanian students in 2 statements, and Chilean students in one statement. Finally, online course experience had impact on American students in 2 statements, Jordanian students in 5 statements, and Chilean students in one statement. Based on the above results, hypotheses H3a-H3g were partially supported.

Table 5: The Results for the Impact of Demographic Factors (P-value for ANOVA)

	When evaluating a professor, how important it is that the professor …	Gender			Age			Educational Background			GPA		
#	Trait	USA	Chile	Jordan	USA	Chile	Jordan	USA	Chile	Jordan	USA	Chile	Jordan
1	Is courteous?		0.01	0.017									
2	Is well published in her/his discipline?		0.042										
3	Is approachable in and out of class?	0.01								0.041			
4	Gives rapid feedback on test/assignment?									0.014			
5	Is respectful of students?												
6	Stays current in her/his academic field?	0.04											
7	Has a sense of humor?												0.009
8	Uses visual aids such as PowerPoint/?			0.001				0.016					
9	Is an easy grader?	0.001		0.012	0.011			0.001			0.021		
10	Demonstrates good subject knowledge?	0.027											
11	Is enthusiastic in class?	0.013		0.013		0.009							
12	Is a specific gender?	0.014											
13	Is flexible with students?		0.041	0.008				0.029					
14	Is available outside class?	0.011											
15	Assigns group projects?			0.018				0.001					

Table 5: The Results for the Impact of Demographic Factors (P-value for ANOVA)													
	When evaluating a professor, how important it is that the professor …	Gender			Age			Educational Background			GPA		
#	Trait	USA	Chile	Jordan	USA	Chile	Jordan	USA	Chile	Jordan	USA	Chile	Jordan
16	Has good verbal communication?	0.042								0.001			
17	Makes class expectation clear?												
18	Is a full-time professor?	0.002				0.012						0.047	
19	Uses students' names?			0.022						0.022			
20	Uses good examples for content application?	0.005										0.004	
21	Is organized?			0.001								0.030	
22	Is concerned about students?												
23	Is able to command the class' attention without shouting?	0.043											
24	Makes eye contact with students during the class?									0.011			
25	Has a professional appearance?							0.019					
26	Communicates class rules?									0.028			
27	Demonstrates the importance and significance of the subject matter?												
28	Stimulates students to intellectual effort beyond that required by most courses?											0.05	
29	Explains course material clearly and concisely?	0.012											
30	Asks students to share ideas and experiences with others whose viewpoints differ from their own?												
31	Involves students in "hand on" projects such as research, case studies, or "real life" activities?												
32	Inspires students to set and achieve goals which really challenged them?												
33	Provides access to course material via web sites?			0.042								0.015	
34	Seeks feedback from students on the course web site content?												
35	Encourages student/faculty interaction outside of class time? (office visits, emails, chat rooms)												
36	Schedules course work in ways which encourages students to stay up-to-date in their work?			0.025	0.026		0.038	0.039		0.028			
37	Has charisma?			0.005									

Table 5: The Results for the Impact of Demographic Factors (P-value for ANOVA)													
	When evaluating a professor, how important it is that the professor …	Gender			Age			Educational Background			GPA		
#	Trait	USA	Chile	Jordan	USA	Chile	Jordan	USA	Chile	Jordan	USA	Chile	Jordan
38	Provides students access to frequently asked questions?												
39	Requests students to report on their progress in the class weekly?	0.001											
40	Encourages students to use multiple resources to improve understanding?												
41	Relates course material to real life situation?									0.044			
42	Has a role of facilitator? (“try this”)	0.002											
43	Has a role of formal authority? (“now hear this”)		0.038		0.045								0.027
44	Has a role of demonstrator? (“watch me, now”)												
45	Has a role of delegator? (“do it yourself”)												

Table 5: The Results for the Impact of Demographic Factors (P-value for ANOVA) Continued										
	When evaluating a professor, how important it is that the professor …	Student classification			Learning Style			Prior Experience of online		
#	Trait	USA	Chile	Jordan	USA	Chile	Jordan	USA	Chile	Jordan
1	Is courteous?									
2	Is well published in her/his discipline?									
3	Is approachable in and out of class?	0.019								
4	Gives rapid feedback on test/assignment?	0.015								
5	Is respectful of students?									
6	Stays current in her/his academic field?									0.046
7	Has a sense of humor?							0.041		
8	Uses visual aids such as PowerPoint/?		0.001		0.012					
9	Is an easy grader?				0.02					
10	Demonstrates good subject knowledge?									
11	Is enthusiastic in class?	0.012								
12	Is a specific gender?									
13	Is flexible with students?	0.022								
14	Is available outside class?	0.013	0.027							
15	Assigns group projects?									

