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ACADEMY OF EDUCATIONAL LEADERSHIP JOURNAL

Michael Shurden
Editor
Lander University

Nancy Niles
Editor
Lander University

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Michael Shurden
and
Nancy Niles
Editors

THE ART AND SCIENCE OF FOSTERING ENGAGED LEARNING

Mark R. Young, Winona State University

ABSTRACT

Engaged learning and engaged learners are increasingly cited as critical factors in producing significant learning. The purpose of this article is to emphasize curricular engagement as an important aspect of instructional design. To achieve this goal, this article reviews the definition and measurement of academic engagement and examines environmental antecedents that foster or discourage each of the dimensions of engagement. First, we present a literature review of academic engagement, in addition to an overview of the academic learning environment utilizing self-determination theory and Karasek's (1979) demand/control/support model of job context. Next, we explore the empirical relationships between environmental effects, engagement, and academic achievement by presenting a study utilizing secondary data collected at the university level. Approximately 2,500 student respondents provided data for this analysis. Results support the hypothesis that curricular engagement has a positive effect on GPA. Role overload was found to moderate academic achievement while academic engagement was found to mediate perceived competence's effect on performance. The learning environment consisting of student autonomy, instruction support and demanding learning tasks all fostered conditions for academic engagement. These findings lead to recommendations for developing learning environments and pedagogies designed to foster increased levels of engagement. Five principles for fostering curricular engagement are offered to enhance teaching and learning: 1) empower students, 2) provide support resources, 3) create demanding learning tasks, 4) beware of role overload, and 5) utilize multiple targets of engagement.

INTRODUCTION

Academic engagement is a meta-construct which integrates theories of learning and motivation into a useful model that extends our thinking about ways in which teaching and learning may be enhanced. Engagement has been recognized as a crucial issue in learning and academic success at the university level (National Survey of Student Engagement, 2006; Carnegie Curricular Engagement Classification, 2006), at the program level (AACSB International Standards 13 & 14, 2006), as well as at the individual student level (Pintrich & Schrauben, 1992). This concept is important because empirical evidence suggests engagement is related to critical thinking, persistence, grades (Carini, et al., 2006; Kuh et al., 2007), dropout rates (Ekstrom, et al.,1986), as well as binge drinking and drug abuse (Magna Publications,

2005). Representing a possible antidote for passive, disaffected students who rely on short-term surface learning strategies, display little personal initiative, and who lack enthusiasm for learning, engagement is thought to be responsive to environmental changes (Finn & Rock, 1997). Academically engaged students are characterized by positive conduct, class participation, involvement in the learning task, high effort and persistence, positive attitudes, and self-regulation of their learning. Thus, understanding how students think, feel, and behave in response to curricular interventions could provide guiding principles for creating engaging learning environments and developing more effective pedagogies.

This article reviews the definition and measurement of academic engagement and examines environmental antecedents that foster or discourage each of the dimensions of engagement. First, we present a literature review of academic engagement, in addition to an overview of the academic learning environment utilizing self-determination theory and Karasek's (1979) demand/control/support model of job context. Next, we explore the empirical relationships between environmental effects, engagement, and academic achievement by presenting a study utilizing secondary data collected at the university level. These findings lead to recommendations for developing learning environments and pedagogies designed to foster increased levels of engagement.

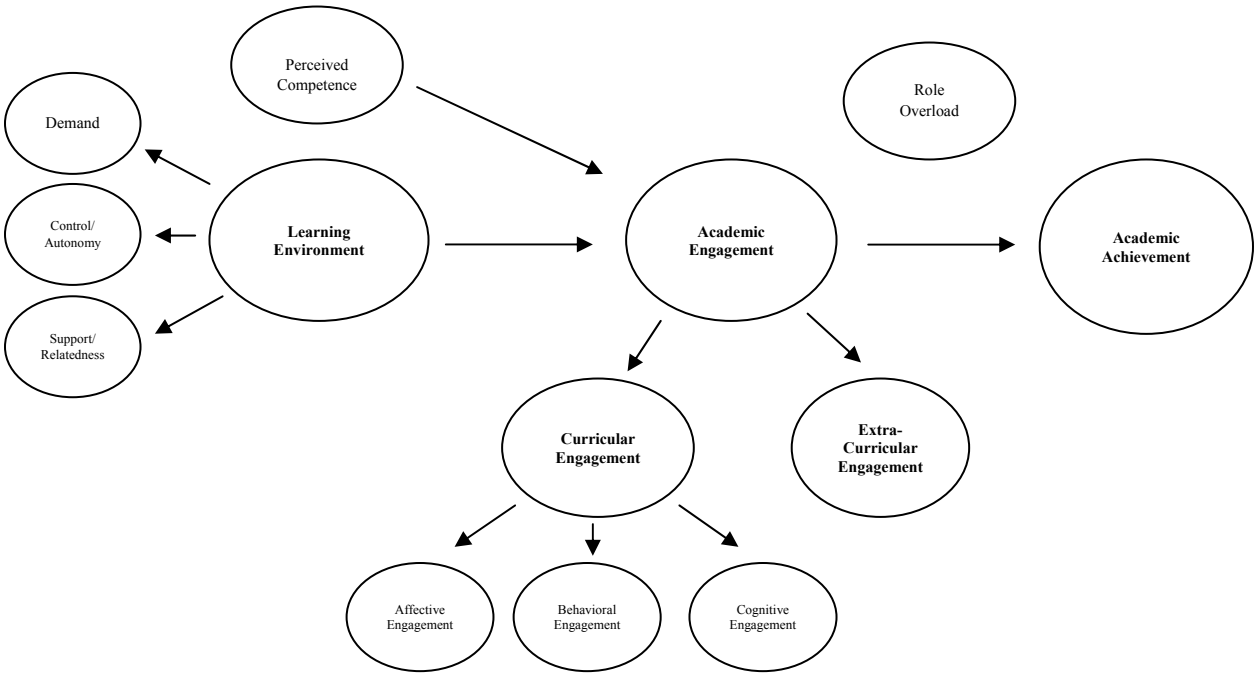
CONCEPTUALIZATION OF ACADEMIC ENGAGEMENT

At the broadest level of academic engagement towards school, or education in general, both curricular and extra-curricular objects should be included and measured. However, when focusing on the classroom or on teaching interventions, specifying the relevant curricular object(s) of engagement is necessary for a clearer understanding of the primary effects on engagement and subsequently on learning. Therefore, curricular engagement refers to engagement towards targets or objects related to teaching and learning pedagogies; whereas, extra-curricular engagement refers to targets of engagement normally outside the classroom, such as student clubs, athletics, musical events, etc. The role extra-curricular engagement might play in the development of students' professional business capabilities is yet to be fully understood; however, findings reported by Peltier et al. (1995 & 2008) suggest significant opportunity for professional skill development. The focus of the secondary data analysis in this investigation is on the classroom aspect or curricular engagement as depicted in Figure 1, and therefore, we do not elaborate on extra-curricular engagement in this article.

Curricular engagement in school refers to the intensity and emotional quality of students' involvement in initiating and carrying out learning activities (Skinner, 1991). This definition incorporates two distinct perspectives recognizing both the affective or emotional component of engagement as well as the behavioral aspect of engagement. *Affective engagement* refers to students' emotional reactions towards the learning task, the content, and/or the learning context (Skinner & Belmont, 1993) as well as identification with school (Voelkl, 1997) and the liking or

disliking of school (Epstein & McPartland, 1976). The second perspective, *behavioral engagement*, represents the effort, attention and persistence of performing various behaviors associated with the learning activities such as attendance, rule following, attention, and participation. The National Survey of Student Engagement (Kuh et al., 2007) primarily focuses on this aspect of engagement by measuring the frequency of students performing certain educationally purposeful activities.

FIGURE 1: Academic Engagement



An additional perspective, and third component of engagement, includes students' use of cognitive and self-regulatory strategies to monitor and guide their learning (Pintrich & De Groot, 1990). *Cognitive engagement* accounts for the mental effort and psychological investment directed toward comprehending and mastering the academic task (Wehlage et al., 1989). Thus, conceptualizing engagement as multidimensional with affective, behavioral, and cognitive dimensions creates a nomological net that has greater potential to specify antecedents and outcomes of engagement as well as examine the interactions or synergy among the three dimensions. Fredricks et al. (2004) provide a comprehensive review of the engagement literature and suggest that the source of engagement must be specified in order to understand the effects of instructional intervention strategies.

To specify the source of curricular engagement, Bowen (2005) provides a taxonomy of four sources of engagement and relates each to common pedagogical initiatives. 1) *Engagement with the learning process* itself commonly involves Active learning pedagogies such as class discussion, debate, think-pair-share activities, role-playing, short written exercises, and polling students with electronic clickers (Bonwell & Eison, 1991). 2) E*ngagement with the subject matter of study* may represent a unit of study, a course, or even the discipline of study. Stimulating engagement in the subject matter through field or laboratory experiences, rigorous case study, computer simulations, etc., are typically referred to as experiential learning (Kolb, 1984). 3) *Engagement with the context,* in which the subject of study is situated, is often accomplished with multidisciplinary learning utilizing significant problem solving requiring perspectives (finance, marketing, management, etc.) from multiple disciplines typical of many integrative business capstone courses. 4) E*ngagement with the human condition* incorporates the social, cultural, and civic dimensions common in service learning pedagogy involving a cycle of action and reflection applied to community problems (Eyler & Giles, 1999); see Petkus (2000) and Hagenbuch (2006) for marketing examples.

While these activities are effective in engaging students in the learning process, their affect on actual learning is less clear. Kirschner, Sweller and Clark (2006) conclude that fifty years of empirical data does not support active learning methods used early in the learning process. They suggest students placed in unguided learning situations without some initial instruction and follow-up can actually leave learners less competent than when they began the activity. Trosset (1998) reports that students felt the purpose of class discussion was to defend their already established views and convince others of them, rather than to learn. Engagement in the learning process seems like a necessary, but not sufficient condition for significant learning.

Clearly, the source of engagement (learning process, object of study, context, or human condition) needs to be specified if the effect of the learning intervention is to be determined. Therefore, we conceptualize curricular engagement as the affective, behavioral, and cognitive involvement towards one or more specified sources of engagement.

THE EFFECTS OF CURRICULAR ENGAGEMENT ON ACADEMIC ACHIEVEMENT

Engagement has been empirically related to achievement test scores and grades (Skinner et al., 1990; Kuh et al., 2007; Carini et al., 2006). Fredricks et al. (2004) conclude their literature review on school engagement stating that evidence indicates that behavioral engagement is correlated with higher achievement across various samples and ages. In addition, they found evidence of a correlation between cognitive engagement and affective engagement with achievement, but it varies depending on how achievement is assessed. Thus, we hypothesize:

H1: Curricular engagement will have a positive effect on academic achievement.

According to the National Survey of Student Engagement, students are averaging thirteen hours of work per week and one out of five students spends an average of more than ten hours a week caring for dependents (Magna Publications, 2005). When role demands create the perception that available resources are inadequate to deal with the multiple roles, students experience role overload. Role overload is the degree to which persons are overtaxed as a result of being under time pressure and have too many commitments and responsibilities (Jones et al., 2007). These roles, in addition to being a student, undoubtedly affect academic performance. Role overload has been examined in the work environment and has been reported to have a moderating affect on factors affecting performance (Brown et al., 2005; Jones et al., 2007). Therefore, we hypothesize:

H2: Role overload will moderate the effect of engagement on academic achievement.

Understanding the affects of engagement on performance should include an examination of other known antecedents of performance. Self-determination theory explains motivation and performance (Deci & Ryan, 1985) based on the satisfaction of three fundamental needs; competence, autonomy, and relatedness. The concepts of autonomy and relatedness are discussed in the following section describing the learning environment. However, from the motivation literature, it has been well-established that a person's need for competence or self-efficacy has an affect on their performance (Brown et al., 2005; Harter, 1981; Pintrich & De Groot, 1990; Deci & Ryan, 1985). Self-efficacy represents the perceived confidence students have in their competence or in their ability to accomplish some behavior. It involves the judgment of one's capability to execute given types of performances. High perceived competence is typically associated with high performance; however, if students are not engaged with the learning activity their belief in their abilities to perform may not necessarily translate into actual performance. Therefore; we hypothesize that:

H3: Curricular engagement will mediate the effect of perceived competence on academic achievement.

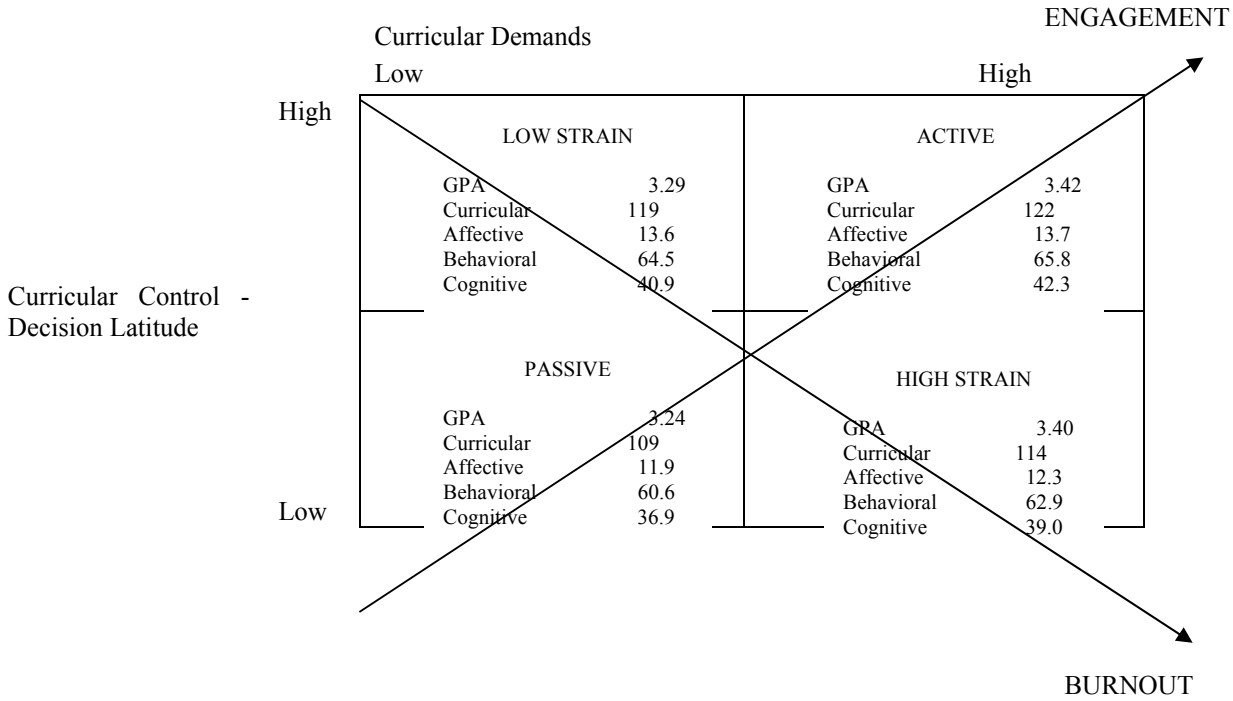
THE EFFECTS OF THE LEARNING ENVIRONMENT ON CURRICULAR ENGAGEMENT

Faculty create learning environments that impact students' levels of engagement through their decisions on how the material will be presented, which learning activities will be used, and what kinds of feedback will be provided. Understanding engagement focuses attention on the connection between the learner and the social context in which learning takes place. The National Research Council (2003) concludes that effective practices of engagement address underlying psychological variables, such as the need for autonomy and the need for relatedness in addition to the need for competence discussed above. These basic needs and environmental

conditions are also fundamental in examining employee behaviors, thoughts and feelings in organizational settings. For the past 25 years, the demand/control/support model (Karasek, 1979) has been the predominant paradigm for researchers investigating the psychosocial aspects of the work environment and their effects on employees see figure 2.

The model postulates that psychological strain results from the joint effects of the demands of the work situation, the range of decision-making freedom to face those demands, and the amount of support provided the worker. Job demands are psychological stressors such as time pressures, heavy work load, ambiguity, and role conflict. Job control concerns the workers potential control over his/her work tasks and is composed of two sub-dimensions: decision authority and skill discretion. The degree of autonomy, flexibility, and discretion in choosing the timing and methods for performing the tasks as well as the amount of variety and creativity in skill usage form the job control dimension. Conditions that produce high job strain are likely to reduce engagement.

FIGURE 2: Demand-Control-Support Learning Environment Model and Curricular Engagement



Less researched but perhaps more relevant to curricular engagement is the diagonal composed of low demands/low control and high demands/high control labeled 'Engagement' in Figure 2. The combination of high demands and high control may produce "good stress," which leads to high motivation and active learning behaviors. The reverse is predicted for an environment with low demands/low control leading to unmotivated passive learning and apathy.

The third dimension, Social Support, was incorporated into the model by Johnson (1986), but it is not explicitly shown in Figure 2. Social support forms this third dimension which incorporates social relationships in the work environment and is thought to increase job strain when high demands and low control are combined with low support. In addition, motivation and learning may be increased in a high demands/high control environment if supplemented with high social support. Social support is composed of both peer support and supervisor support.

Based on Karasek's demand/control/support environmental model, we propose the following hypothesis:

> *H4: Increasing levels of demand, control, and support in the learning environment fosters greater levels of curricular engagement.*

Next, we present the results of a secondary data study based on routinely collected assessment data at the university level. This study allows us to explore the level of support for our hypotheses and to examine the relationship between the learning environment, curricular engagement and academic achievement, as depicted in Figure 1, at a broad generalized level.

UNIVERSITY-WIDE ENGAGEMENT WITH MAJOR - SECONDARY DATA ANALYSIS

METHOD

The secondary data was generated from periodical assessment surveys from a primarily undergraduate public University's institutional assessment center. The assessment surveys were locally developed and customized by the University's assessment office and have evolved over many years of data collection. Typical assessment office analyses involve simple percentages, trends, and crosstabs. In an effort to capture a broad array of information, but not to overburden the student respondents, the on-line surveys were organized into modules and were administered at various stages of the students' college experience. Therefore, it must be noted that not all respondents have a complete set of responses for all modules; hence sample size varies based on the modules in which specific variables were extracted. This analysis is based on approximately 2,500 respondents (28% male) (27% liberal arts, 17% education, 19% business, 15% science, 22% nursing) who have completed at least 90 semester hours of course work. This senior status was imposed in order to focus the object of engagement on the course work required in their major. Survey items were all phrased in respect to behaviors, thoughts, or emotions towards their major courses. The timing of the assessments took place midway through spring semesters.

The scales used to measure the constructs of interest were derived by the author who first classified the items available in the assessment modules into categories representing affective, behavioral, and cognitive engagement as well as environmental learning areas representing

demand, control, and support conditions. Definitions of curricular engagement and the learning environment as described earlier in this paper guided the classification process. Of the potential 149 assessment items, 81 were selected for further statistical examination for fit with this study's objective. Each category of items was then refined through item-total correlation analysis and coefficient alpha examination for the overall scale. Given the nature of secondary data the goal of this measurement stage was not to create and purify scales but to reasonable fit the available data to this study's framework of analysis. Multiple items for each constructs' dimensions were available, and they produced reasonable coefficient alphas (.64 to .84). Table 1 presents the constructs, example items, and the descriptive statistics of the scales.

TABLE 1: Scales and Descriptive Statistics

Scale (Example of Items)	Mean	ST DV	Alpha
Curricular Engagement			
Curricular Engagement (sum of affective, behavioral, cognitive; n=2338)	115.39	11.18	.68
Sub-dimensions			
Affective Engagement (4 items, n = 2519)	12.74	2.09	.82
Overall satisfaction with quality of instruction in your major course			
Behavioral Engagement (19 items, n = 2417)	63.11	5.94	.79
I prepare drafts of my work before creating the final product			
Cognitive Engagement (12 items, n = 2439)	39.50	5.34	.84
I try to learn from feedback I have received			
Learning Environment			
Demand (6 items, n = 2514)	20.24	2.82	.64
There were at least five graded assignments in each of my major courses			
Control (13 items, n = 2444)	44.96	4.79	.83
Professors in my major gave me the opportunity to tailor assignments to reflect my interests and talents			
Support (10 items, n = 2508)	35.29	3.61	.79
I received comments on my class work from other students as well as my professors			
Perceived Competence			
Perceived Skills Development (16 items, n = 446)	49.25	9.19	.93
Your ability to work effectively in groups			
Academic Achievement			
Grade Point Average (1 item, n = 2543)	3.33	.444	

ANALYSIS AND FINDINGS

First, in order to examine the relationship between curricular engagement (affective, behavioral, and cognitive) and academic achievement (GPA), regression analysis was performed. The following analyses are performed with curricular engagement (defined as the sum of the three dimensions) in addition to each of the three individual sub-dimensions of engagement. Gender was included as a control variable based on a significant difference in GPA between males ($\overline{X}$ = 3.16) and females ($\overline{X}$ = 3.40). Choice of major was also controlled; however, in all cases it was insignificant and therefore those results are not included for clarity. Table 2 (total sample column) presents the standardized regression coefficients for academic achievement. When academic achievement is measured as grade point average, overall curricular engagement and each of its three sub-dimensions are significant. Of the three sub-dimensions, behavioral engagement has the largest standardized coefficient (β = .138) followed by affect (β = .088) and then cognitive (β = .059). Based on these exploratory results, we find support (although weak R^2 = .11) for hypothesis 1 that curricular engagement has a positive effect on academic achievement (GPA).

Next, we examine the possibility that role overload, operationalized as the number of hours students are employed, moderates the effect that curricular engagement has on grade point average. Since role overload was posited to be a moderating factor with regard to curricular engagement's effects, a split design was utilized. The sample was separated via median split with 15 hours of hours employed per week being the median. The range of plus and minus two hours around the median was discarded to ensure this split would allow the detection of differences in these high and low categories of hours employed. Table 2 presents the descriptive statistics and the standardized regression coefficients for the total sample in addition to both subgroups. First, we see significant coefficients for gender (coding: males = 0, females = 1) under all groupings suggesting the necessity to control for gender effects and indicating females exhibit higher engagement and higher GPAs. The rank order of the standardized coefficients remains the same among the three groupings. However, the constant shifts higher when examining the lower hours employed group (2.309) as compared to the higher hours employed group (1.998). In addition, reviewing the means for GPA and each of the three dimensions of engagement it can be seen that fewer hours employed are associated with higher levels of engagement and higher GPAs. Low but significant correlation coefficients between hours employed and GPA, affective, behavioral, and cognitive engagement ranged from -.04 to -.12. Thus, it appears that hours employed moderates engagement's effect on grade point average, supporting hypothesis 2. If we equate hours employed with role overload, the results are consistent with the occupational performance literature indicating performance suffers when people are overloaded.

TABLE 2: The Effect of Curricular Engagement on Academic Achievement (GPA)			
		Role Overload Moderator	
	Total Sample	Low hours employed (≤ 12 hours/week)	High hours employed (18 ≥ hours/week)
Curricular Engagement	.220*	.189*	.252*
Gender	.197*	.227*	.178*
R^2	.11	.10	.11
n	2,295	1,004	977
Sub-dimensions			
Constant		2.309*	1.998*
Affective Engagement	.088*	.065*	.102*
Behavioral Engagement	.138*	.136*	.123*
Cognitive Engagement	.059*	.042	.099*
Gender	.197*	.227*	.178*
R^2	.11	.10	.11
n	2,295	1,004	977
Means (Standard Deviations)			
Grade Point Average	3.33 (.44)	3.41 (.42)	3.27 (.45)
Curricular Engagement	115.39 (11.17)	115.95 (10.81)	114.599 (11.71)
Affective Engagement	12.73 (2.09)	12.88 (1.98)	12.64 (2.22)
Behavioral Engagement	63.11 (5.93)	63.38 (5.84)	62.66 (6.07)
Cognitive Engagement	39.50 (5.33)	39.63 (5.18)	39.24 (5.58)
*Standardized Regression Coefficients, Significant at .05 level. Gender coding (males - 0, females - 1)			

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Given engagement's effect on achievement, we now examine the hypothesized mediating effect that engagement may have on students' perceived competence and achievement. Perceived competence was measured with sixteen items asking students to indicate their perceived abilities on a variety of skills thought to be necessary to perform well on academic tasks. In general, a given variable (engagement) may mediate the relationship between two variables when it accounts for the relationship between a predictor (perceived competence) and an outcome variable (GPA). Following Barron and Kenny's (1986) procedure of estimating path coefficients, we estimate four regression equations between 1) the predictor variable (perceived competence) and the outcome variable (GPA) (β = .006, significant at .05), 2) the predictor variable and the mediator (curricular engagement) (β = .325, significant at .05), 3) the mediator

and the outcome variable (β = .010, significant at .05), and 4) the predictor variable (β = .004, not significant at .05) and the mediator (β = .009, significant at .05) on the outcome variable. Mediation is established if the coefficients from the three simple regressions are significant and the predictor variable's coefficient is insignificant while the mediator's coefficient remains significant in the two variable regression. Conditions of mediation are established for overall curricular engagement; in addition the same analysis was performed for each of the three sub-dimensions of curricular engagement with equivalent results. Therefore, support is established for hypothesis 3, engagement mediates the effect of perceived competence on performance.

Next, we examined the learning environment's effect on curriculum engagement and display the standardized regression results in table 3. All the regression coefficients are significant for curricular engagement and across the three sub-dimensions supporting the hypothesized (H4) relationship between the effect of the learning environment and students' level of engagement. Unexpectedly, the demand coefficient on affective engagement was negative. Intuitively this may reflect students' preference for fewer assignments and homework. The size of the standardized coefficients for curricular engagement suggests that allowing students to have control or autonomy in their learning is most important followed by instructional support and then demanding learning tasks.

TABLE 3: The Effects of the Learning Environment on Curricular Engagement

		Sub-dimensions		
	Curricular Engagement	Affective Engagement	Behavioral Engagement	Cognitive Engagement
Demand	.100*	-.081*	.116*	.108*
Control	.371*	.224*	.285*	.323*
Support	.155*	.390*	.078*	.143*
Gender	.111*	.002	.143*	.064*
R^2	.36	.28	.21	.27
N	2,148	2,296	2,212	2,231

*Standardized Regression Coefficients Significant at .05 level.

In an effort to present the data in a format congruent with the Demand/Control/Support model the responses were categorized into the four cells based on a median split of the environmental variables. Means for GPA, curricular engagement, and each sub-dimension are presented in the four cells of Figure 2. The pattern of the magnitude of the means further supports the hypothesized relationships between the demand/control learning environment, curricular engagement, and achievement (GPA). As predicted by the model, the "Active" cell with high demand and high control generated the greatest level of engagement and highest GPA.

Therefore, it appears that high demand/high control would be the most desirable learning environment conditions for our pedagogies to create. In addition, there are reduced levels of engagement across all three curricular engagement sub-dimensions when comparing the high job strain cell (high demands/low control) with the low job strain cell (low demands/high control) supporting the contention that high stress leads to lower engagement and perhaps burnout.

Table 4 presents the analysis of the mediating effect curricular engagement has on the relationship between the learning environment and achievement. The results suggest that engagement does mediate the learning environment's effect on performance. Both control and support are fully mediated while demand is partially mediated by engagement. Therefore, instructors need to pay particular attention to students' levels of engagement if they desire to enhance performance through classroom interventions.

TABLE 4: Curricular Engagement's Mediating Effect on the Learning Environment and GPA	
Demand	Regression Coefficient (Standard Error)
Curricular Engagement ⟶ GPA	.010 (.001)*
Demand ⟶ GPA	.028 (.003)*
Demand ⟶ Curricular Engagement	1.463 (.070)*
Demand + Curricular Engagement ⟶ GPA	.016 (.003)* + .008 (.001)*
Control	
Curricular Engagement ⟶ GPA	.010 (.001)*
Control ⟶ GPA	.012 (.002)*
Control ⟶ Curricular Engagement	1.295 (.041)*
Control + Curricular Engagement ⟶ GPA	.003 (.002) + .011 (.001)*
Support	
Curricular Engagement ⟶ GPA	.010 (.001)*
Support ⟶ GPA	.014 (.002)*
Support ⟶ Curricular Engagement	1.430 (.057)*
Support + Curricular Engagement ⟶ GPA	.001 (.003) + .010 (.001)*
* Significant at .05 level	

DISCUSSION AND IMPLICATIONS

The findings of this exploratory secondary data analysis supports the notion that learning environments with demanding requirements that allow student autonomy and provide

instructional support foster higher curricular engagement leading to greater academic achievement. Curricular engagements' effect on achievement appears to be moderated by role overload (hours employed). In addition, engagement was found to mediate students' perceived competence effect on academic achievement (GPA). The use of the university-wide data set allows some degree of confidence in generalizing across majors but may give-up more in-depth understand of the engagement relationships given the ad hoc measures inherent in the use of the secondary data. The well recognized limitations of secondary data studies apply to this analysis. Based on theory, the literature, and this exploratory study's findings, we offer five principles for fostering curricular engagement.

Empower Students. Results from this study (coefficients two to three times greater than the other variables) suggest the greatest impact on curricular engagement is student autonomy or control over their learning. Students need to take an active role in their education and this role should include active production of knowledge rather than passive consumption of information. Choice and opportunity for self-direction enhances intrinsic motivation by helping to fulfill the need for autonomy. Students who are overly controlled have been shown to learn less when the subject matter is complex or requires conceptual, creative processing (Grolnick & Ryan, 1987). Specific directives, detailed assignment instructions, specified approaches to problem solving, and negative performance-oriented feedback all reduce students' feeling of autonomy resulting in less engagement. However, even uninteresting subject matter that is presented with meaningful rationale may engage students when supported with student control of various aspects of the learning tasks. Autonomy can be defined as having three aspects: 1) method autonomy with regards to the procedures and methods utilized in completing the learning task, 2) schedule autonomy allowing control of scheduling/sequencing/timing of the learning tasks, and 3) criteria autonomy allowing students to have the ability to choose or modify the criteria used for evaluation of their performance (Breaugh, 1985). Students' autonomy in the learning task is a relatively easy to manipulate intervention and given its significant role in curricular engagement instructors should be aware of students' perceptions of autonomy. Participative Decision Making has been successfully used in the work environment to increase employee control resulting in greater job satisfaction, organizational commitment, reduced absenteeism and fewer turnovers (Spector, 1986). It is the increase in subjective employee perceived control that makes Participative Decision Making effective and the same benefits may occur in the classroom setting.

Provide Support Resources. Theory and findings from this study suggest that students need support resources to facilitate their engagement with the learning task. Resources refer to the physical, psychological, social, or organizational aspects of the learning environment that help achieve the learning goals, that reduce task demands, or stimulate personal growth and development. Social resources to support students' learning efforts include assistance from the instructor, dialogue with fellow students, and/or access to disciplinary experts or practitioners all of which helps fulfill their need for relatedness. Self-determination theory suggests the sense of

relatedness means students feel respected and cared for and is a primary reason students are willing to engage in behaviors that are valued by these significant others to whom they feel connected. Evidence also indicates that minimally guided instruction is less effective than approaches that emphasize instructor guidance and feedback (Kirchner, Sweller & Clark, 2006). Additional support resources include access to sources of information, performance feedback, disciplinary models and procedures, sufficient time to complete the learning tasks, technologies, and models for vicarious learning. However, care must be taken to prevent these resources from creating the perception that there is a single valid answer or solution to every question in that this has been shown to reduce student engagement (Stein, Grover & Henningsen, 1996).

Create Demanding Learning Tasks. Provide challenging tasks that require substantial but reasonable time and effort to complete enhanced engagement. Engle and Conant (2002) suggest problematizing the content by encouraging student questions and allowing students to define problems that elicit their curiosities. The business educational literature contains numerous pedagogies designed to demand creativity (McCorkle et. al, 2008), critical thinking (Klebba & Hamilton, 2007), curiosity (Hill & McGinnis, 2007), debate (Roy & Macchiette, 2005), and other sought after skills. Providing optimally challenging learning tasks will only be effective if students perceive they have the relevant skills necessary to succeed at it. Learning tasks provide communications, feedback, rewards, etc., that can either enhance of reduce the feeling of competence. Positive effectance-promoting feedback enhances engagement while negative performance feedback diminishes it (Deci, 1975). Other sources of perceived competence include mastery experiences, vicarious experiences, social persuasion, and physiological states experienced during the activity such as stress or anxiety. However, based on this study's findings, it should be noted that perceived competence's impact on achievement was found to be mediated by the degree of engagement. Therefore, in order to realize the full potential of students' self-efficacy they must be actively engaged in the task.

Beware of Role Overload. Role Overload is the degree in which students are cognitively overtaxed as a result of having too many commitments and being under time pressure. Findings from this study suggest that instructors' efforts to create highly engaging classrooms are moderated by students' role overload. Specifically, students who worked more than eighteen hours per week reported lower engagement and achieved lower grade point averages than students who worked fewer than 12 hours per week. Whereas, hours worked is just one proxy for overload, when that is combined with other curricular demands, extra-curricular demands, and non academic demands, the potential for even greater moderating effects exist. Time flexibility is the most common prescription employers use to help balance work and family life for their employees (Dex & Smith, 2002) while overlapping networks and social ties at work help buffer the work family conflict (Lewis & Copper, 1999). Academic advising might provide the opportunity to encourage students to create synergy and social networks between work, extra-curricular activities and their disciplinary studies. In addition, individual instructors could

provide students with some degree of course assignment scheduling autonomy to help reduce the feeling of role overload.

Utilize Multiple Targets of Engagement. Instructors must recognize the diversity in our students' interests, experiences, backgrounds, expectations, and commitment to their classes. Various pedagogies can stimulate engagement for different reasons and clearly one size fits all doesn't work in most classrooms. Curricular engagement's taxonomy of targets provides a foundation to consider when designing engaging learning tasks. These targets include the learning process (active learning pedagogies), the subject matter (experiential learning pedagogies), the context (multidisciplinary learning pedagogies), and the human condition (service-learning pedagogies). Starting learning units with an intriguing real-world issue, controversial positions, stories, photos, or questions can help draw students into the subject matter rather than simply inform them of the material. The American Chemical Society's (Eubanks, et at., 2009) engagement philosophy 'to teach through real-world issues to the underlying principles' seems equally appropriate in business. Multiple targets of engagement may provide the highest opportunity for creating an engaging classroom.

The preponderance of research evidence suggests the more actively engaged students are, the more likely they are to learn and to attain their academic goals. While empirically validated learning theories provide a 'scientific' foundation for understanding and designing engaging instruction, they do not guarantee the instruction will be engaging or effective. The 'art' of instructional design draws on your understanding of your students, your subject matter and how the two are strategically related which requires insight, creativity and a high level of engagement by you the instructor. Like an "art", engagement requires continual practice, reflection and study of the subject matter, its current applications/events as well as the discipline's pedagogical content knowledge. Designing effective instructional activities in a continuously changing environment presents a constant but worthwhile challenge requiring both the art and science of fostering engaged learning.

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INTEGRATED BUSINESS CORE CURRICULA (UNDERGRADUATE): WHAT HAVE WE LEARNED IN OVER TWENTY YEARS?

R. Barth Strempek, Elon University
Stewart W. Husted, Virginia Military Institute
Peter Gray, United States Naval Academy

ABSTRACT

This article critically examines sixteen integrated business core curricula at the undergraduate level and analyzes their differences, similarities, and assessment results. While six of these programs have been abandoned or are no longer operational as designed, the composite successes and failures offer several important lessons on how to design, implement, and sustain such innovations. Analysis of the collective assessment results suggests generally positive achievement of learning goals (core and higher-level objectives) and job placement outcomes. However, significant challenges concerning implementation and sustainability have been experienced by most schools.

INTRODUCTION

The 1990s brought many messages from business and industry leaders that they were not satisfied with the preparation of American business students. One commonly cited study by Porter and McKibben (1988) stated that undergraduate business programs relied on the same pedagogical model developed in the 1920's and 1930's. This model ascribed to the concepts of the "specialization of labor and division of labor." Thus, business schools were organized by functional specialty areas into departments of accounting, finance, marketing and management (Curington, 2002). The consequence of such a model in our rapidly changing global environment was that students, once employed, were poorly prepared to function in an interdisciplinary operational environment. They simply could not see the big picture or the linkages between disciplines.

AACSB began mandating in the 1992 standards revision that MBA programs use an integrated curriculum approach. Many schools revised their MBA curricula; a few experimented with the transformation of undergraduate programs. The AACSB Management Education Task Force (2002) identified curricular relevance in today's business environment as a key priority. The report cited the need for business programs to "blur the boundaries between educational disciplines" and "to offer innovative programs." It encouraged schools to adopt effective pedagogies, action learning, and effective application of technology.

This paper examines sixteen integrated business programs attempted over the past twenty years. Wherever possible, published papers, assessment reports, conference presentations and other written sources were used (See Figure 1). This was supplemented with personal interviews with a number of faculty and administrators at several schools.

Figure 1
Integrated Business Programs: Current Status and Sources Used

	Data Source	
School (Program Operation)	Written	Personal
Babson College (1996 - present)	Bliss & Potter (2000) Cohen (2003)	Keith Rollag
Boston University (1993 - present)	Brunel & Hibbard (2006)	Nitin Joglekar
Central Missouri State University (2004 - present)		Larry K. Michaelsen
Eastern Connecticut State University (1994-2000)	Kennedy & Russell (2002)	
Elon University (2002-2004)	Strempek, Burbridge, & Paul (2004) Strempek (2008) Strempek (FIPSE report 2005)	R. Barth Strempek
Indiana University (40 years)	Website	
James Madison University (1994 - present)		Kenneth C. Williams
Lynchburg College (1998-2002)		Stewart W. Husted Frank Whitehouse
Northern Illinois University 1996 - present)	Anthony, DeMoranville, & Aurand (2002) Aurand, DeMoranville, & Gordon (2001)	Carol DeMoranville Timothy W. Aurand
University of Arkansas (2002 - present)	Curington (2002) Curington (FIPSE report 2005), Website	William P. Curington
University of Idaho (1994 - present)	Stover & Byers (2002) Website	
University of Massachusetts – Lowell (1992-1995)	Puri (FIPSE Final Report 1995)	
University of Oklahoma 1995 - present)	Michealsen, et. al. (2006); Shinn (2003) Michealsen, et. al. (unpubl. paper)	Larry K. Michaelsen
University of Virginia 2000 - present)	Atchison, Hamilton, Kehoe, & Zeithaml (2005)	
Western Carolina University (1997-1998)	Presentation (1998) Carland & Carland (2002) Carland, Carland, & Higgs (1998)	James & JoAnn Carland
Valparaiso University (1997)	Presentations (1998, 1999)	

A SHORT HISTORY OF INTEGRATED BUSINESS CURRICULA

The earliest pioneer of integrated (cross-functional) programs may be Indiana University in the 1960s. However, it took quite a few years for others to follow: UMass-Lowell (1992), Boston University (1993), the University of Oklahoma (1994), and the University of Idaho (1994). A number of schools have now successfully sustained integrated core programs for more than a decade [Boston University (13 yrs.), Indiana University (40), Northern Illinois University (10), the university of Idaho (12), and James Madison University (10)].

Some schools received grants from the U.S. Department of Education Fund for the Improvement of Postsecondary Education (FIPSE), corporations, or private foundations to implement the curriculum changes [University of Massachusetts at Lowell (FIPSE), Elon University (FIPSE), University of Arkansas (FIPSE), Lynchburg College (NCIIA), University of Virginia (General Electric Corporation)]. Level of funding received does not appear to be a factor in whether a program becomes a permanent fixture in the curriculum. Several well-funded projects were abandoned, while others with no outside funding are still in operation.

A literature search, personal knowledge, and networking by the authors identified sixteen integrated business core curricula operated during the past twenty years (See Table 1). Ten programs are active while six have been abandoned or drastically modified.

Table 1: Business Core Curriculum: Functional Integration Models Program Structure

College/University	Status	Program Length	Credit Hours	Year in Curriculum	Courses Replaced	Ind. Course Approach **(# courses)**
Babson College	1996 - present	5 sem.	34	Fr./So./Sr.	11	
Boston University	1993 - present	1 sem.	16	Jr.	4	
Cnt'l Missouri St. Univ.	2004 - present	1 sem.	12	Jr.	4	
E. Conn. St. University	1994 - 2000	3 sem. + intrnshp	42	Jr./Sr.	6	6
Elon University	2002 - 2004	4 sem.	20	Jr./Sr.	5	
Indiana University	1960s - present	1 sem.	12-14	Jr.	4	4+
James Madison Univ.	1996 - present	1 sem.	12	Jr.	4	4
Lynchburg College	1998 - 2002	2 sem.	12	Jr.	4	
No. Illinois University	1996 - present	1 sem.	12	Jr.	4	
University of Arkansas	2002 - present	5 sem.	21	Fr./So./Jr.	9	7
University of Idaho	1994 - present	2 sem.	17	Jr.	7	6
Univ. of Mass. - Lowell	1992 - 1995	2 sem.	21	Jr.	6	
University of Oklahoma	1994 - present	1 sem.	12	Jr. (1st term)	4	
University of Virginia	2000 - present	2 sem.	21	Jr.	7	
W. Carolina University	1997 - 1998	3 sem.	18	So./Jr.	10	
Valparaiso University	1997	1 sem.	12	Jr.	5	

PROGRAM STRUCTURE

Program structure is described by program length, credit hours, year in the curriculum, and number of courses replaced. Table 1 indicates whether or not the program utilizes an independent course approach (individual instructors teaching separate courses containing integrated content) and an estimate of how many traditional courses were replaced.

Integrated programs conducted during a single academic term are most common (seven schools), while four programs span two terms. These programs encompass 12 to 21 credit hours. Only five schools have attempted programs beyond one academic year in duration. Babson College is the most ambitious, integrating the curriculum over three years. Elon (four semesters) and Eastern Connecticut State (three terms) programs spanned both junior and senior years. Arkansas recently initiated a three-year, twenty-one credit program during the freshman, sophomore, and junior years. Of these only the multi-year Babson and Arkansas programs are currently operating.

Integrated programs replace from four to nine traditional core academic courses. Eastern Connecticut State, Elon, Indiana, James Madison, and Idaho use(d) an independent course approach while the majority utilize non-traditional block scheduling methods (shorter, coordinated, interwoven segments covering functional business material).

Curriculum Design and Pedagogical Approach

Curriculum design and pedagogical approach includes the use of cross functional teams, integrated projects/cases versus independent projects/cases, entrepreneurial approach, use of student teams, and just-in-time teaching (content delivered by different faculty representing different business functions, timed to support an integrative project). Table 2 summarizes the use of these characteristics.

Nearly all programs utilize a cross-functional, team-taught approach and make extensive use of student teams to enhance interpersonal capabilities and reinforce collaboration. More interesting perhaps is the approach and range of experiential content employed. Nearly all programs make extensive use of student teams but how they use teams varies substantially. Most commonly, integrated programs use entrepreneurship as the vehicle for integration and experience (9 of 16). These entrepreneurial activities often encompass the development of a formal business plan (Boston University, Western Carolina, Eastern Connecticut State). Two schools, Oklahoma and Elon, took the experiential approach to its ultimate level by incorporating the formation of real operating enterprises.

Half of the programs (8) use just-in-time teaching to integrate multifunctional content and team projects. In the mid 1990s Larry Michaelsen at Oklahoma (now at Central Missouri State) developed one of the most extensive examples. As Michaelsen's students absorb general business content in the integrated core program they simultaneously undertake a process of developing business concepts and plans, obtain funding of up to $5000 (loan) from local financial institutions, and then implement those businesses. Michaelsen's students have raised

nearly $1,000,000 for local charities and have experienced a negligible failure rate. Elon developed an even more elaborate experiential model spanning four terms and developing four different "live" business enterprises.

Table 2: Business Core Curriculum: Functional Integration Models Curriculum Features

College / University	Cross Funct'l Team Taught	Integrated Project/Case	Ind. Projects or Cases	Entrepren'l Approach	Student Teams	J-I-T Teaching
Babson College	Yes (Fr.)	Yes	Yes	Yes	Yes	Yes (Fr.)
Boston University	Yes	Yes		Yes	Yes	Yes
Cnt'l Missouri St. Univ.	Yes	Yes		Yes	Yes	Yes
E. Conn. St. University	Yes	Each course		Yes	Yes	
Elon University	Yes	Yes		Yes	Yes	Yes
Indiana University	Yes	Yes			Yes	
James Madison Univ.			Yes	Yes	Yes	
Lynchburg College	Yes			Yes	Yes	Yes
No. Illinois University	Yes		Yes		Yes	
University of Arkansas		Simulation in Strategy course			Each course	
University of Idaho	Yes				Yes	
Univ. of Mass. - Lowell		Yes	Yes		Yes	
University of Oklahoma	Yes	Yes		Yes	Yes	Yes
University of Virginia	Yes		Yes		Yes	Yes
W. Carolina University	Yes	Yes		Yes	Yes	Yes
Valparaiso University	Yes		Yes			Yes

While it is difficult to place every approach to integrated curriculum into nice neat classifications, three central approaches to curriculum design and pedagogy are recognizable among these sixteen colleges/universities.

The first and most basic approach enrolls students in independent courses such as marketing, management, finance, and possibly others, and connects them by a common integrated case or cases, business plan, simulations, or a variety of integrated exercises. A grade is received for each course and the instructor largely controls the instruction for his/her course. Courses are often blocked, and students usually take the same courses concurrently. Most often, they also enroll in a separate laboratory or application class where students, working in teams, complete business plans, analyze cases, or work on a connected series of projects and/or exercises. This approach offers faculty the most control of their instruction and requires the least amount of team teaching. Oklahoma's integrated core program is a good example of this approach. Students at Oklahoma enroll in three traditional, functional courses using a just-in-

time educational delivery system. Functional concepts are tied together as student teams develop business plans, obtain funding, implement and operate their enterprises, keep records and distribute funds to their lenders and charities.

A second approach enrolls students in a series of highly integrated courses designed to give them instruction as needed for the purpose of the central business project, case, etc. The courses might begin as early as the freshman year (Babson). Freshman experience courses are designed to give students an introduction to the functions and processes of business, and the course(s) stress competencies such as communications skills, teamwork, globalization, ethics, leadership, decision-making, etc. For example, as a prelude to their integrated program, Lynchburg offered a freshman course which was integrated in order to introduce key core competencies such as communications, technology, leadership, team building, and globalization. Students were taught core competencies using a standardized rubric for how to work in groups, write memos, make oral presentations, etc.

The freshman experience approach commonly takes an entrepreneurial focus and students frequently work in teams to create a business (real or simulated). This approach requires maximum teamwork and effort on the part of faculty. The faculty must create a seamless curriculum of one or more semesters, with instruction delivered just-in-time or as needed. While the Babson model is the most comprehensive, the Lynchburg model was one of the most complex and innovative. Faculty, using Microsoft Project Manager software, developed a highly integrated, two-semester, 12 hour course which replaced Principles of Marketing and Management, Operations Management and Business Law.

Furthermore, Lynchburg faculty published their own book of "classical" readings from functional areas and the true classics of relevant economics, philosophy, science, and literature. Various readings from these classics were integrated to reflect the liberal arts focus of the college. The Lynchburg model incorporated entrepreneurial elements following the natural flow of the business start-up process. Using small grants from the National Collegiate Inventors and Innovators Alliance (NCIIA), student teams created start-up companies and presented their business plans to a panel of venture capitalists and bankers.