Table 5: The Results for the Impact of Demographic Factors (P-value for ANOVA) Continued										
	When evaluating a professor, how important it is that the professor …	Student classification			Learning Style			Prior Experience of online		
#	Trait	USA	Chile	Jordan	USA	Chile	Jordan	USA	Chile	Jordan
16	Has good verbal communication?			0.002						0.005
17	Makes class expectation clear?				0.003					
18	Is a full-time professor?									
19	Uses students' names?			0.004						
20	Uses good examples for content application?									
21	Is organized?			0.037						
22	Is concerned about students?									
23	Is able to command the class' attention without shouting?									
24	Makes eye contact with students during the class?		0.044							
25	Has a professional appearance?						0.013			
26	Communicates class rules?									
27	Demonstrates the importance and significance of the subject matter?			0.030						0.017
28	Stimulates students to intellectual effort beyond that required by most courses?	0.013								
29	Explains course material clearly and concisely?						0.001			
30	Asks students to share ideas and experiences with others whose viewpoints differ from their own?								0.042	0.001
31	Involves students in "hand on" projects such as research, case studies, or "real life" activities?				0.001			0.034		
32	Inspires students to set and achieve goals which really challenged them?		0.033							
33	Provides access to course material via web sites?			0.008	0.048					
34	Seeks feedback from students on the course web site content?									0.006
35	Encourages student/faculty interaction outside of class time? (office visits, emails, chat rooms)									
36	Schedules course work in ways which encourages students to stay up-to-date in their work?		0.008							
37	Has charisma?									
38	Provides students access to frequently asked questions?		0.016							
	Requests students to report on their progress in					0.038				

Table 5: The Results for the Impact of Demographic Factors (P-value for ANOVA) Continued										
	When evaluating a professor, how important it is that the professor …	Student classification			Learning Style			Prior Experience of online		
#	Trait	USA	Chile	Jordan	USA	Chile	Jordan	USA	Chile	Jordan
39	the class weekly?									
40	Encourages students to use multiple resources to improve understanding?		0.011							
41	Relates course material to real life situation?									
42	Has a role of facilitator? (“try this”)									
43	Has a role of formal authority? (“now hear this”)		0.021							
44	Has a role of demonstrator? (“watch me, now”)									
45	Has a role of delegator? (“do it yourself”)									

DISCUSSION

A Comparison of Student Responses

Based on the information reported in Tables 2 and 3, Figure 2 was created to discuss the results. It is clear that students in the three countries agreed with 37 statements (traits) out of 45 statements used in the study. This indicated that regardless of students’ backgrounds and cultures, these traits were either important, not important, or neither.

Thirty-Four of these 37 traits were considered by students to be important to very important. Even though students significantly differed on the extent of agreement for the importance of these traits, it was evident that it was vital for instructors to acquire and maintain such traits. Based on the factor analysis, these traits could be classified into 5 main categories: (traits related to instructor 1) personality (traits # 1, 3, 5, 7, 13, 22, 25 and 37); 2) communication skills (traits # 16, 24); 3) style of class management and evaluation of student performance (traits # 4, 14, 17, 21, 23, 26, 27, 38); 4) qualification and credential (traits 6 and 10); and 5) teaching style (traits # 8, 11, 20, 29, 30, 31, 32, 33, 35, 36, 40, 41, 42, 44). Figure 3 provides a comparison among the three countries with respect to these five categories of traits. On the other hand, one can classify traits where students held significantly different opinions on their importance into 4 categories: traits related to instructor 1) qualifications and credentials (trait # 2); 2) evaluation of student performance (trait # 9); 3) teaching style (traits # 15, 34, 39, 43, and 45); and 4) communication skills (trait # 19), as shown in Figure 4.

As shown in Table 6, there were disagreements among respondents on the top five traits of effective instructors. While American and Jordanian students believed "respectful of students" was the most important trait, Chilean students felt that "good subject knowledge" was most relevant. As related to the second most important trait, American students identified "approachable in and out of class," and Jordanian students considered it to be "explaining course material clearly and concisely." Finally, Chilean students identified "respectful of students." The third most relevant traits were "clear class expectations" by Americans, "approachable in and out of class" by Jordanians, and "explaining course material clearly and concisely" by

Chileans. While American students indicated "good verbal communication" as the fourth most important trait, Jordanian and Chilean students considered it to be "good subject knowledge" and "current in his/her academic field," respectively. Finally, based on responses from American students, the fifth most relevant traits were "good subject knowledge" and "explaining course material clearly and concisely." Jordanian students indicated "is courteous" to be ranked similarly; likewise, Chilean students considered "good verbal communication" to be of comparatively lesser importance.

Figure 2: A Summary of the Results

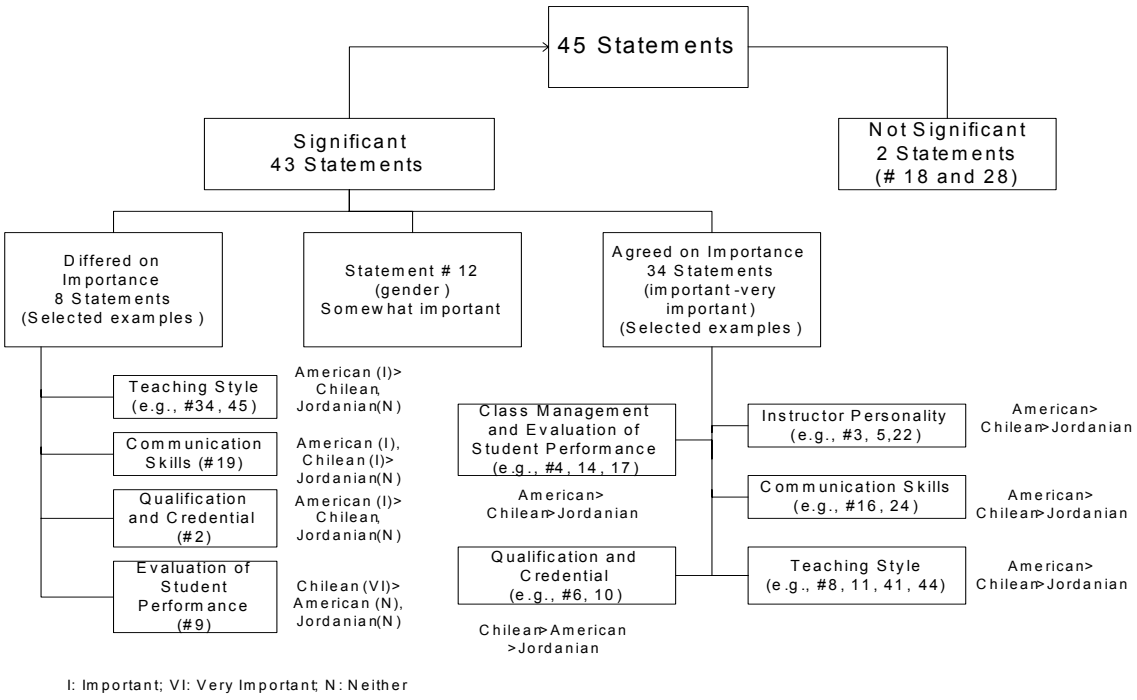


Figure 3: A Three Country Comparison of Significant Differences (Same Direction)