Most integrated programs fall into categories one (Independent Courses) or two (Integrated Courses) above. The third approach represents the most ambitious effort. It can encompass multiple-years, replaces four or more courses, and has students start real businesses. Faculty serve as mentor/advisors to student businesses. Elon University attempted an engaging (and complex) venture [Strempek, 2004, 2005, 2008]. Student teams formed a publishing company, marketing consulting firm, music recording business, and special events firm. These teams produced (1) a critically acclaimed professional jazz CD, (2) a successful freshman experience text used at three colleges/universities, (3) operated a marketing consulting organization which conducted projects for campus groups, local businesses, and civic organizations, and (4) several successful music/cultural events. The Elon approach totally immersed students in the business culture and required the teams to execute multiple and

complex planning and execution steps. This experiment demonstrated the possibility of taking business education to an even higher level of integration than other programs. However, as many schools have discovered, institutional will and adaptability is a prerequisite to major curricular overhaul. The Elon program continues to develop and operate student enterprises as a part of its entrepreneurship program but the delivery of integrated coursework was abandoned for primarily institutional reasons.

ASSESSMENT OF INTEGRATED BUSINESS CURRICULA

Solid assessment information on integrated business programs is difficult to assemble due to the wide variety of sources and methods that must be used to develop a relatively complete picture (See Figure 1). The most extensive program assessment examinations were undertaken by UMass-Lowell and Elon, and were funded by FIPSE grants. Full program assessments are available from the U. S. Department of Education [Puri, 1995; Strempek, 2005]. Published articles were available for programs at Western Carolina, Eastern Connecticut State, Northern Illinois, Virginia, and Babson [Carland & Carland, 2002; Kennedy & Russell, 2002; DeMoranville, et. al.; Aurand, et. al., 2001 and Anthony, et. al., 2002; Bishop, et. al., 1998; Atchison, et. al., 2005; Bliss & Potter, 2000]. Additional documentation in the form of unpublished manuscripts and conference presentations was available for Babson, Boston University, Oklahoma, and Valparaiso. Authors interviewed individuals representing programs at Babson, Boston University, James Madison, Lynchburg, Northern Illinois, Arkansas, Oklahoma, and Western Carolina. Some program websites were also useful.

The following discussion is organized to answer several critical questions. First, regarding the accomplishment of educational objectives: How well do integrated programs deliver traditional core business content? Beyond core content delivery, one of the prime motivations for integrated curricula is to develop higher-level knowledge and capabilities such as systems understanding, creativity, teamwork, leadership, and complex project planning/management. Therefore, a second question to ask is how well these integrated programs accomplish higher-level learning objectives? A third relevant question is whether or not there is evidence that the capabilities of these students are valued in the marketplace?

Evidence suggests that integrated programs are at least as effective at delivering core business content as traditional programs and in at least some cases may be superior (Table 3). The most dramatic results were observed at Western Carolina where a group of "at risk" business students (GPAs around 2.0) took the integrated program and subsequently scored significantly higher than traditional students on a core content assessment exam. Further, only one of those at-risk students ultimately failed to graduate. The ICE program at Virginia reports several improved student outcomes leading to better career preparation. A study of student perceptions (five years following graduation) at Idaho found a positive perceptual difference. At Eastern Connecticut State, Virginia, and Valparaiso, faculty felt that students were superior on core

content knowledge. However, quantitative comparisons conducted at Elon, UMass-Lowell, and Oklahoma found no significant differences. Much of this evidence suffers from the usual culprits: small numbers, potentially faulty perceptions, inadequate experimental designs, etc. However, it is interesting to note that there have been no observations of inferior performance on the part of students taking integrated programs. Furthermore, the greatest advantage of these programs may be reflected in the experiences of two programs (Boston University, Oklahoma) which cited student preparation for and performance in upper-level courses as a major benefit.

Table 3: Integrated Business Curricula
Assessment Comparison - Accomplishment of Learning Objectives

School	Core Content	Higher-Level Objectives
Babson College	Better than traditional program (A, FO)	Better than traditional program (A, FO)
Boston University	Content grades improve with team quality (E1) Lower GPA students benefit more	All students take integrated program. No trad'l comparison group available.
Central Missouri State Univ.	(expected to be similar to Univ. of Oklahoma)	(expected to be similar to Univ. of Oklahoma)
E. Conn. State University	Better than traditional program (A, FO)	Better than traditional program (A, FO)
Elon University	Comparable to traditional program (E2)	Met learning objective expectations (E2) More extensive goals than trad'l courses
Indiana University	No information	Teamwork centered
James Madison University	Fully Integrated (A, FO)	No information
Lynchburg College	Better than traditional program (A, FO)	Improved project mgt. skills (A, FO) More innovative
University of Arkansas	Better than traditional program (FO)	Improved preparation and student culture (A, FO)
University of Idaho	Bus. content obj's better than trad'l (E3) (based on students' perceptions after 5 yrs.)	Interpersonal obj's better than trad'l (E3) Intellectual obj's comparable to trad'l Communications obj's comparable to trad'l
Univ. of Mass. - Lowell	Comparable to national sample (E4)	More holistic understanding (E4)
University of Oklahoma	Comparable to traditional program (E5) Superior in upper-level courses	Better than traditional program (E5)
University of Virginia	Better than traditional program (E6, FO)	More innovative, flexible (E6, FO)
Western Carolina University	Better than traditional program (E7)	Not measured
Valparaiso University	Better than traditional program (FO)	Promising (FO)

KEY
A - Anecdotal FO - Faculty Opinion E1 – Brunel and Hibbard 2006 E2 – Strempek 2008
E3 – Stover and Byers 2002 E4 – Puri 1995 E5 – Michaelsen and McCord 2006 E6 – Atchison, et. al., 2005
E7 – Carland and Carland 2002

Business academics have been discussing how to achieve higher-level objectives for some time but most curricular changes have been relatively small and incremental; add a little teamwork here; teach a little leadership there; integrate globalization, ethics, or technology

across the curriculum. Infusing an integrated curriculum with a substantial experiential component is one way to address these objectives in a more comprehensive manner.

Accomplishment of higher-level objectives was a focus of Elon's EEA program. Elon formed seven explicit higher-level objectives: (1) understanding organizational complexity, (2) exhibit/demonstrate innovative behaviors, (3) work independently, (4) work in teams, (5) develop complex work plans, (6) apply rational decision-making approaches, and (7) effectively influence group/organization through leadership skills. Assessment results found satisfactory achievement of most objectives. Other programs have presented empirical evidence (Table 3) for better interpersonal behaviors (Idaho), a more holistic understanding of business (UMass-Lowell), and more innovation and flexibility (Virginia). Positive experiences in this regard were also noted at Eastern Connecticut State, James Madison, Oklahoma, and Valparaiso. Clearly some programs have experienced positive results regarding the accomplishment of higher-level learning objectives.

Success at achieving higher-level objectives would be much more convincing with external validation from employers that students are truly prepared for the "real" world. Eight schools provide some evidence of this (Table 4). Of these, Idaho discovered a quicker initial time to hire. However, no difference was observed in initial or five-year salaries. Babson experienced a substantial increase in job placement following institution of its integrated program. Arkansas observed a noticeable increase in starting salaries and job placement success. Other schools (Boston University, Eastern Connecticut State, James Madison, Lynchburg, Elon, and Western Carolina) provide anecdotal support and have observed favorable recruiter reaction.

Table 4: Integrated Business Curricula Job Placement and Performance Experience

School	Job Placement and Performance Experience
Babson College	Substantially better (Keith Rollag)
Boston University	Recruiters impressed (FO, A)
E. Conn. State University	Very Good (A)
Elon University	Very Good (E1,A)
James Madison University	Good (A, FO)
Lynchburg College	Favorable recruiters' comments (A)
University of Arkansas	Salaries +12%, Job placement +12% Employers very supportive (A)
University of Idaho	Time to initial hire better than trad'l (E2) Initial salary comparable to trad'l Five yr. salary comparable to trad'l
Western Carolina University	Easier getting jobs (A)

KEY
E1 - Strempek 2008 E2 - Stover and Byers 2002 A – Anecdotal FO - Faculty Opinion

SUCCESSES AND CHALLENGES

This section will summarize the major successes and challenges faced by these programs and will share the advice developers and implementers of these programs have for others considering integrated programs. Table 5 lists the major success and challenges and Table 6 summarizes the advice from the pioneers.

Table 5: Integrated Business Curricula Successes and Challenges

	Practices	
School	Successes	Challenges
Babson College	Improved learning outcomes	Administrative burden on faculty
	Improved school rankings	Cross-functional faculty development
	Improved starting salaries	Quantifiable assessment mechanisms
Boston University	6000 students since 1993	Program institutionalized, tough to change Getting new faculty to commit
Central Missouri State Univ.	Similar to Univ. of Oklahoma	Similar to Univ. of Oklahoma
E. Conn. State University	Business plan development External validation (employers)	Faculty support
Elon University	Student learning outcomes	Faculty learning curve, time commitment
	Publications, events, consulting groups	
Indiana University	Highly rated program	(No information)
James Madison Univ.ersity	Business plan development	(No information)
Lynchburg College	Excellent business plans, Involvement of advisory committee	Faculty in-fighting, scheduling, faculty time commitment, costs beyond grant
Northern Illinois University	Long-term sustainabilty	Faculty continuity Continuous improvement
University of Arkansas	Improved faculty coordination/culture,	Staffing (functional depts. must staff core)
	student outcomes, employer interest	Sustaining the cooperative faculty culture
Univ. of Mass. - Lowell	Student learning outcomes	Student and faculty workload Planning and adjustment
University of Oklahoma	Student outcomes, tangible enterprises, money raised for charity	Expansion of program
University of Virginia	Student learning outcomes Increased faculty interaction, learning Improved faculty satisfaction and collaboration	Loss of faculty autonomy Larger time commitment Integrated vs. functional grades
Western Carolina University	Student learning outcomes, student retention, 12 students lobbied for continuation of program	School and university infrastructure works against integrated programs
Valparaiso University	Student confidence Team projects	Faculty time commitment Workflow scheduling

Table 6: Advice for Those Considering Integrated Programs	
School	Advice for Future
Babson College	Allocate enough planning time Develop quality integrated materials Understand and monitor resource costs
Boston University	Requires incentives for faculty. Needs top-down and bottom-up commitment.
Central Missouri State University	Similar to Univ. of Oklahoma
Elon University	Must provide faculty incentives Cultivate student team-building/leadership
Lynchburg College	Must have larger faculty to provide depth required for all section
Northern Illinois University	Must develop faculty to handle integration Faculty, admin. and staff support critical
University of Arkansas	Careful planning, patience, persistence Change management (can't force it)
University of Massachusetts - Lowell	Use outside evaluator to solve problems
University of Oklahoma	Keep relatively simple
University of Virginia	Must develop cross-functional faculty Must quickly set student expectations Each team requires strong faculty leader
Western Carolina University	Don't do it unless strong commitment from the top
Valparaiso University	Must proactively resolve role conflicts

SUCCESSES

A large and growing number of students have now successfully undertaken integrated business programs. Boston University alone has delivered its integrated program to over six thousand (6,000) undergraduate business students since 1993. Success at achieving learning outcomes has been cited by several programs (Babson, Elon, UMass-Lowell, Oklahoma, Virginia). Business plan development as an integrating mechanism has been noted as a major success at Eastern Connecticut State, Elon, James Madison, Lynchburg, and the Oklahoma. As mentioned before, both Elon and Oklahoma have seen some success with their experiential entrepreneurial components (operating enterprises). It is interesting to note that only two schools (Virginia, Arkansas) have identified any benefits derived by faculty. Virginia has noted that they have experienced increased faculty interaction, learning, satisfaction and collaboration, while Arkansas has observed a more collaborative faculty culture.

CHALLENGES

A number of specific challenges have been reported. At least six programs noted an increased faculty workload (Babson, Elon, Lynchburg, UMass-Lowell, Virginia, Valparaiso). Four of these programs are no longer operational suggesting that this may be a prime challenge for any new program to overcome.

There appears to be a substantial learning curve to negotiate before faculty come to accept and institutionalize the new approach suggesting that strong leadership and skillful change management is required to affect such a change in pedagogy. It is questionable whether grass-roots efforts from small groups of faculty could succeed without a substantial commitment and nurturing from the top. The unsustained efforts at Eastern Connecticut State, Elon, and Western Carolina were all such bottom-up initiatives undertaken by individuals or a small group of champions. All three efforts experienced substantial academic benefits, but ultimately succumbed to institutional inertia.

Some other faculty-related issues include faculty training and development (Babson, Boston University), scheduling (Lynchburg, Valparaiso), faculty continuity (Northern Illinois), loss of autonomy (Virginia), and in-fighting (Lynchburg). It seems prudent considering this lengthy list of faculty issues that any school considering an integrated program spend adequate time addressing faculty impacts at the outset.

ADVICE FROM THE PIONEERS

In the literature some advice has been proffered by various program pioneers. Table 6 summarizes these words of wisdom. The most profound advice may come from Larry Michaelsen who said that it is best to "keep it relatively simple." Complexity seems to confuse participants - especially faculty. Paradoxically, students seem to have been able to adapt to most integrated programs. Much advice seems to center on faculty issues. Babson suggests allocation of sufficient planning time and the development of quality integrated materials as well as both faculty and administrative support. Both Boston University and Elon suggest that some attention be paid to faculty incentives because faculty workloads are high, at least initially. Learning to teach and operate in an integrated way requires faculty to develop similar coordination and teamwork skills required of the students.

Faculty may also need to upgrade their own understanding of the wider business environment and subject matter so that they can be effective in a team-taught setting. The experiences at Northern Illinois and Boston University encourage formal faculty development efforts. Assuming that faculty will "figure it out on their own" is probably a faulty assumption.

A faculty member in one of the more successful programs (Boston University) suggests that both top-down and bottom-up commitment is required for a successful program and that

time and patience is required to embed a program systemically. Similar advice is offered by Arkansas, James Madison, Lynchburg, Elon, and Virginia.

Additional suggestions include planning for a slightly larger faculty due to initial workload issues (Lynchburg), recognizing that administrative and staff support will be required (Northern Illinois), and using an outside evaluator to assist the process of identifying and solving problems that will invariable occur.

Student-related factors are also important. Virginia suggests that faculty set student expectations early in the program because they will differ from expectations in previous college classes. Virginia and Elon also suggest that each student team undertaking an integrated project requires a strong faculty leader, especially when operational enterprises are involved. Elon also recommends a strong focus on team and leadership development within student groups.

In conclusion, the following lessons can be gleaned from literature and experiences of the sixteen colleges discussed in this paper:

A comprehensive assessment process and a focus on planned change is needed to provide structure and information needed for institutionalization of integrated curricula. In addition, support is needed at all levels of the institution (see Table 6).

Successful adoption of a curricular innovation involves a systematic change process that includes sustainability as a goal. It is essential to develop explicit plans for sustainability, institutionalization, continuous improvement, and a process for including a critical mass of faculty in the adoption of the innovation.

Significant and dedicated resources are key to success. Support is needed from all level of the institution. Temporary funding from grants does not provide the sustained effort necessary to support such complex endeavors. An institution must be willing to continue the same levels of funding after the grant period runs out.

An institution must be large enough to have a depth of faculty from key disciplines so that instructors do not become burned out. While a faculty champion for the approach is often necessary, it requires a sustained commitment from a broader base of faculty representing the array of disciplines represented in the integrated program. An integrated approach cannot survive on a single (or small group) faculty member's efforts.

DISCUSSION AND ADVICE

The question still remains: Why do some well-funded programs fail while other less endowed programs succeed? How can curricular innovations more consistently be guided toward institutionalization?

In order to determine why innovations succeed or fail and how to enhance the chances for long-term success, there must be an explicit process of assessment for continuous improvement (i.e., formative assessment) built in from the start. Such a process involves four elements. The first is a clear sense of learning outcomes and the program goals intended to foster them. Second, description of the educational activities and resources needed to accomplish each learning and program outcome is required. Third, programs must identify evidence and sources of information that will be used to demonstrate the accomplishment each outcomes and the criteria and standards for judging success. Fourth, a process must be devised for using evaluation information to guide continuous improvement and institutionalization. In summary, one must consider the extent that assessment for the purpose of continuous improvement and/or institutionalization was an integral part of a program.

However, it takes more than information to ensure that a curricular innovation will become institutionalized. "Innovation adoption is a process not a decision-point — a process that each innovation user experiences individually" (Hall, et. al., 1975, p.52). It takes planning on the part of administrators and faculty to move a program from innovation to institutionalization.

Literature on planned change and the adoption of innovation provides useful insights in this regard. First, there must be faculty ownership of the innovation beyond those initially involved in its development and implementation. It is essential for faculty to have a sense of ownership so that they maintain a commitment.

In addition, it must be recognized that there are significant differences between innovators and the majority of faculty members. Early adopters tend to be revolutionary, visionary, project-oriented, risk-takers, experimenters, self-sufficient, and horizontally connected, while the majority of faculty are likely to be followers, evolutionary, pragmatic, process oriented, risk averse, tied to proven practices, need support, and vertically connected (Geoghegan, 1994). Therefore, faculty should be supported through various levels of adoption from nonuse to integration and renewal by more innovative faculty colleagues and administrators who are sensitive to their areas of concern, that is, awareness, informational, personal, management, consequence, collaboration, and refocusing (Hall, et. al., 1975; Hall, et. al., 1979).

The adoption of a substantial curricular innovation also needs strong leadership so that it remains flexible and adaptable to changing needs and is not merely an *ad hoc* effort. In this regard project leaders and other administrators (e.g., deans and department chairs) prepare the organization for change, define and shape issues giving rise to innovation, build a community wide coalition in support of change, provide funding and other incentives, and act as sponsors of change (Curry 1992). In effect, "leaders … mobilize human, material, and symbolic resources" (Rosen 1984 in Curry 1992, p. 20) in support of an innovation.

In the case of an integrated undergraduate business curriculum, leaders have to be able to communicate to the faculty why this innovation is worth their effort by explaining the relative advantages of the innovation yet emphasizing its compatibility with current practice. They also

must reduce complexity so that elements of it the innovation can be tried out and positive results can be quickly and clearly observed (Rogers 1995).

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AN EXPLORATORY ANALYSIS OF STUDENT EXPOSURE TO PERSONAL SELLING: AN MBA PERSPECTIVE

Charles E. Pettijohn, Nova Southeastern University
Linda S. Pettijohn, Nova Southeastern University

ABSTRACT

Salesperson selection has been a vexing challenge for sales managers for generations. One source of new sales representatives has been found on college campuses. As the complexities of many sales jobs have increased, many firms have responded by recruiting students with MBA degrees. Based on the increasing importance of recruiting MBA students, this research represents an exploratory analysis of MBA student exposure to sales and sales-related concepts. One-hundred seventy MBA students provided information regarding the degree to which sales concepts were discussed in their graduate marketing classes. These students also indicated the likelihood of engaging in specific sales-related activities/behaviors. The findings indicate only sixty percent of MBA students were exposed to sales concepts in their MBA courses. The findings also reveal that exposure to sales-related concepts in MBA courses is positively related to the students' likelihood of engaging in positive sales activities/behaviors. Based on the findings implications for educators were discussed.

INTRODUCTION

For most businesses, maintaining an exceptional sales force has been a continual challenge. Today, these challenges seem greater because demand for sales talent has been described as 'skyrocketing' (Galea 2006; Hoffmeister 2008). Increases in demand are illustrated by reports indicating it is taking longer to fill open sales positions and that compensation in sales is growing at a rate double that of other corporate positions (Nachnani 2007). A separate report revealed the results of a survey of managers which concluded that the most difficult job to fill with qualified applicants was the sales job (Galea 2006). Based on these reports, it could be suggested that firms need to continually seek new sources of potential sales personnel. Colleges and universities represent one of the sources identified to cope with the increased demand for sales talent (Bristow, Gulati, Amyx and Slack 2006; Hoffmeister 2008; Nachnani 2007; Simon 2006). One result of the current recruiting focus of seeking sales talent from students at colleges and universities is that sales has recently been described as one of the top 10 jobs for college graduates (National Association of Colleges and Employers 2006).

While businesses recognize college graduates represent a prime source of talented individuals, these firms also realize these graduates need proper backgrounds to succeed in sales. Companies are seeking individuals who have an understanding of sales and an appreciation of the importance of sales because these attributes reduce both training and associated selection costs (Sales and Marketing Management 2002). According to one recruiter, selecting students who have focused on sales offers ". . . the difference between (hiring) a student who wants to make sales a profession, or hiring a student who majored in marketing but couldn't get a job in advertising (Simon 2006, p. 40)."

The sales role is becoming increasingly complex changes in the sales position have been described as an organizational "shift from selling products to selling solutions and as managing complex internal and external silo-spanning deals" (Nachnani 2007, p. 15). Thus, the sales job has been described as changing from one in which the main focus was on making the sale to one in which the position requires a variety of additional responsibilities. These additional responsibilities include: developing knowledge about customers' businesses, making operational decisions on topics relating to resources, developing new services, understanding buyer behavior, gathering information, conducting market analyses, developing sales forecasts, and using new technologies (Ellis 2000).

As a way of responding to the challenges and complexities facing today's salesperson, firms are increasingly seeking individuals with Masters in Business Administration (MBA) degrees (Pullins and Buehrer 2008), or are funding graduate studies for their salespeople in the belief that an MBA will give their sales representatives advantages in the competitive and complex sales industry (Butler 2007). A quote attributed to John Lanning, Sales & Marketing recruiter and Training Manager for 3M states, "What is going to be needed in the near future for those individuals wishing to be promoted into sales leadership positions is an MBA. . . The belief is that an MBA allows the individual to blend textbook knowledge of sales strategy, sales management, sales ethics, etc. with what 3M calls the 'voice of the customer'" (Pullins and Buehrer 2008, p. 15). These arguments indicate firms are not only looking to universities as a prime source of new salespeople, companies are even reaching into graduate programs. A report by Simon (2006) indicates that students are recognizing the importance of sales opportunities. For example, at MIT's Sloan School of Management a sales-related course in their MBA program was offered, this course had an enrollment of 110 students, but only 55 open seats. The logic underlying the course offering in MIT's MBA program is based on the fact that MBA employment opportunities will generally require sales skills.

However, what do MBA students know about sales? Have MBA students been exposed to personal selling concepts in their curricula? What sales-related topics were included in classroom coverage regarding personal selling? Has exposure to personal selling concepts affected their knowledge base regarding sales? Has exposure to personal selling concepts affected their behaviors? The purpose of this study is to explore these subjects by examining three primary issues. First, the research will assess whether sales has been included as a topic in

the marketing courses of MBA students. Second, sales-related topics included in the course coverage of the marketing course will be identified in the study. Finally, the research will assess the effects inclusion of sales-related topics in the MBA course curriculum has on MBA student sales behaviors.

RELATED RESEARCH

Recruiting and selecting salespeople has been described as one of the most difficult tasks faced by sales managers. One of the reasons for the challenging nature of this task is the fact that the costs of poor hiring decisions are estimated to be 3 to 7 times the individual's annual income (Hrehocik 2007). Additionally, other costs include such adverse affects as poor morale, increased training requirements, additional managerial time, lost sales revenues, etc. Corresponding with the challenges of recruiting and selecting an exceptional sales force is the fact that demand for salespeople is increasing. It has been estimated that demand for salespeople will increase over the foreseeable future and in response to these demand increases sales force recruiters will seek salespeople from university campuses (Amin, Hayajneh and Nwakanma 1995; Bristow, Gulati, Amyx and Slack 2006; Michaels and Marshall 2002). As employer demand for salespeople escalates and student demand for sales courses increases, administrators and marketing faculty increasingly seem to agree that sales is an important portion of the marketing curriculum. This is reflected in the increases in resources devoted to sales education to meet those demands (Bristow, Gulati, Amyx and Slack 2006; Gurvis 2000). According to Muehling and Weeks (1988) college students are also recognizing sales is a career which requires a college degree.

College students are attractive to sales recruiters because they are amenable to training and are talented (Gurvis 2000; Stevens and MacIntosh 2002-2003). However, it has also been noted that students who have a greater knowledge of the sales role, gained by virtue of their curricula more positive perceptions of sales careers. Research has shown that students completing a sales course perceived selling as more rewarding, more satisfying, more fun and exciting and more challenging than did those not completing a sales course (Bristow, Gulati, Amyx and Slack 2006). Additionally, these researchers point out individuals completing a sales course feel that they are more skilled and consumer oriented.