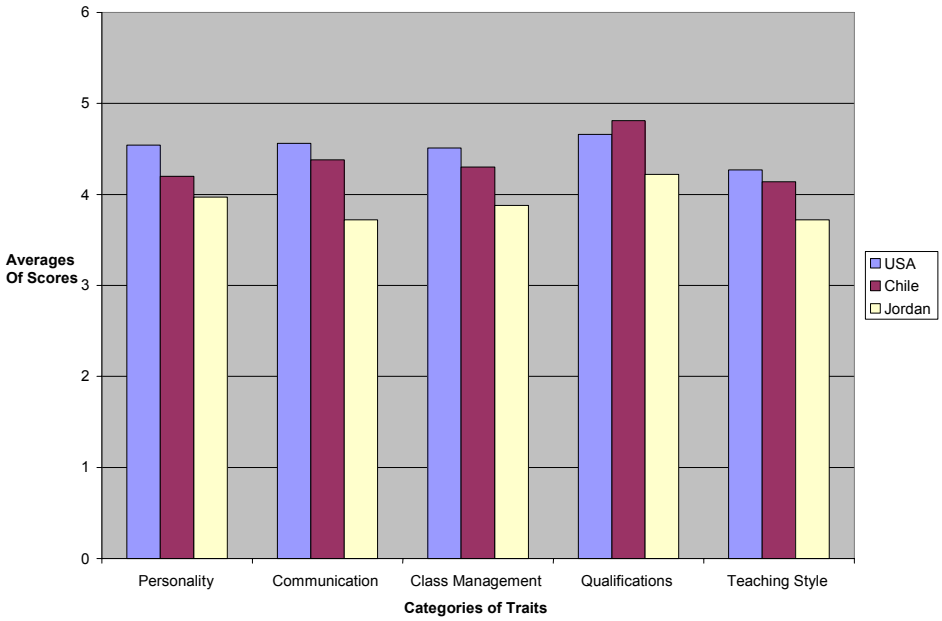


Figure 4: A Three Country Comparison of Significant Differences (Different Direction)