However, it should be noted that not all university students are positively predisposed to careers in personal selling (Bristow, Gulati, Amyx and Slack 2006; Cook and Hartman 1986; Dubinsky and O'Connor 1983; Lagace and Longfellow 1989; Lysonski and Durvasula 1998; Swenson, et al 1993). Students' attitudes toward personal selling may be adversely affected by the students' lack of awareness of the high levels of professionalism required of salespeople in business-to-business sales and the fact that students often underestimate the level of formal education required (DelVecchio and Honeycutt 2002; Muehling and Weeks 1988).

While sales employers are actively recruiting salespeople at universities and while students desire courses in sales, business schools have been described as failing to offer an adequate number of personal selling courses (Michaels and Marshall 2002). These authors base their contention on the fact that relatively few universities involved in the National Conference in Sales Management offered 'stand alone' courses in Personal Selling. Supporting this perspective are research findings of a survey of 114 U.S. Colleges of Business Administration indicated more universities offer Sales Management courses (87%) than Personal Selling courses (71%) (Parker, Pettijohn, and Luke 1997). This research also indicated 'only' a small percentage offered courses in both Personal Selling and Sales Management (17%) and a still smaller percentage (12%) offered a course titled Advanced Selling. These statistics indicate sales coverage may not be commensurate with demand from either the employers' or the students' perspectives.

The existing research shows recruiters for sales-related positions are increasingly seeking new salespeople on university campuses. Research also reveals that the skill levels required for success in sales positions has experienced corresponding increases (Chang 2007). In fact, changes in the requisite levels of sales skills have been described as follows, "(salespeople) are expected to be skilled at business acumen, critical thinking, understanding supply chain management, and a whole list of things that wouldn't have been on the list before. They are in fact business managers, and companies find it difficult to find people who not only understand what a sales career is, but who want to pursue a professional career in it" (Chang 2007, pp. 22 and 23). These complexities contribute to the desire to employ more MBAs in sales roles (Pullins and Buehrer 2008). As sales positions become more challenging, more salespeople with MBAs will be desired as a means of coping with these complexities (Butler 2007; Pullins and Buehrer 2008; Simon 2006).

The research reviewed seems to indicate four major points. First, companies are seeking qualified salespeople and one source consists of graduates from colleges and universities. Second, demand for sales positions continues to expand and corresponding with this expansion is an increase in demand for sales-related courses and an increase in supply of sales-related courses. Third, the sales job is becoming more complex and challenging, thus requiring a wide array of business and interpersonal skills. Finally, the research suggests one response to the increasing requirements of the sales position is to recruit and hire MBA graduates. However, the literature does not provide information regarding the inclusion of sales in MBA student curricula. The literature also does not provide information regarding how MBA student knowledge of sales relates to those students' behaviors. The purpose of this study is to address these voids in the literature by exploring the degree to which the courses taken by MBA students include sales-related topics and the influence the inclusion of these topics might have on MBA student behaviors.

METHODOLOGY

Since the study is designed to evaluate the attitudes of MBA students regarding aspects of sales careers in personal selling, the first step in the research process entailed the selection of an appropriate sample. Based on the research objectives, MBA students enrolled in the core marketing course at an AACSB accredited university located in the Midwest with an enrollment of over 20,000 students was selected as the source of the sample. A total of 178 students enrolled in the core MBA marketing course (4 separate classes) represented the sample.

Survey instruments were given to the professor teaching these classes and students were given the opportunity to complete the surveys during class time. The questionnaires consisted of questions designed to first assess, whether personal selling concepts were included as a part of the marketing classes the MBA students had taken. If students stated that personal selling concepts and techniques were included in their marketing classes, they were then asked to identify specific topics included in these classes. These topics included subjects such as product knowledge, company/industry knowledge, sales skills, customer knowledge/CRM, and customer satisfaction.

If sales skills were included as a segment of the student's marketing class, focus shifted to the specific skills included. These skills were identified by assessing the skills included in three popular personal selling textbooks (Futrell 2008; Manning and Reece 2007; Weitz, Castleberry and Tanner 2004). Using these books, twelve critical skills were identified. Students were then asked to identify whether a particular skill had been included in their marketing classes.

Based on responses to the question designed to determine whether students possessed sales experience, those having experience were asked to identify their sales behaviors/activities. The final section of the survey then entailed an assessment of the degree to which MBA students engaged in specific sales activities. A list of specific behaviors/activities in which a salesperson might engage was developed using previous research which had examined sales skills (Chonko, Caballero, and Lumpkin 1990; Pettijohn, Pettijohn, and Taylor 2007). Based on their research, twenty-five skills/behaviors were identified. Students were asked to indicate whether the specific skill/behavior was important in their sales activities using a seven point Likert-type scale (7 = most important and 1 = not important at all). Thus, students who possessed sales experience were asked to identify their perceptions of the relative importance of these skills and behaviors in their sales activities.

FINDINGS

A total of 170 students completed useable surveys, for a response rate of 96 percent. Of those responding, the majority, 68 percent were of traditional college age (18-24) and 29 percent

were between the ages of 25 and 34. Also, the majority of students were male (55%) and all responding had completed undergraduate degrees.

As shown in Table 1, personal selling was included as a topic in 'only' 60% of the students' marketing classes. When sales topics are a part of the class, Table 1 indicates that the subtopics most likely to be included were: sales skills (90.2%), product knowledge (81.4%), customer satisfaction (81.4%), customer knowledge (79.4%), and company knowledge (64.7%). Thus, of the 170 students responding sixty percent stated sales, as a topic, was included in their marketing class(es). Of those students who were exposed to sales, 93 of these students stated that sales skills were a portion of the discussion of sales (54% of the total population) and only 66 students discussed company knowledge as a component of their classes (39% of the total).

Table 1 :Personal Selling and MBA Course Coverage

Topic	Included – N (%)	Not Included – N (%)
Personal selling was included in marketing class(es)	102.(60.0)	68 (40.0)
If personal selling was included:		
Product knowledge was included as a portion of this topic	83 (81.4)	19 (18.6)
Company knowledge was included as a portion of this topic	66 (64.7)	36 (35.3)
Customer knowledge was included as a portion of this topic	81 (79.4)	21 (20.6)
Customer satisfaction was included as a portion of this topic	83 (81.4)	19 (18.6)
Sales skills were included as a portion of this topic	92 (90.2)	10 (9.8)
If sales skills were included:		
Approach was a portion of the sales skill segment	41 (44.6)	51 (55.4)
Questioning skills were a portion of the sales skill segment	57 (62.0)	35 (38.0)
Prospecting was a portion of the sales skill segment	33 (35.9)	59 (64.1)
Qualifying was a portion of the sales skill segment	35 (38.0)	57 (62.0)
Need Identification was a portion of the sales skill segment	43 (46.7)	49 (53.3)
Presentation was a portion of the sales skill segment	55 (59.8)	37 (40.2)
Demonstration was a portion of the sales skill segment	24 (26.1)	68 (73.9)
Dealing with sales resistance was a portion of the sales skill segment	33 (35.9)	59 (64.1)
Adaptive selling was a portion of the sales skill segment	37 (40.2)	55 (59.8)
Closing was a portion of the sales skill segment	32 (34.8)	60 (65.2)
Negotiating was a portion of the sales skill segment	38 (41.3)	54 (58.7)
Follow-up was a portion of the sales skill segment	38 (41.3)	54 (58.7)

If sales skills were included, students were then requested to identify specific skills which were included. The sample of respondents, given this criterion, is reduced to 93 from the original sample of 170. The findings indicate the most discussed sales skill topic is questioning, with 62% of the respondents stating questioning was included. Only one other topic was identified by the majority of students as being included in their marketing class, this topic is the one concerned with the presentation (a portion of the sales skill segment for 60% of the students). Five skill topics were identified by less than 40% of the students as being included in their courses. As indicted in the table, the least emphasized skill was the demonstration (26%), followed by closing skills (35%), resolving sales resistance (36%), prospecting for new business (36%), and qualifying (38%). The remainder of the topics (approach, need identification, adaptive selling, negotiating, and follow-up were included for approximately 40 percent of the students responding. These findings indicate a maximum of 33 percent of the total sample was exposed to the sales skill of questioning in their marketing classes and a minimum of 14 percent were exposed to the skill of demonstrating.

As indicated in Table 2, 73 of the 166 students (44%) responding to the question pertaining to sales experience indicate they have some level of experience in sales. Of those with experience, the majority have less than two years (53.4%) of sales experience. Retail sales is the area in which most students have experience (64.4%), however, service sales is also well represented (33%).

Table 2: MBA Student Sales Experience

Experience in Sales	Have Experience- N (%)	Do NOT Have Experience – N (%)
I have experience in sales.	73 (44.0)	93 (56.0)
IF experienced in sales, type of sales experience:		
Retail	47. (64.4)	26 (35.6)
Retail Service	19 (26.0)	54 (74.0)
Wholesale (Business-to-Business)	4 (5.5)	69 (94.5)
Manufacturer (Business-to-Business)	7 (9.6)	66 (90.4)
Service (Business-to-Business)	24 (32.9)	49 (67.1)
Years of Experience		
Less than 1 year	20 (27.4)	
1-2 years	19 (26.0)	
2-3 years	22 (30.1)	
3-4 years	8 (11.0)	
More than 4 years	4 (5.5)	

To identify whether the inclusion of sales in their marketing classes affected their attitudes toward specific sales activities, a series of t-tests were conducted. Table 3 provides the results of this comparison. A cursory examination of the results indicates that in virtually every

case, the students' perceptions of the importance of a sales activity is greater when their marketing classes included a sales component. Given that only the few students who had sales experience (only 73 students) were included in this portion of the analysis, a significance level of .10 was used to identify significant differences.

Table 3 :Skills/Behaviors and Sales Education

Skill/Behavior	Overall Mean (sd)	Included Mean (sd)	NOT Included Mean (sd)	t(p)
I always approach customers using the proper approach techniques	4.8 (1.5)	4.8 (1.5)	4.8 (1.5)	.2 (.80)
Prospecting is a regular portion of activities	**4.1 (1.5)**	**4.5 (1.4)**	**3.6 (1.6)**	**2.5 (.01)**
Most of my prospects are gained thru referrals	4.1 (1.7)	4.4 (1.4)	3.8 (1.9)	1.6 (.12)
I am capable of resolving most customer's needs	**5.1 (1.5)**	**5.6 (1.2)**	**4.6 (1.7)**	**2.9 (.01)**
I try to figure out what a customer's needs are	5.4 (1.5)	5.6 (1.3)	5.2 (1.7)	1.2 (.22)
Price should be used as a primary method of sales	3.8 (1.6)	3.9 (1.6)	3.6 (1.6)	1.0 (.32)
I rarely waste time	4.3 (1.4)	4.5 (1.5)	4.1 (1.3)	1.2 (.23)
I am always courteous toward my customers	5.5 (1.6)	5.6 (1.3)	5.5 (1.8)	.4 (.70)
*What I say is more important than what the customer has to say	3.0 (1.7)	3.1 (1.6)	3.0 (1.9)	.2 (.84)
I know about the products that I sell	**5.6 (1.6)**	**6.1 (1.1)**	**5.2 (1.9)**	**2.2 (.03)**
I am available when customers need assistance	5.7 (1.5)	6.0 (1.1)	5.4 (1.7)	1.6 (.11)
I listen to what the customer has to say	**5.7 (1.6)**	**6.0 (1.3)**	**5.3 (1.7)**	**1.8 (.08)**
***I don't really enjoy assisting customers**	**3.2 (1.8)**	**2.8 (1.5)**	**3.6 (2.1)**	**1.9 (.06)**
*I only react and respond to customer requests	3.5 (1.4)	3.3 (1.2)	3.7 (1.5)	1.1 (.29)
I know the answers to customers' questions	5.1 (1.3)	5.3 (1.3)	4.9 (1.4)	1.2 (.25)
I ask questions to get them to talk	5.2 (1.5)	5.2 (1.3)	5.1 (1.6)	.4 (.70)
I try to learn as much as possible about needs	5.3 (1.5)	5.4 (1.3)	5.2 (1.6)	.5 (.59)
I use leading statements to get customers to talk	5.0 (1.5)	4.9 (1.6)	5.0 (1.5)	.4 (.69)
I help my customers understand and visualize	5.1 (1.5)	5.4 (1.5)	4.9 (1.5)	1.4 (.16)
I make clear and complete presentations	5.0 (1.5)	5.1 (1.2)	4.4 (1.7)	1.9 (.06)
I demonstrate products/services to the customer	4.9 (1.6)	5.1 (1.8)	4.8 (1.4)	.9 (.39)
I learn about needs prior to suggesting products	5.2 (1.6)	5.5 (1.2)	5.0 (1.9)	1.3 (.20)
I often suggest complementary products	4.8 (1.7)	5.2 (1.4)	4.5 (1.9)	1.6 (.11)
I work to make customers feel appreciated	**5.4 (1.5)**	**5.8 (1.0)**	**5.0 (1.8)**	**2.2 (.03)**
*I am often snobbish and condescending	2.8 (1.7)	3.0 (1.8)	2.5 (1.7)	1.0 (.32

As indicated in Table 3, students whose marketing courses included personal selling were generally more positive in their ratings of certain sales skills/behaviors than were those whose marketing courses did not include personal selling. Further, these differences were significantly more positive with regard to their ratings of six skills/behaviors. First, these students were significantly more likely to contend that prospecting is a regular activity for them. Students exposed to selling in their classes were also significantly more likely to feel that they are capable of resolving most customers' needs. Third, students who had a selling module included in their marketing classes were more likely to indicate that they know the products they sell. Students

who were exposed to sales in their marketing classes were also significantly more likely to indicate they listen to what their customers had to say. A fifth difference is based on the fact that students who had sales in their marketing classes were significantly less likely to state that they really don't enjoy assisting their customers. Finally, students who had sales included in their marketing courses were significantly more likely to work to make their customers feel appreciated.

DISCUSSION

Due to the many complexities of personal selling activities, firms are increasingly seeking MBA students for recruitment for sales positions. Yet, no research has been discovered which has assessed MBA student educational backgrounds in sales and how they might affect behaviors in sales careers. This research represents an initial investigation into MBA students' educational experiences, experiential backgrounds and behavioral predispositions in sales positions and as such represents an exploratory analysis. From an educator's perspective, the research highlights potential threats and opportunities which may exist in terms of maintaining viable and vital MBA programs. Butler (2007) reports an additional emphasis in MBA programs on 'soft skills'. These skills include communications, leadership, and teamwork. According to Butler, schools are increasingly offering courses in ethics, negotiation and persuasion, business writing and the arts. Thus, notable MBA programs are recognizing that significant aspects of sales (i.e. communication, negotiation and persuasion) are increasingly significant in their programs. Such arguments lend support to the concept that viability in MBA programs may require an additional focus on sales-related skills and understanding. From an educator's perspective, these results suggest that a greater emphasis on sales may be warranted in the MBA curricula. Such an emphasis may include topics more tangentially related to sales, such as persuasion and/or negotiation. These topics may prove more amenable to traditional academics who perceive sales as lacking in either theory or challenge; yet both persuasion and negotiation may be used by students in a myriad of positions (obviously including sales).

This research provides an indication of the 'current position' with respect to these skills in an AACSB accredited MBA program of approximately 400 students. As the findings show, considerable improvement is possible in terms of including sales as a topic in the marketing classes taken by MBA students, as only 60 percent report its inclusion in their classes. Further, the research shows that the inclusion of sales affects students' perceptions of their behaviors with regard to widely accepted sales practices. Such a finding has implications for those with an interest in employing MBA graduates in positions requiring sales skills, as individuals exposed to sales in their marketing classes tend to report higher incidences of positive sales behaviors (skills). This finding suggests that MBA graduates who have been exposed to sales by virtue of their marketing courses will also possess a greater appreciation of the importance of specific sales skills which have been recommended for effective sales results.

LIMITATIONS AND CONCLUSIONS

While the study does provide an initial insight into MBA student educational backgrounds in sales and how those backgrounds might affect their behaviors in sales careers, it does have its limitations. First, the study pertains to one group of students attending a single university, thus limiting the degree to which the results might be generalized. Second, the survey instrument requested students to indicate their perceptions with regard to their educational experiences, their work experience, and their behavioral predispositions. Consequently, the research is limited by the survey instrument and by the ability of the students to recall their experiences and truthfully discuss their behaviors. Finally, time constraints and privacy issues limited the number and type of question which could be asked of students, certain questions which might have enhanced the findings were not included in the survey instrument. Future research should be designed to address these limitations by expanding the sample and by expanding the survey instrument. Additionally, future research might explore the educational and experiential perceptions of sales held by both graduate and undergraduate students. This research could help identify differences between graduate and undergraduate students and help indentify educational efforts that might enhance the transference of sales knowledge to these students and subsequently their behaviors in these positions. These objectives and many others could be addressed by future research.

However, given these limitations, certain conclusions may still be developed. The research reported is not entirely positive as it relates to the educational efforts directed toward MBA students. These findings indicate that educational efforts may pay dividends to students as they affect their behavioral predispositions in sales. As these factors are recognized, it may be suggested that universities offering MBAs might be well-advised to direct greater efforts toward sales and sales-related concepts to enhance both skills and career readiness upon graduation.

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STUDENT-MANAGED INVESTMENT FUNDS: A FRAMEWORK FOR REGIONAL SCHOOLS

Anne Macy, West Texas A&M University

ABSTRACT

Finance programs at regional schools face two main challenges. As the job market for finance graduates has become increasingly competitive, finance programs are searching for ways to make their graduates more marketable. Second, limited resources and a focus on student assessment have forced departments to alter programs that can provide tangible results. One solution to these challenges is a student-managed investment fund. This paper examines how to design a successful student fund at a regional school and use it to assess and improve the finance program. Survey results on student attitudes concerning the student-managed fund are also presented.

INTRODUCTION

Student learning has always been the goal of education. The "chalk and talk" method has been the traditional technique of teaching, but this method may not mesh well with current students. Students who are used to video games and the Internet can become bored by the lecture format, especially since most of their classes use this method. Instead, students desire formats and techniques that are more engaging. Students who are more engaged do better in the classroom and retain more of the material (NSSE, 2006).

While the National Survey of Student Engagement points out the importance of engaging students, the scores earned by the colleges and universities can be misleading. Chatman (2007) finds that students in similar disciplines report more similar gains in skills than students at the same institution but in a different major. Furthermore, the exams and surveys that institutions use do not adequately measure student learning because they don't assess critical thinking and communication skills. Employers seek graduates with higher-order skills along with the requisite discipline knowledge (Epstein, 2007). Communication skills is commonly mentioned as a skill business students lack (McWilliams, 1994).

Students learn in a variety of ways but students who are active learners learn and retain more than more passive students. A question for finance programs is how to teach students to not only apply the concepts but also do so in way that allows students to demonstrate these skills for potential employers. As higher education becomes more focused on accountability of students learning, programs need to develop ways to meet this goal. One way is to let the students be portfolio managers including making the investment decisions and suffering any

negative consequences. This allows finance programs to close the loop on curriculum and assessment. If the students are able to tangibly exhibit their skills gains to employers, the value added by the finance curriculum is clear and accountable.

While there was research in the 1990s on the basic design of a student-managed investment fund, there has been a dearth of research on how to use the fund to assess the finance curriculum or how the fund can play a role in connecting the finance program with alumni. Furthermore, other than a cursory nod that challenges exist at smaller schools, there has been no research on tangible assistance to designing a fund and to fit it into the curriculum – assessment paradigm. The small amount of research or news articles has been on the performance and asset choices of student funds.

This paper is unique in that it presents the role of the student fund in the finance program and, in particular, how it can be part of the assessment process for the major. The first sections present an overview of student funds and the role in of a fund in program assessment. Then the framework for how to design the fund, which can compensate for the initial constraints faced by smaller schools, is presented. The framework acts as a guidebook leading the students' decision-making process while recognizing the fund's role within the finance discipline. This is expanded in the section on learning objectives and ties the objectives to the curriculum of the CFA and CFP designations. Survey results from the portfolio fund students are presented in the sixth section followed by conclusions in the last section.

OVERVIEW OF STUDENT-MANAGED INVESTMENT FUNDS

Active learning has been shown to increase student involvement and retention of information (Kolb, 1981). However, the active learning is usually within the classroom as case studies (Carlson and Schodt, 1995; Palmini, 1996), team projects (Bartlett, 1996), or games (Angel, 1994; Gardner, 1994). Student-managed investment funds provide active learning but with the real-world conditions desired by today's employers.

Student-managed investment funds are portfolios that are completely managed by student groups. The students make the buy and sell decisions concerning investment choices with actual money. The funds provide real world experience for students while cementing the theories learned in class. Not only are student funds an applied teaching tool, student decisions regarding the management of the fund along with fund performance can be used to assess the finance program.

Student funds also cross over into the business world and provide a connection for finance programs. Not only is the job market more receptive to students with money management experience, but also the students have more confidence in their abilities. The increase in reputation has a positive impact on the finance program. This positive externality can be carried over to alumni by increasing linkages. The alumni monitor the fund to see how their

picks and the overall fund are doing. The fund becomes a vehicle not just for friend-raising but also for fundraising in the community.

Because the funds are actual money instead of a stock market game, student-managed investment funds present certain challenges to the faculty advisor. An initial issue with student funds is which students are allowed to participate. The students chosen must be aware of their fiduciary responsibility to the university. The students who make the decisions must be capable of making sound investment decisions that are in accordance with the frequency of fund trading.

The number of student-managed investment funds has grown quickly. There are over 150 active programs in the United States. Student-managed investment funds are most common at large, doctorate-granting institutions. The larger schools have access to greater funds and students. This allows the investment funds to have many restrictions and rules for the design and daily management of the student fund (Block and French, 1991; Bhattacharya, 1994; Johnson, Alexander, and Allen, 1996; Lawrence, 1996; Kahl, 1997; Dolan and Stevens, 2006). For example, the classes may be by invitation only and restricted to senior-year or graduate finance majors.

This flexibility is not available to regional schools. A regional school is hard to define succinctly; however, for the purposes of this paper, it is a school without priority for state resources and fundraising. In addition, regional schools have a smaller student base and draw from the immediate area instead of nationally. Due to faculty availability constraints and smaller student numbers, the student-managed portfolio may be a part of the portfolio theory class in the finance curriculum instead of as a stand-alone course. The students may be required to take the class instead of selected to be in the class. In other words, the faculty advisor cannot restrict access to the course. In addition, students at smaller schools tend to work and have families. The outside commitments restrict the amount of time the students can devote to the fund. For the students, the amount of time they will spend is equivalent to the amount they would normally spend for a class. The fund may only make trades a few times a year instead of weekly or monthly as in larger schools making the minimum holding period one year. These characteristics present obstacles to a successful student-managed investment fund.

With regards to assessment, regional schools may not have the faculty resources for several distinct assessment measures. Instead, efficiency requires that assessment be tied into existing courses.

The host institution for this research is a mid-sized regional university in the southwest. The student-managed investment fund has a value around $600,000 invested in stocks and cash built from an initial donation of $50,000 seventeen years ago. Students study the portfolio and present buy and sell recommendations to the entire class. The class votes on the recommendations. A smaller group of students, called portfolio managers, review the analysis reports, the recommendations and the votes. These students finalize the decisions and present the results. The portfolio class is a one-semester course and buy/sell decisions are done yearly at the end of the class.

ROLE IN ASSESSING FINANCE CURRICULUM

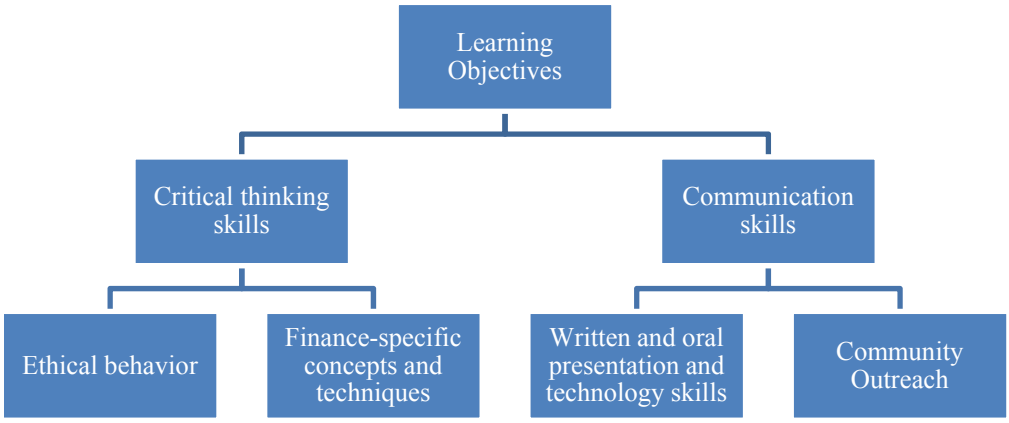
The role of a student-managed investment fund in the finance curriculum is three-stage. First, it is a tangible teaching tool that students use to apply the theories of portfolio management. Because of the applied nature of a student fund, it serves as the capstone experience for the finance program. In the second stage, the finance faculty can assess the success of the program at meeting the learning objectives and make any necessary changes for program improvement. The final stage is to ask the students, alumni and employers to assess the program's ability to meet each group's needs. The last two stages involve closing the loop on assessment of the program both internally and externally.

As the role of assessment increases, the second and third stages gain in importance and necessity. Experimental courses provide a natural method for assessing programs (Walstad, 2001). Finance programs tend to use exam-based methods for assessing curriculum (Redle and Calderon, 2005). However, this process overlooks a vital part of critical thinking skills: the ability to communicate the analysis. Finance majors respond that they are comfortable with the mathematics of analysis but not the communication of the results (Chatman, 2007).

The main learning outcomes for a finance program within a business program are both theoretical and practical. Student will demonstrate knowledge of finance-specific principles such as the risk-return relationship, term structure of interest rates, efficient capital markets, and agency problems. Furthermore, students will demonstrate the ability to apply finance-specific fundamentals and critically interpret and solve problems related to time value of money, investment analysis and corporate finance. In addition to the traditional financial knowledge learning objectives, finance curriculums usually require proficiency in basic computer application programs. Since the scandals in the finance industry, ethics has moved from an implicit learning objective to an explicit learning objective. Finally, the finance program should prepare students for careers in banking, financial planning and corporate finance. Thus, the finance curriculum is expected to meet four global learning objectives: finance-specific knowledge, written and oral presentation and technology skills, ethical behavior, and community outreach (see Figure 1). The objectives can also be divided into either critical thinking skills or communication skills.

The student-managed investment fund meets these goals in several ways. The key idea is to design an assessment tool that allows the students to demonstrate their skill gains. The stock or bond analyses that the students typically create while working on the fund is the natural connection. Each student is able to show the mathematics of the calculations but also explain what the analysis means to the reader. Instead of taking an exam and choosing the best answer, students are forced to express the meaning behind the numbers in their own words, which creates the link between the critical thinking skills and the communication skills.

Figure 1



The process is similar to humanities disciplines that have students create a portfolio of projects throughout the curriculum. However, for efficiency, the asset analysis is one major project that encompasses all the main topics in security valuation. Finance programs tend to be much larger than history or speech programs, and professors don't have the time for repetitive assessment. Furthermore, because of the integrated nature of a finance program within a BBA degree, having an end of curriculum project allows the student to demonstrate cross-discipline knowledge.

The global objective of finance-specific concepts and techniques is the most easy to demonstrate. As students apply the ideas of investment analysis and portfolio management to the fund and individual assets, they are developing the key connection between the theory and the application. For example, finance students are well-versed in the theory of time value of money. Analysis of the fund requires that students calculate the expected future price of each stock in the fund or considered for addition to the fund under different macroeconomic conditions. The students learn the ambiguity of the actual number calculated because of the number of estimates required in the computation. As the students alter the estimates and calculate a range of prices, the students apply sensitivity analysis and how to critically interpret earnings and price projections.

Using computer applications such as Microsoft Excel provide students with the needed skills for complex computations. But technology is integral to communication. Thus, having students use Microsoft Publisher for their stock reports allows them to learn a new application plus it teaches them how to communicate the ideas in an attractive format. Furthermore, the students have a tangible item for their portfolio for the job market. The students can post their reports on the Internet for sharing with alumni and employers, which generates a connection with the finance program's community.

Including the finance community helps to close the loop for the finance program. The student-managed investment fund asset choices are always of interest to alumni of the program. An implicit benefit of the fund that employers notice is how the students handle an asset that is not successful. The ability of a student to accept and learn from failure is a desired attribute that the fund allows some students to display. In addition to the basic community relations, the student-managed investment fund is a tie to alumni for fundraising. Alumni are much more likely to give to specific projects, especially when they can see the results.

Perhaps the most overlooked role of the student-managed funds is the emphasis on ethical behavior. The funds are real and the students must recognize their fiduciary responsibility with managing those funds. By instilling in the students how the earnings will be used, the students are less likely to view managing the fund as a game and instead, really consider which assets will help the fund achieve its desired risk-return relationship and diversification.

The substantial application tool that the student-managed fund provides allows it to be the capstone experience for the finance program. Not only are the majority of key finance concepts covered but so are the main computations. All of this is done within the constraints of fiduciary responsibility, which further helps students develop their ethical compass.

The fund becomes the key assessment tool for the finance program. Student papers and presentations can be used to assess student thought process and student ability to apply the theory to actual monies. Overall portfolio performance provides a tangible way to evaluate student knowledge versus major indices, major mutual funds and other student-managed investment funds. The finance faculty is then able to make recommendations for program and curriculum improvement. The results of the student fund and the assessment process can then be used to market not just the finance program but also the finance majors to alumni and the employers.

STUDENT-MANAGED FUND FRAMEWORK AT A REGIONAL UNIVERSITY

Regional schools face unique challenges in regards to designing a student-managed investment fund. The first challenge exists even before the course begins. The finance faculty member may not be able to control who is in the course. By allowing all finance majors to take the class and participate, more students become involved. The inclusion of a mixture of student backgrounds results in a variety of viewpoints on the market and the path the student fund should take. However, the faculty member must be more vigilant as to student projections to make sure personal opinions don't override sound analysis. This can be addressed by having the class act as a portfolio management team, making all decisions together. The students act as checks on each other's actions instead of each student vying for first place.

In order to begin the class and work on the portfolio immediately, the students should have had a semester of investments as a prerequisite in order to have a working vocabulary for

the course. If this is not possible, the faculty member needs to assign readings for students to provide them the vocabulary to begin analyzing investments.

The following steps outline the basic structure for a student-managed fund class while taking into consideration the limitations at a regional school.

STEP 1: SET ASSET ALLOCATION GUIDELINES

Because the students may not have a strong background in portfolio theory, there is a tendency for the students to follow the latest trend as they view the fund as a semester long competition instead of following a long-run strategy. Following an asset allocation plan gives the students a guide as to how the pieces of the portfolio puzzle fit together. In order to avoid an overweighting in one asset or sector, weights need to be set before each semester. The students then work within the asset allocation framework to reach the goal of long-term growth.

The asset allocation guidelines need to be fairly specific with a tight range. Not only should the guidelines include the percent in stocks, bonds and cash, but also the percent in large, mid and small cap stocks, corporate bonds, government bonds and international stocks. Furthermore, to avoid an overweight in an industry sector, especially the current hot sector, ranges for each sector needs to be explicit. The ranges allow the professor to set the benchmark for the class. By having a tangible comparison, the students have an additional guidepost to use as a reference and for mid-term evaluation of the portfolio.

Many of the students will be reading and watching the financial press for ideas. The guidelines aid in keeping the students focused on the overall strategy of the fund and not what was on the CNBC or in the *Wall Street Journal* the day before.

International holdings must be explicitly addressed in the guidelines. Many students will shy away from examining foreign assets because of the difficulty in gathering information. A study by Jennings and Jennings (2006) examined thirty student-managed investment funds and found that less than half have international holdings and of those that did, the average percent of holdings was less than 5% to total fund value. The faculty advisor needs to convey at the start of the course the role of international assets in the student fund.

STEP 2: SET DECISION-MAKING FRAMEWORK

Designing the decision-making process is the most important step because it determines how the students approach the fund. The students are only with the fund for a semester but their decisions can affect the fund for at least the next year. At the start of each semester, there may be hesitancy in decision-making. Once the students realize that they really will be making the buy and sell decisions, they begin to take their actions seriously.

The students are charged with finding appropriate additions to the fund. However, the students have a tendency to believe that it becomes a sales pitch and try to convince the other

students that the asset is a good addition because they fear a lower grade. It is important to structure the class to encourage students to take the job of finding good additions seriously without turning the search into a competition where students have a fear of losing. In addition, students need to learn that is just as important to identify an asset that initially seemed like a good choice but after a closer examination realize that it does not fit the portfolio. The students need to understand that they are acting as stock analysts and not salespeople.

The frequency of trading has to be determined before the fund begins. If the faculty member has the time, a more hands-on approach can be taken. However, at smaller schools, the class may only meet for a semester and the faculty member has other responsibilities in addition to the fund. During the fifteen weeks of class time, decisions for the upcoming year have to be made. This forces the fund to be more conservative because the stocks have a minimum of a one-year holding period. Thus, students need to understand that their decisions are long-term decisions and that the fund can not try to time the market.

Buy decisions are more easily decided upon than sell decisions. It is hard for many students to admit that an asset choice did not work out or to decide to be satisfied with a given percentage gain. In order to address this tendency, the students are required to decide upon a sell rule for each buying decision. The rule has both an upper and a lower bound. The upper bound provides a basis for the capital gain the students are willing to accept. More importantly, the lower bound states the most the students are willing to lose. If the broker is willing, the orders can be placed and the stocks sold during the off periods for the portfolio. The future classes use the prior classes' bounds as guidelines for setting new upper and lower bounds or deciding when and if to clear the position.

If the decision-making framework is followed, the chance for a poor stock pick is reduced. While it will certainly happen, the ex-post experience is compared with the ex-ante decision to identify any problems in the thought process. The decision-making framework becomes the basis for the teaching points of the fund for future classes.

STEP 3: JUSTIFY THE DECISIONS

Once the asset recommendations are presented, each student votes on the proposals. There is no possibility of a non-vote. Because the students are sometimes reluctant about making a decision, each student is required to write a justification for each stock purchase and sell decision. This forces the students to make a decision and really think about the decision beyond a simple vote. The justification is a useful tool for compelling students to solidify the reasoning behind their vote and not just express an opinion. This is an importance step in developing ethical reasoning. In addition, the writing skill of an opinion is not always easy for students, especially for those that lack confidence. After writing a semester of voting justifications, the students are able to make cogent arguments about each stock.

Because all finance majors are required to take the class, each class has its share of uninterested students. The other students recognize these students and while not criticizing them in class, will critique them in the justifications. The more devoted students will not believe the lackadaisical students and their analysis and opinions. As a negative, because the work is not evenly shared amongst the students, the more industrious students are forced to compensate for the others. However, they are usually satisfied with the punishment of the other students in the form of low grades.

The justifications have a further benefit. While the class discusses the stocks as a whole, the justifications and votes are anonymous to the other students. The students are not intimidated into voting a certain way. This helps the students make ethical decisions and do what is right for the student fund.

STEP 4: PREPARE REPORTS

An annual report is an excellent way to summarize the decisions of the class. As each student researches an asset, the student should prepare an analyst report that is presented to the class. The reports are complied for an overall annual report that recaps the course and decisions. The analyst reports can be used by the students during job interviews as formal documentation of their abilities. The written and oral reports allow the students to demonstrate their critical thinking skills along with communication skills.

A simple format for both the analyst reports and the annual report is to use a Microsoft Publisher newsletter template. The template provides space guidelines for the students for each part of the analysis. Having a common format makes all the reports consistent. This further emphasizes that the students are part of a team.

The thought process for each asset needs to be documented, even for the assets examined but not bought. This plays a vital role in the assessment of the student fund and of the finance program. The finance faculty can examine the thought process for each asset and identify strengths and weaknesses in the program. For example, changes in interest rates have a different effect on stocks than on bonds and on different sectors of the economy. By scrutinizing the analysis and projections by the students on the assets, the faculty can determine of which concepts regarding interest rates the students have a strong understanding and with which concepts the students are struggling. From this analysis, the finance faculty can revise the curriculum and program. Furthermore, the emphasis on writing, presenting and documenting meets finance program learning objectives on critical thinking and oral and written communication skills.

The documentation serves an additional purpose for the professor. The due diligence process is formalized and the faculty member is able to document the analysis and decisions. Because actual money is used, the faculty member must recognize his fiduciary responsibility and be able to demonstrate the portfolio management process that was followed.

STEP 5: TIE THE FUND TO SCHOLARSHIPS

The students as a whole have a risk tolerance higher than that of the average investors. The money is not their own money and they don't get any immediate benefit from a capital gain or penalty from a capital loss. Other then the grade in the class, there is no other explicit incentive for the students. Most student funds do not return the students the gains nor do they explicitly state how the gains are used.

Because there is no negative consequence for their buy and sell decisions, it is difficult to keep the risk-seeking behavior in check. Tying the student-managed fund to scholarships partially counteracts this tendency and cements the students' fiduciary responsibility. As a source of scholarship money for the college, students know who the recipients are. This increases their sense of responsibility and decreases their risk-taking behavior. The students see the tangible results from their decisions not just in the fund's performance but also in the scholarships it produces. An effective tool is to have pictures of the scholarship recipients in the classroom along with pictures of prior classes. The students realize that they are part of something bigger and value the sense of tradition. This is a unique attribute of student funds.

When tying the fund to scholarships, there is an inclination to encourage the students to be overly conservative. Part of the educational experience is making mistakes and learning from those mistakes. While blatantly bad decisions are not tolerated, the students are allotted a small amount of money to try a more risky investment or an investment technique. For example, today's students are very computer-oriented and many of the companies they are interested in are technology companies. During the technology craze the picks worked out well but during the bust the students faced the risk and return relationship daily. The losses were recognized as the cost of choosing riskier stocks. Successive classes learn what worked, why and when as they build their knowledge of past markets.

STEP 6: TIE THE FUND TO ALUMNI AND EMPLOYERS

As a community outreach, the student-managed fund is tied to a luncheon lecture series. The alumni and other community individuals donate an amount to the fund to cover the cost of food and expenses for the portfolio and series. The series brings in speakers to present to the donors. Typical speakers are economists and fund managers from companies with offices in the town along with individuals from the Federal Reserve Bank. Many local banks and brokerage houses bring in investment professionals to speak to clients. The firms recognize the increase in exposure they receive through the lectures and media coverage.

The students are present at each luncheon and interact with the professionals. The alumni have a tie to the college. They are updated to the current performance of the stocks and for those that participated in the fund while students, they are able to see what has happened to their stock picks. The luncheons become a place for networking, between alumni and between the students

and alumni. The first step to successful fundraising is friend-raising. The fund and lecture series provides this necessary first step.

Once a year, the students present their portfolio management decisions to the lecture series. Three to five students are identified as portfolio managers for the presentation. By enrolling in an independent study or internship, the portfolio managers can gain additional academic credit. Their job is to monitor the portfolio and make adjustments as needed. They prepare the annual report and interact with the investment series. Because these students are the leaders, they can be given the power to veto the decisions of the regular classroom.

This linkage with alumni and employers provides a tangible part of the assessment process. The discipline shows the community that its students are learning not just the discipline-specific skills but also the ability to communicate the analysis. A part of most college mission statements is preparing students for the job market. The finance discipline is able to demonstrate and assess its ability with each class.

Table 1: Body of Knowledge

Learning objective: Student will be able to	CFA Level 1	CFP
Explain how the main macroeconomic variables affect the price of the asset	Section VI: C; Session 5-21 to 28; Session 14-60	Topic 35
Describe the role the firm plays in the industry and how industry-specific characteristics affect the price of the asset	Section VI: C; Session 4-18 to 20; Session 14-61, 62	Topic 35
Discuss how the addition of the asset to the portfolio will improve the diversification and the risk-return profile of the fund	Section I: A, B; Section VI: C; Section X: J, K; Session 1; Session 12-52	Topic 41 - A, B, C, and Topic 42 - A
Assess the liquidity, activity and profitability ratios of the firm	Section VI: C,D; Session 7-34, 35	Topic 40 - A
Calculate and interpret the value of the asset using the dividend discount model	Section VI: C,D; Session 12	Topic 38 - C
Calculate and interpret the price multiples of P/E, P/BV, P/S and P/CF	Section VI: C, D; Session 14-64	Topic 38 - D
Assess what the main technical indicators show about the asset along with the limitations of technical analysis	Section X: L; Session 14-63	Topic 40 - B
Assess the role of international markets on the asset price	Section X: K; Session 6-29, 31	
Calculate the required return, expected future price and expected return to the asset	Section VI: C, D; Session 12-53, 54; Session 14-59, 62	Topic 37 - E, F, G and Topic 43 - A
Conduct and interpret a sensitivity analysis on the assumptions of calculating the expected future price	Section VI: C, D; Session 14-59, 62	Topic 40 - E

LEARNING OBJECTIVES

Basic program design is mission-based. AACSB requires schools to explicitly tie discipline-learning objectives and assessment into the college mission. The faculty determines

what the learning objectives are, designs the curriculum to meet the objectives, assesses student performance, and adjusts the curriculum based on the assessment results. Because of the focus on outcomes assessment, the initial objectives must be created to allow for accountability. Student reports on the assets provide a tangible mode for assessment. Furthermore, the body of knowledge covered in a detailed analysis shares some objectives with the Certified Financial Analyst (CFA) and the Certified Financial Planner (CFP) exams. Table 1 presents the basic outline of the body of knowledge in a stock analysis and the corresponding objectives for the CFA Level One exam and the CFP exam. Each objective corresponds to a section of the report.

The completed analysis allows the students to demonstrate their skill level of finance knowledge and techniques with the added skill of communicating the analysis. In terms of assessment, each student analysis can be evaluated based on the sample rubric in table 2. A goal might be for at least 90% of the students to score a level 3 or 4. The rubric can be expanded from this basic framework by individual professors to include specific sections of the analyst report.

Table 2: Critical thinking, analytical and problem-solving skills rubric guideline

LEVEL 1 INSUFFICIENT	LEVEL 2 SUFFICIENT	LEVEL 3 COMPETENT	LEVEL 4 ACCOMPLISHED
Demonstrates severe misconceptions about the important themes or issues.	Displays an incomplete understanding of the important issues in a question or problem.	Displays a rather complete understanding of the important issues or themes in a question or problem.	Displays a thorough and accurate understanding of the important issues or themes in a question or problem.
Excludes data and information.	Overlooks some information.	Incorporates information.	Synthesizes and assimilates data and information.
Omits arguments.	Misconstrues arguments.	Argues clearly.	Argues succinctly.
Fails to present any solution or recommendations.	Acknowledges some aspects of context to the problem and solution.	Considers the influence of context on the choice of solutions.	Demonstrates a clear sense of context in proposed solutions.

SURVEY RESULTS

In order to evaluate issues related to the student-managed investment fund, a survey was administered to 61 students in four portfolio classes. The results derived from a simple t-test are presented in Table 3. The response on each question is rated on a 1 (strongly disagree) to 5 (strongly agree) scale. The central point on the scale is labeled neutral. The empirical results in Table 3 test the hypothesis that respondents are neutral with respect to the survey question $\{T = [(\chi - \mu)\sqrt{\eta}]/\sigma$; where H_o: $\mu = 3\}$ and follow the methodology described by Iman and Conover (1989). Five of the six survey question means are statistically different than three (neutral).

The first two questions address the fiduciary responsibility of the students. The students are familiar with the term principle-agent problem used in the first question. The students agree that tying the portfolio funds to scholarships increases their obligation to make sound decisions. While not statistically significant at the 95% confidence level, a majority of the students consent

that the principle-agent problem is an issue in the decision-making process. The students need to understand that their decisions have actual dollar consequences and thus, they need to take the responsibility seriously. Using the fund for student scholarships provides the link.

Table 3		
Questions	Mean	T-stat
Student recommendations for the fund are riskier because of the principle-agent problem.	3.22	1.86
Student recommendations for the fund are riskier because of the principle-agent problem.	3.42	2.08*
The student-managed investment fund provides marketable experience on portfolio management	4.02	6.68*
The student-managed investment fund improves writing and critical thinking skills.	3.94	5.96*
If possible, I will belong to the lecture series as alumni.	3.8	3.59*
The student-managed investment fund improves the overall quality of the finance program.	4.32	8.28*
*p<0.05		

The students agree that participating in the fund increases their marketability. The students include the experience on their resumes and bring the stock analysis reports and the annual report to job interviews. The students are encouraged to list the companies and assets that they researched on the resume. For many students it is the only practical experience in finance they have before graduating. Former students who are now employers look for the experience on the resumes and use the fund and investment analysis as part of the job interview. The fourth question demonstrates the increase of student confidence in their abilities by acknowledging improved writing and critical thinking skills.

The final two questions address the overall experience of the students with the fund. Being a part of the student-managed investment fund has a positive impact on the students and they want to continue to participate after graduation. Of the current 80 members in the lecture series, eleven are former students with the number increasing each year. Maintaining alumni connections is always challenging at regional schools. The student-managed investment fund and lecture series provide a ready link for networking and fundraising. Having a student-managed investment fund increases the overall quality of the finance program in the eyes of the students. They realize that they are getting to do something that is done at the larger schools. They also realize that they might not be chosen to participate if at a larger school but are taken seriously at a regional school. The experience of managing the fund cements the theories from all the other classes in the program while preparing the students for their careers.

In a roundtable discussion with alumni and local employers, both groups agreed that the student-managed investment fund improved the quality of the finance graduates. The employers indicated that they looked more favorably on students who brought a stock analysis report to the job interview. They indicated that they were more likely to hire students who could demonstrate

the techniques of analysis and the communication of the results. Several employers give preference to those students who participated in the fund.

CONCLUSIONS

Effective education necessitates knowing more than the theories for the exam. It should prepare the students for their professional lives. There are several advantages associated with the student-managed investment fund. The funds provide practical experience to students. The students are able to try the skills and ideas learned in class. By working on a semester-long project, the students are able to see how the ideas and techniques are interrelated. The students learn how to make buy and sell decisions for a fund. The experience increases the students' confidence in their abilities and confidence for when they enter the job market. Participation in the fund has a positive reputation effect and increases the marketability of the finance major and its graduates.

The fund acts like a capstone course, putting all the ideas together. Because most of the finance concepts and techniques are used in the course of managing the student fund, the student fund is a useful assessment measure for a finance program. The finance faculty is able to discern how well the students understand the various concepts and their ability to apply them in a real-world setting. The fund is a vehicle to see how well the program has met its goals and offers an opportunity for applied critical thinking and writing.

The inclusion of all students in the fund puts additional pressure on the faculty advisor to structure the class to accommodate both the struggling student and the detached student. By designing a comprehensive structure at the start of each class, the faculty member is able guide the students through the portfolio management process without being overly intrusive into the students' actions. Setting a strict asset allocation plan allows the students to work within a framework. The students need to follow guidelines on buying and selling. Because buy decisions are easier to make than sell decisions, sell rules need to be set to limit the possibility of the fund from holding a stock too long. The investment analysis reports and voting justifications force students into a defined thought-process, which aids them as they develop critical thinking and writing skills.

The faculty advisor must be aware of the tendency to choose overly risky stocks because the students lack ownership of the funds. The problem of the lack of ownership of funds can be tempered by linking the fund to scholarships. By knowing who the scholarship winners are, the students recognize the importance of their decisions and their fiduciary responsibility. To further solidify the importance of their decisions, the students can write voting justifications. The problem of peer pressure is reduced and the students learn to write objective opinions. When discussing the direction of the portfolio, the students are timid about criticism. Learning to take and give constructive criticism is a by-product of the class.