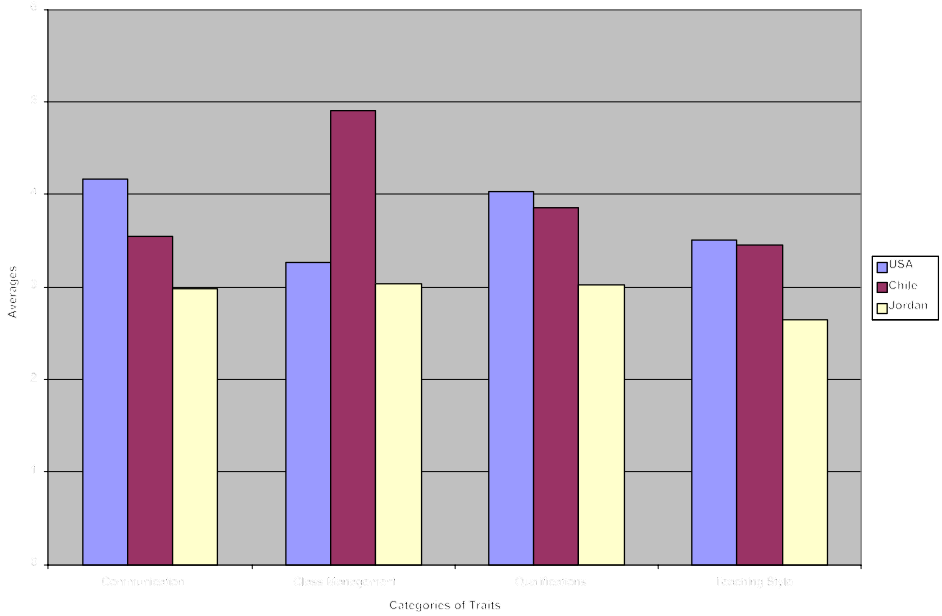


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Table 6 Student Responses in a Descending Order (USA)								
	When evaluating a professor, how important it is that the professor …	USA		Chile		Jordan		
#	Trait	Mean	Std.	Mean	Std.	Mean	Std.	F
5	Is respectful of students?	4.82	.46	4.81	.54	4.62	.77	6.85
3	Is approachable in and out of class?	4.74	.50	4.61	.60	4.45	.86	9.94
17	Makes class expectation clear?	4.70	.64	4.48	.71	3.74	1.1	79.63
16	Has good verbal communication?	4.69	.63	4.65	.58	4.02	1.0	47.98
10	Demonstrates good subject knowledge?	4.68	.54	4.88	.39	4.32	.92	38.23
29	Explains course material clearly and concisely?	4.68	.68	4.78	.47	4.56	.71	5.468
1	Is courteous?	4.65	.64	4.62	.73	4.24	1.1	13.69*
6	Stays current in her/his academic field?	4.64	.57	4.75	.54	4.12	.98	44.51
27	Demonstrates the importance and significance of the subject matter?	4.61	.61	4.42	.73	3.84	1.1	48.54
22	Is concerned about students?	4.60	.61	4.38	.76	4.10	.94	22.08
21	Is organized?	4.59	.71	4.60	.57	4.20	.91	18.58
14	Is available outside class?	4.55	.61	4.36	.68	4.05	.95	22.01
20	Uses good examples for content application?	4.55	.66	4.64	.55	4.23	.93	17.11
11	Is enthusiastic in class?	4.53	.71	4.29	.84	4.09	.97	14.01
23	Is able to command the class' attention without shouting?	4.53	.65	3.96	1.0	4.33	.81	27.48
4	Gives rapid feedback on test/assignment?	4.52	.73	4.11	.89	3.61	1.2	51.91
41	Relates course material to real life situation?	4.50	.68	4.33	.88	3.89	1.0	24.88
24	Makes eye contact with students during the class?	4.43	.77	4.11	.90	3.42	1.1	64.29
36	Schedules course work in ways which encourages students to stay up-to-date in their work?	4.43	.77	3.95	.91	3.80	1.0	28.87
26	Communicates class rules?	4.42	.72	4.51	.78	3.38	1.0	105.7
44	Has a role of demonstrator? ("watch me, now")	4.38	.75	4.01	.95	3.89	1.0	16.71
37	Has charisma?	4.29	.84	4.02	1.1	3.17	1.4	57.40
42	Has a role of facilitator? ("try this")	4.26	.81	4.13	.91	3.89	1.1	7.08
32	Inspires students to set and achieve goals which really challenged them?	4.24	.79	4.20	.85	3.55	1.2	33.75
13	Is flexible with students?	4.22	.81	3.67	.94	4.11	.95	23.19
7	Has a sense of humor?	4.19	.93	3.70	1.1	3.72	1.1	16.35
19	Uses students' names?	4.17	.96	3.55	1.2	2.98	1.3	58.15
38	Provides students access to frequently asked questions?	4.17	.93	4.00	1.0	3.92	1.0	3.46
31	Involves students in "hand on" projects such as research, case studies, or "real life" activities?	4.16	.96	4.13	.90	3.33	1.2	43.50

Table 6 Student Responses in a Descending Order (USA)								
	When evaluating a professor, how important it is that the professor …	USA		Chile		Jordan		
#	Trait	Mean	Std.	Mean	Std.	Mean	Std.	F
35	Encourages student/faculty interaction outside of class time? (office visits, emails, chat rooms)	4.16	1.0	3.74	1.0	3.50	1.2	19.13
40	Encourages students to use multiple resources to improve understanding?	4.13	.89	4.13	.84	3.29	1.1	50.33
25	Has a professional appearance?	4.12	1.0	3.78	1.2	3.36	1.3	23.1
30	Asks students to share ideas and experiences with others whose viewpoints differ from their own?	4.07	.98	3.70	.99	3.70	1.0	9.07
28	Stimulates students to intellectual effort beyond that required by most courses?	4.06	.97	3.91	1.0	3.90	1.1	**1.54**
2	Is well published in her/his discipline?	4.03	1.0	3.86	1.0	3.02	1.1	49.55
43	Has a role of formal authority? (“now hear this”)	4.01	1.1	3.84	1.0	1.97	1.3	189.91
8	Uses visual aids such as PowerPoint/?	3.88	1.0	3.83	.92	3.21	1.1	26.85
33	Provides access to course material via web sites?	3.79	1.1	4.12	.91	3.15	1.3	36.61
34	Seeks feedback from students on the course web site content?	3.64	1.2	3.45	1.1	2.99	1.2	15.49
45	Has a role of delegator? (“do it yourself”)	3.64	1.2	3.29	1.1	2.59	1.3	40.83
9	Is an easy grader?	3.26	1.2	4.91	.32	3.04	1.2	233.58
39	Requests students to report on their progress in the class weekly?	3.24	1.3	3.27	1.1	2.74	1.2	10.60
18	Is a full-time professor?	3.12	1.5	3.00	1.2	2.95	1.3	**0.925**
15	Assigns group projects?	3.01	1.3	3.41	.94	2.96	1.1	10.07
12	Is a specific gender?	1.59	1.1	1.67	1.2	2.04	1.5	6.53