Finally, the lecture series links the fund to the community and alumni. The community is becomes an active participant in the finance program. Members of the lecture series are able to follow the progress of the student fund along with meeting students. The student fund acts as a foundation for networking and fundraising for the finance program along with providing networking opportunities for members and students.

Survey results support the need for the framework and the role of the student fund within the finance program. Students believe that the use of the fund for scholarships encourages more responsible actions. The students believe that the experience of the fund increase their job marketability and increase the overall quality of the finance program. The students are interested in continuing their interest in the fund as alumni.

While regional schools may not have the resources to have a traditional student-managed investment fund, the positives of the fund make it vital that finance programs consider adding one. By including all students and laying a sound framework, the fund is able to motivate students while compensating for the disinterested student. The student fund serves as a comprehensive assessment tool for the finance program. The overall benefits to the students and program in the form of experience, scholarships and alumni-building offset the risk of a bad stock pick.

Finally, the comprehensiveness inherent in a student-managed investment fund completes the circle of mission, learning objectives, assessment, and community outreach. All of this is accomplished in a framework of fiduciary responsibility, which promotes ethical behavior in the students.

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ENHANCING LEARNING OUTCOMES WITH A STUDY ABROAD EXPERIENCE AT A MEXICAN UNIVERSITY

Peyton Foster Roden, University of North Texas
Filiberto Enrique Valdés Medina, Universidad Autónoma del Estado de México
Cintia Carmona Jiménez, Universitario de Ixtlahuaca

ABSTRACT

This paper examines the implementation of a one-week visit to a Mexican university campus as part of a course offered at a U.S. university. While in México, the U.S. students study finance, Spanish, and Mexican culture. The authors discuss issues surrounding course organization, selection of course content, delivery of the course, logistical issues, and funding. They use Blackboard/WebCT Vista for delivery of course content, but course development is consistent with any delivery method, web-based or otherwise.

INTRODUCTION

Looking at course development and delivery in a university curriculum suggests an opportunity to enhance the competitive position of the university by offering a study- abroad experience. A casual perusal of the table of contents of finance text books shows that internationalization is in the same place that it's been for several decades─ at the end of the book under *Special Topics*, making it easy to throw away and to rely on students getting internationalized in other courses. Text books in other specializations such as marketing and human resource management appear to have the same organization.

Consider, for example, offerings of finance courses in a business curriculum. The typical placement of international material at the end of a text book flies in the face of the academic trend toward integrating international issues throughout the curriculum. Hira (2003) notes the ways education is fast becoming a global business, following the trends of other industries. This expanding global business has engendered several different models for delivering course content internationally. Irrespective of the model, the nature of the new global business and availability of course content on the web make almost any model which includes an international emphasis a competitor to traditional universities (Hanna, 1998).

Although evidence suggests (Wilson, 2001) that cultural discontinuities affect learning effectiveness, this paper takes as its starting point the model that a cross-cultural course in finance is developed and offered successfully within the framework of the traditional university

setting. The authors have learned from experience that the learning and teaching enrichment associated with such a course overwhelms the difficult issues surrounding a study-abroad, web-based course delivery.

Bates and Escamilla de los Santos (1997) note that a schism exits between the potential of web-based learning and practical results. They note that for the reality to meet expectations, the course must have well-developed information technology infrastructures, to develop curricula that transcend local cultural and language barriers, and to provide high quality instructor-learner support services. They lament (1997, p. 1) that ". . .there are few, if any, guidelines or precedents to follow." Judd et. al. (2009) note the usefulness of supplementing web-based teaching with video links to improve student outcomes.

A course taught internationally offers benefits to students and faculty. Feinberg and Vinaja (2002) found that two motivators drive faculty to participate in multicultural international courses: personal and professional satisfaction/enjoyment and a desire to keep up with technology. Anecdotal evidence supports their empirical results. We have noted that faculty participating in such a course learn the policies and procedures associated with foreign programs and thereby enhance their ability to work with foreign professionals and staff. Learning to work with foreign partners is necessary in a world in which political borders have been compressed in both time and distance, challenging the global university. Although often painful, learning to work in different cultures expands the faculty member's personal, social, and professional horizons.

Students in this type of course benefit for many or the same reasons as the instructor does. However, students are receiving the benefits at the start of their careers, and so should be able to take greater advantage over their working lives.

This paper addresses a way to redress the deficiency of internationalization of the curriculum by developing the logistics and delivery of a collaborative finance course jointly offered at U.S. and Mexican campuses. The reader will see that the development requires financial and emotional commitment by several parties and requires about a year from inception to offering the course.

To keep the discussion straight-forward, we assume that the U.S. students (alumnos estadounidenses) and instructor will visit as part of the course the Mexican university campus for a week to enjoy a cultural-professional experience. A project to develop internationally a course between two universities requires facilities, financial support, and faculty, staff, and administrative commitment. Thus, the structure of the course that we outline here involves a course jointly taught by Mexican and U.S. instructors to Mexican and U.S. students, the use of web-based assignments, video-conference delivery of content, mentoring between the two groups of students, and finally an international experience on the Mexican campus.

The paper is organized as follows: Part 1 discusses the planning and budgeting aspects of developing and delivering the course. It presents a preliminary budget of the university and of the students enrolling in such a course. Part 2 presents a proposed organization for such a course,

then discusses course content and delivery via face-to-face classes, teleconferencing, and the web. We also develop ideas for enhancing the cross-cultural content of the course. Part 3 shows a timetable for developing and delivering the course, and Part 4 is a summary and conclusion.

PART 1. COURSE DEVELOPMENT AND BUDGETING

We present this part of the paper from two perspectives. The first is the cost to the University to develop the course and its delivery. The second will be the estimated cost to a student taking the course.

UNIVERSITY PLANNING AND BUDGETING

Some resources to develop and implement a course with a study-abroad component are already available as part of the university commitment to teaching. However, incremental costs will be incurred as follows: The Department may need to hire someone to cover the course usually taught by the instructor who participates in the international course. Although most international communication will be via e-mail, the U.S. and Mexican faculty members jointly offering the course will need to communicate via telephone and teleconference. Physical delivery of items between México and the United States is either expensive or excruciatingly slow. It is excruciatingly slow if the US. Postal Service is used. Allow for a two-week delivery time of a first-class letter. It becomes expensive when items are sent via a contract delivery service such as United Parcel Service, or FedEx, or DHL. Our anecdotal evidence is that FedEx is the service of choice for delivery to México. Instructors should meet face-to-face and discuss logistics of the course. That requires trips by the U.S. instructor to México or by the Mexican instructor to the United States. Each trip will require a stay of at least three days. Note that this is in addition to the travel expense for the U.S. instructor when the class travels to México a part of the course.

Departments and universities cut costs by having fewer preliminary trips and by negotiating with the Mexican university for it to pay some travel and lodging expenses. We have found that flying into Benito Juárez airport in Mexico City is typically cheaper than flying into most other Mexican cities, perhaps because the Mexico City route has more traffic and more competition.

Table 1 includes an estimate for faculty member pay because we consider the study-abroad course an additional course taught by the faculty member. You can also consider pay for a faculty member non-incremental if the course will be within the normal load and the Department will not provide a course to replace the alternative typically taught by the instructor.

The budget includes four trips by the instructor (at $1,000 each trip) for the instructor to develop course content and organize the logistics of the course. Notice that we do not include a cost for the study-abroad week in México because that cost is included in the student budget below.

Table 1 Departmental Budget One-Semester Course with One Week in México	
Faculty member pay	$12,800
Telephone	300
Mail	150
Travel and lodging	4,000
Total	$17,250

We recommend that the instructional Department provide a back-up course for the collaborative-course instructor to teach in the event the course is cancelled. For example, the Department should schedule a regular course taught by an adjunct, then replace the adjunct with the collaborative-course instructor if the study abroad course is cancelled. We've learned that when the Department fails to provide for a backup course, that sends a negative signal about developing a study-abroad course. Our advise is for an instructor to avoid committing to such a course until administrators are on board with a scheduled back-up course.

STUDENT BUDGET

Students and parents want to know the student cost of the program. Variables such as location of the Mexican university, number of students, extent of the field trips, and airfares enter into the calculation. We've had costs range for three-week programs in México with host families (excluding airfare) from $588 to $1,116.

The student budget below is for a recent one-week maymester program in which U.S. students stayed in dormitories on the host-university campus. The cost included all meals, Spanish study, and field trips. The budget does not include tuition and fees to enroll in the course. Those are sunk costs because the student will take the course whether or not it is part of a study-abroad program.

The University of North Texas offers each student enrolling in a study abroad program in México a $500 scholarship, included in the calculations. The budget in Table 2 includes all incremental costs, including Spanish study, excursions, transportation while in México (including to and from the airport), and housing, meals, and airfare. We include airfare and spending money even though they are not part of the program *per se*.

When negotiating with the Mexican university, ask for a peso-denominated per-student cost that covers the instructor's expenses. Having the contract in pesos will reduce the dollar cost of the program if the peso depreciates between the time of the agreement and payment. Mexican universities prefer a contract written in U.S. dollars because they see the dollar receivable as an appreciating asset. Contracts we have had with Mexican universities have been written in U.S.

dollars, in part because our Study Abroad Center wants the dollar cost known in advance. Students like that, too.

Table 2
Student Budget
One-Week Finance in México

Costs Student Pays to Study Abroad Center (SAC)		
SAC administrative fee	$150	
Insurance card	12	
Mexican university program costs (one week)	760	
		$922
Additional Program Costs		
Airfare*	400	
Personal spending money (estimated)	50	
		450
Gross Program Costs		$1,372
Less SAC Scholarship**		-500
Net Program Costs to Student		$872

* In July, 2009, round trip airfare from DFW to Mexico City was around $350. Deals as low as $250 were available. See http://www.continental.com/web/en-US/default.aspx http://www.aa.com/aa/homePage.do

** The Study Abroad Center at UNT awards each student a $500 scholarship for a México program.

Notice in the budget that net program costs ignoring airfare and spending money are $422 ($922−$500). The student cost may be even less. When one of the authors accompanied a UNT finance class of 17 students to Tec de Monterrey campus Monterrey, several students rode the bus from Dallas to Monterrey. Round-trip bus fare was about $100, but the trip was 10 hours one way and a hassle at the border. We tell students to think of the scholarship as reimbursement for airfare.

PART 2. IMPLEMENTING AND DESIGNING THE COURSE

To implement the course we describe here, U.S. and foreign university need an infrastructure in web-based teaching, teleconferencing, and international education. It may well be that overcoming problems with the IT architecture may be more difficult than overcoming language problems. That is because the language issue will be unique to each group of students and so can be solved by each instructor dealing with her target students because in our model each instructor will prepare material for her own students.

Mathur and Oliver (2007) suggest that in developing a course you should spend a substantial portion of time in the analysis phase learning about potential student needs and special challenges that students may face in an international blended context. They comment that a focus on developing a cohesive and comprehensive plan of instructional strategy to meet the needs of learners can be a strong determinant of the success of online programs in a global context. Analyzing particular problems that learners face in accessing technology is an essential piece to developing a study-abroad, web-based finance course. Thus, the instructor must be aware of technological resources such as online course accessibility (especially in countries with poor bandwidth).

Course delivery models differ by institutions and disciplines, and we don't intend to survey the several methods. We direct the reader to the study by Lorenzo (2006), which presents business models of nine institutions. The course we describe is an extension of courses that one of the authors has taught for several years— a three-week, blended, maymester course. In the model we describe, students and instructor do the heavy lifting during the first two weeks of class via video conferencing, class meetings, and the web. By that, we mean most assessments will be completed during the period preceding departure for México. That leaves the week in México relatively free for cultural immersion, as described below.

There is a learning curve at work in developing and implementing a course with a study-abroad component. Our learning process has been often painful and expensive. Although learning by doing is an effective way to learn, the following discussion is designed to help the reader overcome pitfalls and problems we encountered.

TEXTBOOKS

One author of this paper has taught several courses on Mexican campuses to U.S. students. These courses were not collaborative, but consisted of teaching introductory finance, working-capital management, international finance, and Mexican business practice and policy to students enrolled on the UNT campus. The courses used a standard textbook keyed to Blackboard/WebCT Vista.

If the study-abroad course is a collaborative course developed with a Mexican faculty member, then textbook and materials should be developed jointly by both of the instructors. The instructors should find a textbook available in each language and supplement it with a Spanish-English dictionary. We've tried several dictionaries, and finally found two that satisfy us, *Langenscheidt Spanish–English Pocket Dictionary* and *Langenscheidt Spanish–English Universal Dictionary*. Spanish translations of many U.S. textbooks are available. For example, two finance books available in the United States (English) and in México (Spanish) are Eiteman, Stonehill, y Moffett (2001) and Gitman (2003).

COURSE DELIVERY

Instructors can offer a course over whatever period is acceptable to instructor and Department. Initially (about 12 years ago), we offered a three-week course with all three weeks on a Mexican campus. We now offer the abroad part of the course for only one week for several reasons. First, the host university can more easily find classrooms and housing for a one-week period than for a three-week period. Second, the cost of a one-week stay is substantially less than for three weeks. Finally, students can fit more easily into their schedules a one-week stay abroad.

This last point is particularly important if your university has a large working-student population so that many potential students will take the course while working. We learned early on that working students cannot take three weeks from work, so the one-week experience fits comfortably in their schedules.

We typically meet class for two weeks on the U.S. campus, then fly to México on the Friday of the second week. After a one-week stay, the group returns on a Saturday, in time for a one-day recovery before the start of summer school on Monday. In the past, the one-week abroad part was at the end of the three-week period. We now believe that it should be in the middle of the period by leaving on the Friday at the end of the first week and returning on the Monday at the beginning of the last week. We have arrived at this conclusion because we think it will increase quality control of the México part of the class. When the México part is at the end of the period, students think that the course is finished when they depart for México. They miss field trips, Spanish class, and finance lectures. With the study-abroad component sandwiched between weeks at the U.S. campus, the instructor has the power of the grade book on his side, so students are more likely to behave professionally.

For a collaborative course, video conferencing helps coordinate scheduled class time between the two campuses because simultaneous classes periods will be taught jointly. Each instructor will be responsible for a part of each class. Sessions require preparation and distribution of the lecture material in advance in a format such as MicroSoft Power Point or Corel Presentations. The material should be in both Spanish and English with a vocabulary list at the end of each handout. Each instructor will be responsible for translating the material into the language of her students.

We like to use groups in our study-abroad courses. Lind (1996) examined the use of groups and found that there were few significant differences across electronically assigned groups communicating via the web and face-to-face groups. Gunawardena *et. al.* (2001) found statistically significant differences in the perception of groups by Mexican and U.S. students. Our anecdotal experience is consistent with these empirical studies: We have found that group development and work require effort to establish legitimacy in a cross-cultural environment and, once successfully established, groups yield a feeling of place and encourage students to learn from their cross-cultural classmates.

The group feature in Blackboard/WebCT Vista permits instructors to place students into small groups. That permits each student to have an assigned mentor from the host university and a peer group not only for discussing issues about the class, but also for addressing cultural and business issues. Each group should have its own chat room so that members can leave messages in the log and refer back later to read responses from group members. The log will be maintained throughout the semester so that the instructor can monitor the contribution of each member to group activities. The instructor should require assignments from each group submitted as attachments via the Assignment tool.

We think grouping may be the most exciting features of a study-abroad experience. Each student will be paired with a foreign counterpart. Then, when the U.S. group arrives on the Mexican campus, the students will be able to greet each other and to establish quickly a trusting, professional friendship.

CULTURAL CONTENT

Students in advanced economies should learn to challenge assumptions continuously promoted by domestic marketing media telling students that the just society is found only in their culture. By developing an understanding of other cultures and other societies, U.S. students may arrive at a better understanding and appreciation of their own culture. We agree with Moore's comment (Moore, 2005), "Distance education is equipped to facilitate this exchange of knowledge on a scale that no previous forms of education could equal."

Mathur and Oliver (2007) note that developing an awareness and sensitivity to cultural and political differences is helpful in the planning process and in ensuring appropriate learning outcomes for the diverse students who make up these programs. It is vital for stakeholders of international programs to be sensitive to cultural and political diversity of students across institutions. This sensitivity and understanding of cultural and political issues is essential where learning is being transferred from one cultural context to another.

To nurture and enhance the exchange of knowledge between cultures, the cross-cultural content of the course consists of establishing mentors, language study, company visits, and residency.

Start the course by assigning each U.S. student to a counterpart in México based on age and gender. The Mexican mentor will become the U.S. student's cultural guide throughout the stay. The two students will be in the same groups for completing assignments. They become acquainted via the video conferences and class sessions, then meet when the U.S. class travels to México.

Your students can accomplish the stay in the foreign country by using a host-family arrangement or dormitories on the host-university campus. Some students like staying with a family while in México. Mexican universities usually have a strong network of families with which they can place students. Three suggestions are appropriate here: First, the natural choice

for the host family is that of the mentor's family. The U.S. student should already have a bond with his Mexican counterpart, and the Mexican student will have a general idea of the likes and dislikes of his amigo estadounidense. Second, the U.S. instructor should visit each student and his host family while there. It's usually easy to wrangle an invitation for dinner, so go that route if you can. Third, make sure that the international office of the Mexican university realizes that a U.S. student must be moved immediately to another family if you request it, no questions asked. We've had students moved to a different host family for reasons ranging from bad food to lack of privacy.

Staying in a residential dormitory on the host-university campus offers a U.S. student the opportunity to be in the middle of campus action. It also provides more peaceful nights for the U.S. instructor because she will know where students are. Two problems unfold with this choice. First, students lose out on the cultural enrichment that staying with a host family provides. Second, many foreign universities do not have residential dormitories. For example, Instituto Tecnológico y de Estudios Superiores de Monterrey (Monterrey Tec) has 36 campuses throughout Latin America, but few have residence halls on campus. No state universities (univesidades autónomas) have residencias.

Experience has taught us to use residence halls because of their evident benefits and in spite of a negative─ lack of mixing and mingling with a family. We have had unpleasant experiences with the host-family arrangement. For example, on one trip a student didn't arrive home and was missing overnight. Visions of her stuffed in the trunk of a car headed for Ciudad Juarez danced in our heads. She showed up the next morning for Spanish class after a panic-stricken alarm was issued. On another trip, the host family continued to serve the same meal (consisting of bologna) each time and failed to deliver students to and pick them up from the campus, as required. The thought of students unable to speak Spanish having to hail a Mexican cab is disturbing. On yet another trip, students in a household were for a week without hot water.

Students are reluctant to tell the host university or the instructor about such problems until after returning to the United States. The reason: They are coopted into thinking the host family is part of their own family, and so will not "rat" on family members. As a general rule, use the residence hall when offering the course at the undergraduate level to help you sleep well at night. Reserve the family stay for graduate students, and then only when the *residencia* option is not available.

Understanding culture requires understanding the language, so require U.S. students to study Spanish during their stay in México. Spanish is becoming the national language of much of the southern part of the United States, so this is an opportunity to encourage students to start or restart their study. Not-for-credit Spanish can be taught by the Mexican university's language faculty at any level a U.S. student needs─ basic, intermediate, advanced. We've had students placed into two groups rather than three when enrollment or the host university dictates it.

Here is a useful hint to help with attendance at the language course: Tell students that 5% of their course grade (or some percentage) will depend upon a report from the Spanish instructor

of acceptable progress. Make it clear that you know the Spanish component is ungraded, but that you expect an evaluation from the Spanish instructor.

The professional part of the course involves field trips (*excursiones*) to Mexican companies. The burden here is on the Mexican host university, but monitor choices closely to make sure they involve appropriate aspects of the company. A host university may follow the path of least resistance by arranging field trips to tour the production facilities of a company rather than other aspects. Students often enjoy that, especially when the class visits a cervecería, but the U.S. instructor needs to approve each trip before departing for México to assure its relevance to the course. By the way, time spent on field trips counts for class contact hours in AACSB-accredited programs.

To provide attendance at and professional behavior on field trips, require students to turn-in a brief report of each, or, alternatively, provide a discussion question as part of the final exam.

PART 3. TIMETABLE FOR COURSE DEVELOPMENT

How long will it take to develop and offer a collaborative international course such as the one we describe? ¿Quién sabe? We can offer only a general guide because of the uncertainty surrounding each issue above. The Table 3 offers a 13-month time line for completing the process.

Table 3
Sequence and Time Required to Implement a Study-Abroad Course

Activity or Accomplishment	Beginning of Month
Activity 1. Process begins	01. Verify presence of IT architecture and commitment from each university; prepare budget
Activity 2. Visit to México to meet colleagues there	03. Select text material and discuss allocation of work load between instructors
Activity 3. Visit to México to develop examples and problems for the text and course	05. International Studies arranges for week-long visit of students to México– families, classrooms, field trips; development of web-based assessments and assignments
Activity 4. Visit México to develop more models and examples for textbook	07. Development of group activities; development of in-class materials (Spanish and English); meet International Studies staff at Mexican university
Activity 5. Logistics	09. Registration for course; distribute handout to students about coping in México and encourage them to select a Mexican name to use while there
Activity 6. Visit México to discuss opportunities to market the course to Mexican students	11. Assign students to groups; assign students to host families or dormitory; distribute course material to students; audit field trips
Activity 7. Course offered.	13.

You may be struck by the number of visits to México (four). There are two reasons for this: First, it's México. Excuses to visit are always welcome. Second, a serious reason for multiple visits is to permit the instructors and support staff better to know each. Familiarity breeds a more successful study-abroad program. We've learned from experience that relying on the International Studies staff or on a third party to arrange the program may be an invitation to problems and more expense– a third party must build in a profit margin. They will not have the interest in your program that you have. The instructor must take a leadership role in each activity from verifying housing and travel arrangements to determining cultural and professional activities while at the host university.

PART 4. SUMMARY AND CONCLUSION

Web-based courses have made it possible to enhance student outcomes by offering collaborative courses internationally. Moreover, in a world in which education is morphing into a private good, the need for universities to differentiate their education products from the competition increases the benefits of collaborative international courses like the course developed in this paper.

We developed in this paper two representative budgets. The first was from the perspective of the U.S. university and showed the incremental amounts necessary to offer a collaborative study-abroad course. Assuming that an instructor must be hired (or must be replaced by another instructor teaching the usual offering), a reasonable estimate of the cost was $17,250. An overriding influence that determined the success of the course was the cost to the student. We presented a budget of $872 including estimated airfare, spending money, cost on the Mexican campus, and incidental expenses. Your university may provide a scholarship for study in México, bringing down the budgeted net cost per student. The budget ignored tuition for the course because tuition was not incremental– students must pay it wherever they take the underlying course. We suggest that faculty and administrators allow 13 months to develop and begin offering the course.

We noted that the study-abroad experience is enhanced by having an instructor at each campus who develops material for her own students using the same text book, one Spanish and the other its English counterpart. Delivery of the course should be in three ways: (1) Video conferencing to permit students to see the differing emphasis placed on course content by each instructor. It will also serve as a way for students to link to a mentor in the other class and to begin developing a social and intellectual bond. (2) Web-based delivery of typical activities (assessments, chats, and so on) will be enhanced with group work between U.S. and Mexican students. (3) Cultural content consisted of a mentor system in which each student is linked to a foreign-student counterpart and the U.S. students visit the Mexican campus for a week. There, they meet their Mexican counterparts, visit companies to see first-hand the application of

business decisions in a Mexican setting, and study Spanish taught by the faculty at the host university.

Presenting an international course that uses the campus of a foreign university is challenging and rewarding. We have found from an instructor's perspective the most important issue is to have the unqualified support of administrators. Without that, we recommend that a collaborative international course such as the course we develop here be moved to the scrap heap.

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DEALING WITH AMBIGUITY: ASSESSMENT OF TOLERANCE FOR AMBIGUITY IN THE CONTEXT OF SCHOOL LEADERSHIP

Lawrence T. Kajs, University of Houston-Clear Lake
Daniel L. McCollum, University of Maryland University College

ABSTRACT

While the fields of business and medicine have advanced the study of tolerance for ambiguity (TFA), little research has addressed the TFA construct in the field of educational administration, e.g., principals. Research has found that one's tolerance for ambiguity (i.e., how a person tends to respond to uncertain circumstances) can affect one's behavior and in turn influence style of leadership and decision-making. The current research examines the TFA construct in the field of educational administration through the study of a large number of current and prospective principals surveyed with the Norton (1975) MAT-50 instrument, considered a valid and reliable scale for measuring TFA. In the present article, this instrument provides findings that address characteristics of individuals with high and low TFA levels.

OVERVIEW

The school administrator is expected to have the ability to multitask; that is, being able to respond to unexpected situations with timely decision making that addresses campus and community safety, school district policies and practices, as well as professional etiquette. Since the appropriateness of decisions can have a major impact on campus and community members alike, the disposition and preparedness of school leadership is critical. With the increased occurrences of ambiguity within society (Visser, 2003), educators need to better understand the tolerance for ambiguity (TFA) construct in the domain of educational administration. This is especially relevant for higher education professors and top school district administrators, who prepare and develop future and practicing school leaders.

While the literature speaks to the value of understanding how TFA affects school leaders' performances (e.g., Patterson, 2001; Williams, 2006), limited empirical research exists on TFA influence on school administrators' dispositions and their consequential behaviors and decision-making (Kajs & McCollum, 2009). The purpose of this paper is to advance the research of the TFA construct as it applies to current and future school leaders, e.g., campus principals. The present study will analyze and examine survey results of Norton's (1975) MAT-50 instrument used with 333 prospective and practicing principals.

TOLERANCE FOR AMBIGUITY: DEFINED AND DESCRIBED

Ambiguity can occur when there exists vagueness of words, as well as uncertainty and incompleteness of information and structure, where circumstances can have multiple interpretations, sometimes contradictory (Norton, 1975; Visser, 2003). Budner (1962) points out that three major reasons result in situational ambiguity: the newness of circumstances (the lack of familiar signals); the complexity of conditions requiring multiple prompts for deliberation; and the insolvability of the situation due to varying, sometimes contradictory, cues in finding a solution.

The way a person interacts (i.e., the process of perceiving, interpreting, and reacting) with ambiguous situations works to determine one's tolerance for ambiguity (TFA) level (Stoycheva, 2002; 2003). Because of these variables (e.g., perceptions) and other factors (e.g., predictability and variability of situations), the TFA construct is intricate and complex (Benjamin et al., 1996). For instance, a person with a high TFA will tend to view an ambiguous situation as desirable (Budner, 1962); and approach it in a practical, adaptive manner, displaying risk taking and resiliency in the development of alternative responses and solutions to the circumstances (DeRoma et al., 2003; Patterson, 2001; Stoyvecha, 2003; Visser, 2003).

On the other hand, a person with high intolerance for ambiguity (INTFA) will tend to see and construe an ambiguous situation as threatening (Budner, 1962); and approach it in a concrete, stereotype manner, displaying anxiousness and discomfort, and possibly try to avoid the incident (Geller et al., 1993; Stoycheva, 2003).

Grenier et al. (2005) indicate that while the literature tends to equate intolerance for *ambiguity* with intolerance for *uncertainty*, distinction can be made between the two notions; specifically, intolerance for *ambiguity* relates to current circumstances or conditions as a cause of threat, while intolerance for *uncertainty* refers to the prospect of having a negative outcome.

TOLERANCE FOR AMBIGUITY SCALES

The topics of TFA and INTFA can be found in organizational and social behavioral studies (e.g., Bennett et al., 1990; Budner, 1962; Clampitt & Williams, 2000), business literature (e.g., Bakalis & Joiner, 2004; Lamberton et al., 2005; Lane & Klenke, 2004), and medical research (e.g., Geller et al., 1993; Schor et al., 2000; Sherrill, 2005). This literature describes multiple instruments, based on cognitive constructs, which can quantify an individual's TFA and INTFA. A few of these scales include the Scale of Tolerance-Intolerance of Ambiguity by Budner (1962); the AT-20 scale by MacDonald (1970); and the Multiple Stimulus Type Tolerance for Ambiguity Test (MSTAT-I) by McLain (1993).

MEASURE OF AMBIGUITY TOLERANCE (MAT-50)

One scale in particular was found to provide a strong measure in quantifying TFA. This instrument, the *Measure of Ambiguity Tolerance* (MAT-50) developed by Norton (1975), underwent a series of reliability studies with the most recent full version having an internal consistency estimate of .88 and a test-retest reliability estimate of .86. Moreover, Benjamin et al. (1996) have listed an alpha of .89 for the MAT-50. Validity evidence for the MAT-50 has also been established. Norton (1975) presents theoretical arguments and empirical evidence to support content and criterion-related validity evidence. Hypothesized correlations with such variables as attitudinal rigidity, dogmatism, and intolerance for ambiguity were supported in Norton's work. Hence, the MAT-50 scores correlating with the scores from the other measures also establish a nomological network (Cronbach & Meehl, 1955) in support of the measure's construct validity.

Norton's (1975) latest version of the MAT-50 included 61 statements in eight (8) subscales (i.e., philosophy, interpersonal communication, public image, job-related, problem-solving, social, habit, and art forms). The final scale from Norton (1975) used a set of self-response options for each item as follows: "YES! YES *yes* ? no NO NO!" (p. 618). Each option was the respondent's indication of how descriptive the particular item was of them. Due to Norton's very unconventional and otherwise unused scaling method, a more recent and widely used scale was presented with the items in the present study. The summated rating scale in this study uses response options from 1 to 7, where 1 indicates "not at all true of me" and 7 indicates "completely true of me." Consequently, each participant designates how true each statement is about them. With the new scale for Norton's TFA instrument, the results herein indicate performance of the measure with the new scale in a previously unstudied group of people, namely, prospective and current school leaders.

PURPOSE

Using Norton's *Measure of Ambiguity Tolerance* (MAT-50) instrument, this study examines the TFA construct in the context of school leadership by sampling a large group of aspiring and practicing school leaders. Using descriptive statistics the results will describe the subscales and the overall instrument, including calculated reliability coefficients for each subscale. Correlations will be provided among multiple participant variables including TFA, Grade Point Average (GPA), school administrator experience, and teaching experience. The application of the independent t-test will contrast highest and lowest TFA scorer outcomes so to compare GPA, school administrator experience, and teaching experience of participants.

METHOD

PARTICIPANTS

There were a total of 333 people sampled for this study. All 333 participants reported their gender. There were 256 females and 77 males in the sample. Of the 328 participants who reported ethnicity, 157 were White, 89 were African-American or Black, 68 were Hispanic, Latino, or of Spanish origin, four (4) were Asian, and one (1) was Native Hawaiian or Other Pacific Islander. The mean age of the 326 participants who reported it was 33.5 years (SD = 7.5). The mean graduate GPA of the sample was 3.59 (SD = .79) on a 4-point scale; 48 participants did not report their GPA. Three hundred thirty-two participants' reported teaching experience with a mean of 88.1 months (SD = 61.1). Of the 28 participants with administrative experience, the mean was 3.6 months (SD = 19.5).

MEASURE

As indicated earlier, the Measure of Ambiguity Tolerance (MAT-50) has an adequate level of content validity, good construct validity, and strong criteria-related validity, and high internal reliability (r = .88) as well as test-retest reliability (r = 86) (Norton, 1975). Studies of the instrument have consistently shown evidence of good reliability (e.g., Benjamin et al., 1996).

PROCEDURES FOR ANALYSIS

The analysis of the data includes descriptive statistics of each item, each subscale, and the overall scale. Reliability coefficients (Cronbach's Alpha) are provided, as well. Additionally, correlations among TFA, GPA, school administrator experience, and teaching experience are presented. Lastly, t-tests comparing the highest and lowest TFA scorers are used to compare GPA, school administrator experience, and teaching experience.

RESULTS

The item-level descriptive statistics in Table 1 suggest the scale is good. All of the items use the full scale range indicating minimums of 1 and maximums of 7. Therefore, no floor or ceiling effects are occurring with the use of the scale. Also, most of the item means fall toward the center of the scale with item 60 having the lowest mean, 2.70 (*SD* = 1.50) and item 39 having the highest mean, 6.10 (*SD* = 1.18). There were three highly kurtoic items (i.e., above 2.0). Those were items 1, 30, and 39. However, none of the items were heavily skewed (i.e., above 2.0). Overall, the items performed well in the sample, with the only considerations for revision at the item level being for items 1, 30, and 39 based on elevated kurtosis.

Table 1: Item Descriptive Statistics							
Item	**N**	**Mean**	**SD**	**Min**	**Max**	**Skew**	**Kurt**
1	331	5.95	1.08	1	7	-1.29	2.42
2	332	4.04	1.67	1	7	0.12	-0.89
3	330	5.09	1.41	1	7	0.69	0.05
4	327	5.20	1.66	1	7	-0.70	-0.40
5	330	5.27	1.32	1	7	-0.71	0.25
6	332	4.59	1.57	1	7	-0.37	-0.51
7	331	5.60	1.27	1	7	-0.95	0.75
8	332	4.87	1.41	1	7	-0.36	-0.44
9	332	5.20	1.58	1	7	-0.78	-0.04
10	332	5.32	1.46	1	7	-0.93	0.49
11	331	4.36	1.68	1	7	-0.37	-0.61
12	332	2.87	1.52	1	7	0.71	-0.09
13	332	3.61	1.88	1	7	0.18	-1.13
14	332	3.71	1.80	1	7	0.12	-0.91
15	332	4.39	1.55	1	7	-0.28	-0.60
16	332	3.21	1.57	1	7	0.32	-0.68
17	331	4.18	1.70	1	7	-0.12	-0.90
18	327	5.39	1.38	1	7	-0.90	0.57
19	332	4.77	1.67	1	7	-0.55	-0.52
20	331	3.41	1.88	1	7	0.31	-1.11
21	328	4.57	1.76	1	7	-0.40	-0.74
22	331	3.44	1.78	1	7	0.35	-0.82
23	332	3.54	1.64	1	7	0.24	-0.74
24	329	4.88	1.45	1	7	-0.43	-0.44
25	330	3.50	1.59	1	7	0.17	-0.79
26	332	3.65	1.74	1	7	0.14	-0.98
27	332	4.27	1.56	1	7	-0.22	-0.62
28	332	3.62	1.52	1	7	0.06	-0.70
29	329	4.29	1.56	1	7	-0.05	-0.63
30	331	5.87	1.26	1	7	-1.40	2.13
31	331	5.11	1.73	1	7	-0.85	-0.09
32	332	5.49	1.48	1	7	-1.08	0.77
33	332	4.12	1.77	1	7	-0.14	-0.97
34	332	5.11	1.65	1	7	-0.71	-0.26
35	332	5.58	1.39	1	7	-0.96	0.40
36	332	4.51	1.63	1	7	-0.35	-0.65
37	332	3.87	1.54	1	7	-0.14	-0.81
38	332	3.48	1.67	1	7	0.11	-1.04
39	332	6.10	1.18	1	7	-1.79	3.78
40	332	3.45	2.06	1	7	0.32	-1.25
41	332	3.78	2.37	1	7	0.09	-1.65
42	332	4.03	2.21	1	7	-0.04	-1.48
43	331	5.32	1.91	1	7	-1.02	-0.09
44	332	3.65	2.04	1	7	0.11	-1.30
45	332	5.34	1.66	1	7	-0.98	0.18
46	332	5.55	1.80	1	7	-1.19	0.29
47	331	5.35	1.64	1	7	-0.84	-0.22
48	330	3.93	1.88	1	7	0.03	-1.11
49	331	4.62	1.72	1	7	-0.38	-0.73
50	332	5.76	1.47	1	7	-1.25	0.99
51	329	3.39	1.33	1	7	0.03	-0.15
52	332	4.44	1.99	1	7	-0.24	-1.18
53	331	4.15	1.77	1	7	-0.12	-0.89
54	329	3.70	1.61	1	7	0.19	-0.49
55	329	4.25	2.04	1	7	-0.24	-1.30
56	331	4.63	1.69	1	7	-0.35	-0.58
57	332	4.33	1.72	1	7	-0.19	-0.75
58	332	5.14	1.63	1	7	-0.80	-0.11
59	332	3.10	1.71	1	7	0.50	-0.60
60	332	2.70	1.50	1	7	0.67	-0.08
61	332	3.45	1.97	1	7	0.31	-1.06

In investigating the subscale and overall TFA scores (see Table 2), the highest mean comes from the Philosophy subscale, whereas the lowest mean comes from the Public Image subscale. That is, the sample tolerates ambiguity best with regard to philosophy and least with regard to public image. All of the subscale scores and the overall mean score fall above the expected scale mean of 3.5. This indicates one of two things. Either the scale is producing scores at the high end and needs to be adjusted, or the sample generally has higher than expected TFA.

It is apparent from the reliability estimates (Cronbach's Alpha), given in Table 2, that the subscales lack reliability when they stand alone. However, cumulatively, the overall scale scores have a good level of reliability at .88. This reliability estimate for the overall scale scores matches that given by Norton (1975). Clearly, the subscales should not be used independently when measuring TFA. Rather, the overall scale scores should be used, as they are a highly reliable overall indicator of TFA.

Table 2.
Overall Scale and Subscale Descriptive Statistics

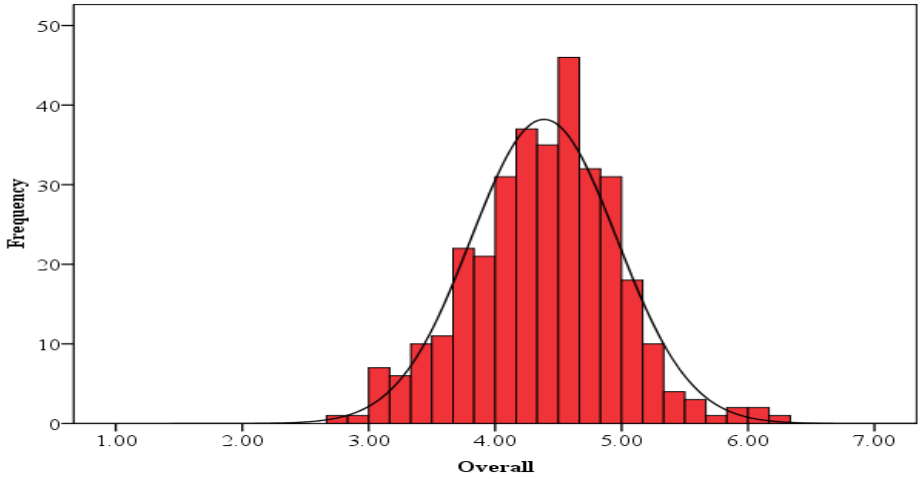
Scale	N	Alpha	Mean	SD	Min	Max	Skew	Kurt
Overall Scale	332	.88	4.39	.58	2.80	6.21	-0.01	0.23
Philosophy	321	.47	5.10	.70	3.00	7.00	-0.15	0.01
Interpersonal Comm.	331	.65	4.53	.99	1.80	7.00	-0.29	-0.08
Public Image	332	.67	3.73	1.21	1.00	6.75	0.00	-0.51
Job Related	321	.57	4.47	1.01	1.60	7.00	-0.23	-0.25
Problem Solving	324	.78	4.19	.95	1.22	6.33	-0.06	-0.09
Social	331	.65	4.82	.80	2.56	7.00	-0.24	0.00
Habit	326	.71	4.52	.90	1.69	6.54	-0.33	-0.07
Art Forms	325	.35	3.93	.70	1.33	5.78	-0.33	0.81

The overall scale scores are approximately symmetrical and very slightly kurtoic. The histogram in Figure 1 reveals that the very low and high ends of the scale are not overly used – so much so that when items are summed and averaged, no overall scale scores fall at the extreme ends of 1 and 7. However, the lower end of the scale is less often used than the higher end. This may be indicative of a group that has high TFA, or items may need to be adjusted to produce a fuller use of the entire scale, which incorporates more scorers at the lower end.

Table 3 shows correlations among the TFA subscales, overall TFA scores, GPA, time as a school administrator, time as a teacher, and age. The statistically significant correlations among all of the subscales are expected, given that the scores from the overall scale should be used, rather than individual subscale scores. The most noteworthy correlations in the scale are between age, overall TFA, and three of the TFA subscales. In particular, there is a small, though statistically significant negative correlation between age and overall TFA. In other words, in

general, the younger the participants the more tolerant of ambiguity they were. This can be stated inversely, such that the older the participants, the less tolerant they were of ambiguity. When examining the subscale correlations this inverse relationship between TFA and age is most notable for Interpersonal Communication, Public Image, and Social TFA. Seemingly, in regards to social attributes such as communication and image, TFA was lower for the older participants.

Figure 1.
Histogram of Overall Scale Scores



Carrying a step further the analysis of the relationship between age, time teaching, time as an administrator, GPA, and overall TFA independent t-tests were used to analyze two groups of participants. Those two groups were established using a method for identifying high and low TFA created by Norton (1975). By Norton's criteria, those individuals scoring over one-half of a standard deviation above the mean have high tolerance (in this sample a score of 4.97, equivalent to 16.87% of participants) and those individuals scoring under one half of a standard deviation below the mean have low tolerance (in this sample a score of 3.81, equivalent to 16.57% of participants). The remaining 66.56% of participants would be describe as middle tolerance, but are not included in the high versus low analysis. The independent t-test analysis is presented in Table 4.

Using Norton's (1975) criteria for defining the high and low TFA groups, participants with low TFA were statistically significantly older (M = 36.8, SD = 7.5) than participants with high TFA (M = 32.3, SD = 6.6, t = 3.0, p = .00). Also, participants with low TFA were marginally statistically significantly more experienced as teachers (M = 109.9, SD = 65.8) than participants with high TFA (M = 85.2, SD = 60.1, t = 1.9, p = .06). Additionally, participants with low TFA were marginally statistically significantly more experienced as school administrators (M = 3.3, SD = 11.2) than were participants with high TFA (M = .03, SD = 2.0, t =

1.8, $p = .07$). Lastly, there was no statistically significant difference between the TFA groups on the GPA measure. Overall, a higher TFA level occurs with younger and less professionally experienced participants.

Table 3.
Correlations between TFA Scales, Age, Time Teaching, Administration Time, and GPA

Measure	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	.67**	.27**	.08	**-.14****	.01	**-.15****	**-.16****	-.09	-.06	**-.12***	-.07	-.09
2. Time Teaching		.12*	.12*	-.07	-.03	-.07	-.03	-.06	-.05	-.01	-.04	-.01
3. Administration Time			.00	-.02	-.02	-.02	.00	-.04	.00	-.01	-.03	.02
4. GPA				-.02	-.02	-.11	.12*	.01	-.03	-.00	.05	.02
5. Overall TFA					.37**	.54**	.57**	.61**	.73**	.70**	.78**	.45**
6. Philosophy						.22**	08	.14*	.22**	.27**	.34**	.24**
7. Interpersonal Comm.							.27**	.28**	.33**	.27**	.29**	.13*
8. Public Image								.48**	.43**	.43**	.24**	.18**
9. Job-Related									.53**	.46**	.35**	.25**
10. Problem Solving										.43**	.49**	.28**
11. Social											.45**	.25**
12. Habit												.39**
13. Art Forms												-

* Significant at .10
** Significant at .05

Table 4.
T-tests of Low versus High TFA Groups

Measure	**Group**	**M**	**SD**	**t**	**p**
Age	Low	36.8	7.5	3.0	.00
	High	32.3	6.6		
Teaching Time	Low	109.9	65.8	1.9	.06
	High	85.2	60.1		
Admin. Time	Low	3.3	11.2	1.8	.07
	High	0.3	2.0		
GPA	Low	3.5	.84	-.23	.80
	High	3.6	1.0		

CONCLUSIONS

This empirical study revealed that tolerance for ambiguity (TFA) was lower for the older study participants, most notably in social attributes such as interpersonal communications and public image. Results indicated higher levels of TFA were found among the younger and less experienced professionals as compared to the older and more experienced professionals. Thus, since the younger, less experienced professionals were found to be more tolerant of ambiguity; they would tend to be more open to various possibilities when solving dilemmas, based on TFA research (e.g., DeRoma et al., 2003; Patterson, 2001; Stoyvecha, 2003). They are likely to deal better with vague language, partial information, tasks with little structure, and multiple perspectives in problem solving (Norton, 1975; Visser, 2003; Williams, 2006). These results are contrary to previous research results that did not find TFA variations based on age (Clampitt & Williams, 2005).

ALTERNATIVE EXPLANATIONS OF STUDY RESULTS

A variety of reasons exists to explain study results that levels of intolerance for ambiguity (INTFA) are higher with older, more experienced people. One explanation could be that, with age, fewer incidents appear ambiguous, possibly due to having dealt with more situations. Thus, perceiving incidents as not being ambiguous, one may become habituated to respond in firm and conclusive manners. However, in the present study, there was no test or measurement of how ambiguous particular happenings are perceived to be. Rather, there was a measure of the participants' internal tolerance levels for ambiguous situations. A subsequent study could be conducted where participants receive descriptions of a variety of professional incidents and are questioned regarding how ambiguous they perceive the particular episode. An example of a process that could be used is the REACT model, which stands for *recognizing, evaluating, adjusting, choosing, and tracking*, where executives' decision making activities in risk management situations are studied (Clampitt & Williams, 2004; MacCrimmon & Wehrung, 1986). In this type of process activity, measures of age and TFA could be used again, to gauge relationships among levels of perceptions for ambiguity, tolerance for ambiguity, and age. It is feasible that lower TFA results would occur when incidents are perceived as being unambiguous.

A second explanation for the results could be related to older professionals' resistance to or avoidance of cognitive dissonance, and how this influences an individual's tolerance for ambiguity. Festinger (1957) suggests a relationship exists between a person's ambiguity intolerance and "low tolerance for dissonance" (p. 267). Likewise, Shaffer et al. (1973) notes the likelihood "that individuals differing in ambiguity tolerance will differ in the ways they attempt to reduce cognitive inconsistencies" (p. 224).

An individual experiences cognitive dissonance or conflict when one finds inconsistencies between two or among many psychological representations or beliefs (Cooper,

2007). This uncomfortable tension motivates an individual to try to lessen this cognitive dissonance or conflict in order to achieve consonance, similar to a person's motivation to reduce hunger (Clampitt & Williams, n.d.; Festinger, 1957; Matz & Wood, 2005). There are multiple approaches to reduce or eliminate dissonant beliefs or opinions, e.g., changing one's opinion or behavior to the dissonance (Festinger, 1957; Festinger & Carlsmith, 1959). Brehm & Cohen (1962) have indicated that an individual is apt to avoid a choice in proportion to the probability the specific choice will create a cognitive conflict. Thus, a person may avoid (or demonstrate caution in) acquiring new information to reduce dissonance (Festinger, 1957).

In the context of lifelong learning/ongoing professional development; older educators may be more inclined to avoid (be cautious in) obtaining new or updated information so to forego cognitive dissonance experiences. The process of learning where information is assimilated and accommodated (Driscoll, 2005) is a practice that results in cognitive dissonance; and a tolerance for ambiguity in sorting out information to provide cognitive balance (Wicklund & Brehm, 1976; Matz & Wood, 2005).

A third explanation for the findings could be the relationship between age and resistance to change because of the uncertainty (i.e., ambiguity) change brings. Clampitt and Williams (2005) indicate that uncertainty can generate feelings of vulnerability or apprehension that can result in the distortion or misrepresentation of perception as well as information, thus producing multiple results, one of which is resistance to change. Moreover, along with age, gender and ethnicity may be connected with change. The study of Fernandez and Pitts (2007) has suggested that females and Whites (versus males and ethnic minorities) are less likely to be advocates of change. With the majority of participants in this study being females (77%), mostly White, the association of gender and ethnicity with resistance to change could be especially pertinent.