The Impact of the Cultural Factor on Students' Differences

As shown in Table 2, American students, compared to Chilean and Jordanian students, felt more strongly that the instructor should be courteous, approachable, respectful to students, charismatic, flexible with students, concerned about students, and also have a sense of humor as well as a professional appearance. One could ascribe these findings to differences in cultural attributes among the three countries, especially individualism and power distance because these two cultural dimensions could affect personality traits. For example, American students had a high score on the individualism index (91), compared to 38 and 23 for Jordanian and Chilean students, respectively. Additionally, the American had a lower score on power distance index (40), compared to students from Jordan (80) and Chile (60).

American students, compared to Chilean and Jordanian students, felt more strongly about the importance of instructor communication skills, such as the verbal communication and making eye contact

with students. Moreover, they felt more strongly about the importance of instructor traits related to class management and evaluation of student performance (such as giving rapid feedback on tests and assignments, being available outside the class, making class expectations clear, being able to control the class, communicating class rules, and demonstrating importance of the subject matter). However, Chilean students, compared to American and Jordanian students, felt more strongly about the importance of instructor qualifications (traits such as staying current in the academic field and demonstrating good subject knowledge). With respect to traits related to teaching style, American and Chilean students, compared to Jordanian students, felt more strongly about the importance of these traits. For example, they felt that using visual aids, involving students in "hands on" projects, inspiring students to set and achieve goals, encouraging students to use multiple resources to improve understanding, and relating course material to real life situations were important traits.

There were significant differences among students in the three countries with respect to the importance of traits related to instructor communication skills, class management, professional qualifications, and teaching style. As shown in Figure 2, American and Chilean students felt more strongly about the importance of having instructors with good publication records. On the other hand, Jordanian students felt neutral about the same issue. With respect to class management and student performance, Chilean students felt that instructors should be easy graders; American and Jordanian students were neutral on this issue. With respect to teaching style, Chilean students felt that "assigning group projects" was important, while American and Jordanian students were neutral. American and Chilean students believed that seeking feedback from students on the content of the course on the website and requesting students to report weekly on their progress in the class were important. On the other hand, Jordanians felt neutral about it (power distance). Regarding class management traits, American and Chilean students felt that it was important for instructors to have roles of formal authority and delegator. On the other hand, Jordanian students felt that these roles were somewhat important (power distance).

With respect to instructor communication skills, American and Chilean students felt that it was important that instructors use student names in the class, while Jordanian students felt neutral. Instructor gender was not an issue for students in the three countries; however, American students, compared to Jordanians, were more in disagreement with statement #12 that instructor gender was not important. While American and Chilean students felt gender was not important, Jordanian students felt that gender was "somewhat not important." One explanation for this could involve the masculinity cultural dimension.

The Importance of Instructor Traits in the Face-to-Face and Online Modes

In the USA and Chile, students felt the importance of many traits depended on the instruction delivery mode (face-to-face or online). On the other hand, there were traits in which the importance did not depend on the mode of instruction. As shown in Table 4, there were 6 statements for the American sample, compared to 11 statements for the Chilean sample, in which there was no significant difference between student responses in face-to-face and online settings. In both countries, students felt that it was important, regardless of the instruction mode used, that instructors gave rapid feedback on test/assignments, scheduled course work in a way that encouraged them to stay up-to-date with their work, and encouraged use of multiple resources for improved understanding. There was only one trait "is a specific gender" that was perceived by students as not important regardless of the instruction mode. On the other hand, there were 39 statements in the

American sample, compared to 34 statements in the Chilean sample, in which there were significant differences between student responses in face-to-face and online settings. In most cases, it should be noted that some of these differences were in the extent of agreement. In both countries, for example, students felt that it was more important in the face-to-face mode for instructors to be approachable in and out of the class and respectful of students.

However, there were few traits in which student responses significantly differed between face-to-face and online modes. For example, students felt that it was important to very important in the face-to-face mode for instructors to have a sense of humor, be enthusiastic in the class, and have good verbal communication. In the on-line mode, students felt these traits were not important. It should be noted that students in both countries felt that it was important in the face-to-face mode that instructors play the role of "demonstrator," while it was important to play the role of "facilitator" in the online mode. Instructors need to pay more attention to some traits while teaching face-to-face and to other traits when teaching online courses. It should be noted that there was no significant difference in student responses between American and Chilean students in comparing the importance of instructor traits in the face-to-face and online modes.

The Impact of Demographic Factors on Students' Responses

Among the demographic factors, gender was the most significant one that influenced students' responses in the USA and Jordan. Student classification was the most significant factor that influenced Chilean student responses. On the other hand, age, grade-point average, learning style, and prior experience with online learning were the least influential factors.

There were significant differences in traits related to teaching style and class management between American male and female students. For example, American male students, compared to their female counterparts, felt more strongly that the instructor should be an easy grader and request students to report weekly on their progress in the class. On the other hand, female students felt more strongly that the instructor should be available outside class and able to control the class. Jordanian female students felt more strongly that the instructor should be an easy grader.

With respect to traits related to teaching style, American female students felt more strongly that the instructor should be enthusiastic in the class, use good examples, explain course material clearly, and assume the role of facilitator. Jordanian female students felt more strongly that instructors should be enthusiastic, assign group projects, use visual aids, and schedule course work in such a way that encouraged students to stay up to date. With respect to personality traits, Jordanian female students felt more strongly that the instructor should be courteous, flexible with students, and have charisma.

The second most influential factor was student classification. Chilean students at lower class levels (freshmen and sophomore), compared to upper-class level (junior and senior), felt that the instructor should use visual aids, inspire students to set and achieve challenging goals, schedule course work in such a way that encouraged students to stay up to date in their work, encourage students to use multiple resources to improve understanding, and exert formal authority.

CONCLUSIONS

Numerous factors influence student perceptions of effective instruction. These factors can involve culture, gender, instructor traits, and demographics. Even though various country-specific differences existed, some degree of consistency was apparent in viewpoints toward commonly-held beliefs related to instructor effectiveness. However, cultural dimensions did influence perceptions of student respondents and certainly could not be discounted in terms of importance. As related to valued instructor traits, the medium of delivery (face-to-face or online instruction) did not appear to reflect many differences among students in the various countries. However, within each country sample there were significant differences in student responses between face-to-face and online instruction as had been anticipated, since these mediums for delivery of instruction are sometimes thought to be appealing to different types of learners.

Some variables, such as grade-point average, age, and learning style, were not major factors influencing student perceptions. Given commonly-held viewpoints, especially as American students were compared to those in the other countries, this outcome was somewhat surprising. Yet, it was not surprising that differing perceptions were held by American students related to variables such as the relevance of communication skills and view toward formal authority.

In summary, the merit of understanding student perceptions toward instructor traits certainly cannot be underestimated and likely might become even more critical with evolving changes in instructional methodology as well as advances in technology. As might be anticipated, cultural dimensions must be recognized, as individuals certainly are conditioned by environmental factors and behavioral expectations. Nevertheless, numerous perceptions toward instructor traits appeared that might customarily be expected, regardless of the part of the world in which learners resided.

LIMITATIONS AND FUTURE RESEARCH

This study is exploratory in nature and thus has several limitations that should be recognized. The use of self-report scales to measure student perception raises the possibility of common-method variance. Furthermore, the relatively small size of samples certainly should be noted. Future research might include the investigation of student perception of instructor traits in private and public schools and also include a considerably-larger number of respondents.

In addition, it could be interesting to design a follow-up study to gain insight into perceptions held by students several years after their college graduation. Furthermore, a subsequent study might involve respondents from a greater number of countries having differing cultural characteristics to determine their perceptions toward various instructor traits.

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