Resistance to change has been defined by Zander (1950) as "Behavior which is intended to protect an individual from the effects of real or imagined change" (Dent & Goldberg, 1999, p. 34). Burke (2002) has pointed out that people do not naturally oppose change, but "resist the imposition of change" (p. 93); thus, threatening one's comfort zone, especially since people want familiarity and predictability (Davidson, 2002; Hartzell, 2003). Moreover, administrators who hold a prevention orientation (i.e., focused concern for responsibility and safety) versus a promotion orientation (i.e., focus on the attainment of accomplishments) tend to be more conservative in a strategic change process, wanting to ensure stability and continuation in any change situation (Taylor-Bianco & Schermerhorn, 2006). In addition, research has shown that the record of success for change processes is surprisingly low (Taylor-Bianco & Schermerhorn, 2006).

Research has identified major factors attributed to an individual's resistance to change (and thus maintain the status quo) related to one's social attributes (e.g., interpersonal communications and public image) with supervisors, colleagues, employees, and the community at large. These key factors include one or more of the following: (1) substantive changes in the job description, e.g., required skills; (2) job displacement, perception of not having job security;

or decline in financial security; (3) interference of social arrangements/associations, e.g., possible resistance to change by employees; trade-offs in the planning process that can result in winners and losers; (4) reduction of personal and professional status; (5) lack of higher management commitment and support (e.g., resources) for organizational change; (6) organizational structure that inhibit change (e.g., existing hierarchical structure can hinder required teamwork approach); (7) emergence of immediate needs (e.g., student enrollment, teacher turnover) redirecting financial and personnel resources away from a long-term, change process; (8) issues of continuity and stability of leadership when conducting a course of action for change; thus, possible failure of the plan; and (9) psychological risks or threats, e.g., fear of possible new demands, lack of control, redundancy, uncontrollable conflicts, and failure; avoidance of conflicting and anxious situations, as well as cynicism (Baker, 2007; Burke, 2002; Clampitt & Williams, n.d.; 2005; Dent & Goldberg, 1999; Fernandez & Pitts, 2007; Fernandez & Rainey, 2006; Hartzell, 2003; Johannsen, 2004; Pardo del Val *&* Fuentes, 2003; Riccucci et al., 2004; Stock, R. 2001; Taylor-Bianco & Schermerhorn, 2006; Senge, 1990; Thompson et al., 1999).

FURTHER RESEARCH STUDY

Further development of this study could be the possible association between (in)tolerance for ambiguity and (in)tolerance for dissonance, suggested by Festinger (1957) as he conjectured the possible ways to examine dissonance. In describing (in)tolerance for dissonance, he states, "One would expect a person with low tolerance for dissonance to see issues more in terms of 'black and white' than would a person with high tolerance for dissonance who might be expected to be able to maintain 'grays' in his cognition" (Festinger, 1957, p. 267). Shaffer et al. (1973) indicates that it is reasonable to typify a dissonance as having a component of ambiguity; thus, it is possible that people having different levels of ambiguity tolerance will differ in approaches as they attempt to diminish cognitive dissonance or inconsistencies. In conjunction with this study, it may be beneficial to look at the connection of the Personal Uncertainty Scale (Clampitt & Williams, n.d.) and/or Personal Uncertainty Management Scale (Clampitt & Williams, 2005), since the Personal Uncertainty Scale was found to be significantly correlated with the Intolerance of Ambiguity Scale by Budner (1962) (Clampitt & Williams, n.d.). Moreover, the work of Stone and Cooper (2001) provides support in exploring the relationship of cognitive dissonance and types of self-attributes (e.g., self-esteem) with tolerance for ambiguity characteristics (e.g., self-confidence), using the Self-standards Model of Cognitive Dissonance framework (Stone & Cooper, 2001).

Another topic of study could include research on the relationship of motivational factors, especially idealism, with the variables of age, professional experience, risk tolerance levels, because of the association between idealism and risk-taking (Taylor-Bianco & Schermerhorn, 2006); since risk-taking has been linked to ambiguity tolerance (DeRoma et al., 2003; Stoyvecha,

2003). For example, the Reiss Profile of Fundamental Goals and Motivation Sensitivities (Reiss & Havercamp, 1998) is a psychometric instrument that provides an analysis of personality where individuals indicate what motivates their behavior. This profile has shown to possess concurrent and criterion validity, as well as good internal and test–retest reliability (Havercamp & Reiss, 2003).

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ARITHMETICAL REASONING SKILLS AS A PREDICTOR OF SUCCESS IN PRINCIPLES OF ACCOUNTING

Michael W. Fedoryshyn, St. John Fisher College
Marcia O'Brien, Roberts Wesleyan College
Arthur Hintz , St. John Fisher College
Kevin Bosner, Medaille College

ABSTRACT

This research examines whether a student's arithmetic reasoning ability has an affect on their performance in the first principles of accounting course. Arithmetic reasoning is defined as the ability to quickly and accurately manipulate numbers and grasp interrelationships between numbers, and perform basic arithmetic operations.

The assumption was that students with better arithmetic reasoning skills would perform better in the course.

At the beginning of the semester a timed, 50 question arithmetical skills test was administered to 247 students enrolled in principles of accounting courses at three regional colleges and universities. Test scores were correlated with students' final numerical average in the course. Gender, major, class year and cumulative grade point average were also tracked for each student.

Results showed significant correlation between arithmetic reasoning skills and performance in the course. However, arithmetic reasoning ability did not explain a major portion of the final course average. We found that GPA was the best predictor of success in the course while gender and major were less effective predictors.

These findings may have an impact on the prerequisites considered appropriate for a principle of accounting course, when it is offered in the curriculum and how students are advised about careers in accounting.

INTRODUCTION

Faculty who teach principles of accounting courses often lament the apparent lack of basic computational skills by students in the classroom. This research tests whether a student's arithmetic reasoning skills can accurately predict performance in the first principles of accounting course. Arithmetic reasoning, also referred to as quantitative skills or mathematical skills, is defined as the ability to quickly and accurately manipulate numbers and grasp

interrelationships between numbers. It includes the ability to perform basic arithmetic operations such as fractions, decimals, percentages, addition, subtraction, multiplication, division and simple algebraic calculations.

For many students, the principles of accounting course determines whether to consider accounting as a career so factors that affect success in the course will affect the types of students attracted to the accounting profession. If good arithmetical skills are a determinant of success in introductory accounting then identifying students with strong mathematical skills early in their college careers might help departments attract more undeclared majors into accounting and offset the declining interest in accounting as a major that has been experienced over the past 20 years (Fedoryshyn & Hintz, 2000). However, if arithmetical reasoning skills are not important to success in introductory accounting, departments may reconsider the types of students they attempt to attract to the program.

BACKGROUND

Prior research has attempted to identify factors that determine success in a principle of accounting course. Doran, Bouillon, and Smith (1991) focused on incoming measures of academic aptitudes and found that GPA and standardized test scores predict success in accounting courses. Tyson (1989) found that gender differences played a significant role in explaining performance differences in introductory accounting courses, with female students outperforming male students. However, another study by Bouillon and Doran (1992) found that males significantly outperformed females in the first introductory course. A recent study by Kealey, Holland, and Watson (2005) indicate that critical thinking skills help explain variations in student performance in principles of accounting.

Prior studies have examined the relationship between quantitative abilities and erformance in accounting courses although these studies have usually focused on performance in specific math courses to explain the results. Gist, Goedde, and Ward, (1996) conducted research on the influence of mathematical skills on the performance of minority students in principles of accounting. They found that B or better performance in a Calculus class was critically related to successful performance of Black students in accounting coursework. Collier and McGowan (1989) examined the connection between student performance in algebra and the ability to successfully complete Intermediate Accounting I and found that better performance in mathematics increased the success rate in Intermediate Accounting I. However, Burdick and Schwartz (1982) did not find that mathematics, algebra or calculus grades were good predictors of performance in Intermediate Accounting courses. Clark and Sweeney (1985) found that college mathematics grades were a good predictor of success in accounting and Shotweel (1999) identified a self-professed affinity for mathematics as one of the factors resulting in improved performance in financial accounting.

This research uses a pre-test to assess a student's quantitative skill and predict success in itroductory accounting rather than focusing on performance in a specific mathematics course to predict success.

If better mathematical computational skills result in better performance in the principle of acounting course then decisions can be made about appropriate prerequisites for the course. Kealey et al. (2005) note that a review of prerequisites for principles of accounting courses at over 50 medium to large public institutions show more than one-third have no prerequisites and among the others a common prerequisite was completion of an algebra course.

Results of this research might dispel a common perception among students that acountants are bean counters and number crunchers and to enjoy accounting a person needs to be good with numbers (Hunt, Falgiani & Interieri, 2004). Many academic advisors reinforce this perception when advising high school and college students about careers in accounting and the accounting profession. Albrecht and Sack (2000) propose this as one reason accounting programs have problems attracting the best and brightest students into their programs and why the number of students choosing to major in accounting has decreased. Faculty and members of the accounting profession understand that accountants are expected to be more than number crunchers but this perception of accountants by students still persists.

Scott, Tassin and Posey (1998) found that those who chose accounting as a major early in their academic career had greater mathematical skills than those who chose accounting later in their academic career.

METHODOLOGY

SAMPLE GROUP

The survey instrument was administered early in the semester to 247 students enrolled in 8 sections of principles of accounting at three regional colleges and universities. The survey was administered only to day sections of the course to minimize any impact that part-time students and non-traditional students might have on the results.

Two of the institutions are private colleges with enrollments under 2500 full-time students and the other is a public university will full-time undergraduate enrollment of 5000. Class size ranged from 15 to 42 students with the 8 sections taught by 3 different instructors. One instructor taught two sections of the course at two different colleges.

Students were instructed that participation in the survey was optional. No incentives were given to participate, however less than 2 % of the students declined to participate. Students could elect to have the results of their test sent to them, along with a comparison to the class mean, which was intended to provide incentive for students to maximize their performance.

10 of the original surveys were not usable since the student failed to complete the course and consequently no correlation could be made with a final average. The demographic breakdown of the remaining sample is as follows:

Table 1

	Total	%	School 1	%	School 2	%	School 3	%
Total Number	237		121		85		31	
Gender								
Male	136	57%	73	60%	46	54%	17	55%
Female	101	43%	48	40%	39	46%	14	45%
Age								
< 25	236	99%	120	99%	85	100%	31	100%
26 - 34	-	-	-	-	-	-	-	-
>35	1	1%	1	1%	-	-	-	-
Major								
Accounting	37	16%	27	22%	6	7%	4	13%
Management	119	50%	54	45%	47	55%	18	58%
Sports Studies	23	10%	23	19%	-	-	-	-
Undeclared	19	8%	9	7%	8	10%	2	6%
Other/Unknown	39	16%	8	7%	24	28%	7	23%
Year								
Freshman	104	44%	70	58%	33	39%	1	3%
Sophomore	74	31%	27	22%	28	33%	19	62%
Junior	48	20%	16	13%	22	26%	10	32%
Senior	11	5%	8	7%	2	2%	1	3%

At one of the colleges, accounting students do not officially declare a major in accounting until being accepted into the School of Business at the end of the 2nd year. At this college some of the students who plan to major in accounting may have classified themselves as undeclared majors and some of the comparisons may be slightly distorted.

SURVEY INSTRUMENT

The survey consisted of a timed, 50 question test designed to measure a student's ability to quickly and accurately answer basic arithmetic reasoning questions, perform basic calculations and complete simple algebraic problems. None of the questions required mathematical skills beyond the level typically covered by the 8th grade. Calculators were not permitted.

The survey instrument is modeled on an Arithmetical Reasoning Test given to prospective employees by a company that employs over 10,000 nationally and 2,500 in the area. Prospective employees need to obtain a minimum score before being hired into positions that

require significant computational skills. The test was designed 20 years ago as an assessment tool to evaluate potential non-exempt hires that had to quickly and accurately process payroll information. In the 1990's the company performed additional statistical testing to ensure it accurately measured arithmetic reasoning skills and began to use it for all potential hires.

Prior to beginning the test, the class instructor provided written instructions to all participants and reviewed the instructions with the class. Three sample questions were provided to the students as practice to ensure they knew what was expected and how to record their answers. When instructed to begin, students were given exactly 16 minutes to complete as many of the 50 questions as possible. They were not required to answer questions in order although most students answered the questions sequentially. Only 7 of the 247 students were able to answer all questions in the allotted time.

To maintain confidentiality of the results and ensure that instructors would not be biased by knowledge of student's scores, after the test was completed they were sealed in an envelope and opened and graded by an individual on sabbatical leave who would have no classroom contact with any of the students in the survey.

Two scores were recorded for each student, a score of the number of questions attempted as well as the number of questions answered correctly, which was used to calculate the percentage of questions answered correctly. The number of questions answered correctly was used as an indicator of a student's speed and efficiency and the percentage correct as a measure of accuracy.

The number of questions answered correctly ranged from a low of 5 to a high of 48 and the percentage correct ranged from 22% to 100%. The mean number of correct answers was 23.1 and the mean percentage correct was 76.7%.

A sample of the types and complexity of the questions on the survey follow.

If a bag of 20 oranges cost 50 cents, how much does each Orange cost?

2 ½ cents? 3 cents? 5 cents? 2 cents?
What two numbers come next in the following series?

10, 8, 11, 9, 12, 10, 13, (?), (??)
How many hours are there in 2-1/3 days?

PERFORMANCE CRITERIA

The student's final numerical average in the course was used as the measure of performance. A student's final letter grade was considered for the measure of performance but it was believed the numerical grade provided a more precise measure and differentiates students with the same final grade but different numerical averages

Predictive Variables

In addition to the scores on the pre-test we obtained information on four other variables to assess the affect they might have on a student final average in the course; 1) gender, 2) major 3) class year and 4) GPA, which we chose as a proxy measure of student motivation.

On the pre-test we asked students to indicate the highest-level mathematics class completed since we intended to include the highest mathematics course completed as one of the predictive variables. Many of the students in the survey were freshmen and referred to a high school course they completed without indicating the type of mathematics included in the course. Therefore, we had insufficient and incomplete data for this measure and excluded it from our analysis. In future studies, students would be provided a list of mathematics courses to choose from instead of asking them to indicate the highest mathematics course completed.

Instructor differences in teaching style, text, grading and course expectations have an impact on final averages. In the statistical analysis of results, instructor differences in assigning final grades were controlled. In future research we would have a common final exam in order to provide a more standard and consistent measure of student performance.

SUMMARY DESCRIPTIVE STATISTICS

Summary descriptive information and performance data on the sample population is indicated in Table 2.

Table 2

	Mean # Correct on Pre-test	Mean % Correct on Pre-test	Mean Final Class Average	Mean GPA
MAJOR				
Accounting	23.5	79.40%	84.40%	3.1
Management	22.4	75.40%	81.90%	2.97
Sports Studies	21.9	71.90%	74.80%	2.9
Undeclared/Other	24.8	78.60%	86.50%	3.16
GENDER				
Male	25.1	77.30%	81.70%	2.95
Female	20.4	75.40%	84.20%	3.14
CLASS YEAR				
Freshmen	23.5	77.10%	83.00%	3.09
Sophomore	21.9	74.40%	82.50%	2.98
Junior	22.8	76.60%	82.20%	2.91
Senior	24.5	74.50%	84.40%	3.03
All Participants	22.9	76.00%	82.70%	3.02

RESULTS

We constructed a number of models to statistically analyze the data and assess the impact of the predictive variables on a student's final academic average in the course. For each model the results are discussed below and the Regression Coefficients, Significance Levels for the predictive variables, and Adjusted R^2 are presented. A Confidence Level of 95% was considered statistically significant (significance level < .05).

The equation used to predict a student's final average in the course, and statistically analyze the impact of the predictive variables, is as follows.

$$FINALAVG = BASE + \beta_1 MATHSCORE + \beta_2 GENDER + \beta_3 MAJOR + \beta_4 YEAR + \beta_5 GPA$$

where:

FINALAVG	=	a student's final numeric average predicted for the course;
BASE	=	a student's predicted final numeric average before adjusting for the other predictive variables included in the model;
MATHSCORE	=	the score on the mathematics pre-test, either the number or the percentage correct;
GENDER	=	1 if female, 0 if male;
MAJOR	=	1 if accounting, 0 otherwise;
YEAR	=	1 if a freshman, 0 otherwise; and
GPA	=	cumulative GPA at the end of the Fall 2005 semester.

MODEL 1 – PREDICTIVE VARIABLE IS THE % CORRECT ON THE PRE-TEST.
MODEL 1A - PREDICTIVE VARIABLE IS THE # CORRECT ON THE PRE-TEST.

In the simplest model we only look at a student's score on the pre-test as a predictor of their final average in the course. Gender, major, class year and cumulative GPA are not included. This model addresses the original assumption that better arithmetical reasoning skills result in better performance in an introductory accounting course. Results are presented and analyzed two ways, one using the % correct on the pre-test as the predictive variable and another using the # correct on the pre-test as the predictive variable. Results for the two variations of the model are shown below.

In Model 1, the predicted final average for a student getting 0 % correct on the pre-test would be 66.0% (66.0 % Base Final Average plus 21.86 X 0%). A student getting 100% correct on the pre-test would have a predicted final average of 87.86% (66.0 % Base Final Average plus 21.86 X 100%). Similar results could be calculated using the # correct on the pre-test in Model 1A.

In both cases we found the final average in the course is significantly correlated to a student's score on the pre-test at a 95% confidence level. However, a low adjusted R^2 in both

cases, ranging from .086 using the % correct to .064 using the # correct, leads us to conclude that a student's mathematical skill as measured by the score on the pre-test is not predictive of a large portion of a student's final average in the course. There are additional factor(s) that contribute to a student's success or failure in introductory accounting.

Table 3			
	Regression	Significance	Adjusted
Predictive Variable	Coefficient	Level	R2
Model 1 - % correct			0.086
Base Final Average	66.00%		
% correct on the pre-test	21.86	0	
Model 1A - # correct			0.064
Base Final Average	75.90%		
# correct on the pre-test	0.296	0	

MODEL 2 – PREDICTIVE VARIABLES ARE THE % CORRECT ON THE PRE-TEST, GENDER AND MAJOR.
MODEL 2A – PREDICTIVE VARIABLES ARE THE # CORRECT ON THE PRE-TEST, GENDER AND MAJOR.

In this model we add a student's gender and major to the score on the pre-test to assess the impact these factors have on a student's final course average. We wanted to see whether gender and major were significant factors at the 95% confidence level and whether they help explain more of a student's final numeric average. The base student for this model is assumed to be a female accounting major. Results for this model are summarized in Table 4

Adding gender and major to the model increased the adjusted R^2 to .245 and .251 respectively. While gender and major help explain more of a student's final average, these two additional variables, along with the score on the pre-test, still do not explain a substantial portion of a student's performance in the course.

As in the first model, the score on the pre-test was significant at the 95% confidence level using either the % correct or the # correct as the predictive value. Using the % correct as the predictive variable (Model 2), gender and major are not significant factors at the 95% level.

However, when the # correct on the pre-test is used as the predictive variable (Model 2A) gender and Sports Study major do become significant predictive variables at the 95% level.

One explanation for the difference in results for gender between the two Models may be that males work quicker than females and are inclined to "guess" whereas females tend to be more methodical and precise and less inclined to "guess". In our sample population, the mean # of questions correct for males was 25.1 and for females it was 20.4, a difference of almost 23%.

However, when measuring the % of questions answered correctly, men averaged 77.3% and women 75.4%, a difference of only 2-½ %. We suspect that tendencies for males to "guess", and therefore attempt more questions and subsequently get more correct, accounts for the differences in the results. We will be performing additional tests to see whether this assumption can be substantiated statistically.

Table 4

	Regression	Significance	Adjusted
Predictive Variable	Coefficient	Level	R2
Model 2 - % correct			0.245
Base Final Average	60.90%		
% correct on the pre-test	22.585	0	
Male	-2.179	0.083	
Management major	-1.108	0.546	
Sport Study major	-4.326	0.092	
Other majors	2.073	0.322	
Model 2A - # correct			0.251
Base Final Average	70.80%		
# correct on the pre-test	0.328	0	
Male	-0.156	0	
Management major	-0.085	0.311	
Sport Study major	-0.146	0.04	
Other majors	0.042	0.606	

A similar explanation might explain why the results found for Sport Study majors are significant at the 95% level when using the # correct as the predictive variable but are not significant when using the % correct. In our study, a disproportionate % of Sport Study majors are male (74%) when compared to the % of males in the overall population (57%). The explanation proposed previously to explain gender differences might also be used to explain the

differing results for Sport Study majors. Again, we will be performing additional tests to see whether this assumption can be substantiated statistically.

Instructors structured these introductory courses so that performance on tests and quizzes was dependent on accuracy and not also speed. In most cases, students were given sufficient time to finish the quizzes and exams without undue time constraints or pressures. Since students did not need to work quickly in order to compete the quizzes and exams then the male students' demonstrated ability to work more quickly than females would not result in better performance on the exams and in their final numeric average. This assumption cannot be substantiated with data collected in this research but might be an interesting topic for future research projects.

The expected signs of the regression coefficients in the model were as expected. Female students outperform males and accounting majors outperform management and sports studies majors, although they do not outperform the "other" majors in the sample.

It was surprising that accounting majors did not outperform the "other" majors in our sample. The "other" category includes a diverse mix of majors with not enough of any one type to analyze statistically. Many of these "other" majors were students later in their program of study, 67% were juniors or seniors, compared with only 3% of the accounting majors who were classified as junior or seniors. In addition, students in the "other" category would be taking the introductory accounting course as an elective course and might be more highly motivated than a student taking it as a requirement. Grose and Wasserman (2004) found that GPA's of students increase each semester after the freshmen year, with the exception of males in the last semester of their senior year. It is reasonable therefore to assume that "other" students who are taking the accounting course later in their college career as an elective will perform better than accounting students early in their college career, especially before some of the weaker accounting majors in the sample change majors due to poor performance or lack of interest in the subject area.

MODEL 3 – PREDICTIVE VARIABLES ARE THE % CORRECT ON THE PRE-TEST, GENDER, MAJOR AND YEAR.
MODEL 3A – PREDICTIVE VARIABLES ARE THE # CORRECT ON THE PRE-TEST, GENDER, MAJOR AND YEAR.

In this model the only additional factor added is the student's class year. The base student represented in this model is a freshman, female accounting major. Results are very similar to Model 2 and 2A and are presented in Table 5.

Adding class year had very little affect on the models Adjusted R^2, decreasing it an insignificant amount in both Models 3 and 3A.

Results indicate that a student's final average in an introductory accounting course increases the later they take it in their college career but these results are not significant at the 95% level.

Table 5			
	Regression	Significance	Adjusted
Predictive Variable	Coefficient	Level	R2
Model 3 - % correct			0.239
Base Final Average	60.80%		
% correct on the pre-test	22.687	0	
Male	-2.154	0.089	
Management major	-1.241	0.504	
Sport Study major	-4.521	0.087	
Other majors	1.85	0.389	
Sophomore	0.541	0.706	
Senior	1.384	0.65	
Model 3A - # correct			0.245
Base Final Average	70.70%		
# correct on the pre-test	0.372	0	
Male	-3.374	0.01	
Management major	-1.93	0.292	
Sport Study major	-5.445	0.038	
Other majors	0.933	0.661	
Sophomore	0.577	0.687	
Senior	0.712	0.815	

Similar to the previous models, the score on the pre-test was still a significant predictor of a student's final numerical average at the 95% level. We also noted the same differences in results for Gender and Sports Study that were identified and explained in Model 2 and 2A.

MODEL 4 – PREDICTIVE VARIABLES ARE THE % CORRECT ON THE PRE-TEST, GENDER, MAJOR AND GPA.
MODEL 4A – PREDICTIVE VARIABLES ARE THE # CORRECT ON THE PRE-TEST, GENDER, MAJOR AND GPA.

The only variable added is a students overall cumulative GPA. We included GPA as a variable since we felt it was an indication of a student's motivation and since prior studies show it to be a significant predictor of success in introductory accounting (Doran, 1991).

Since 44% of the students in the survey were classified as first semester freshmen, we used the end of semester cumulative GPA otherwise no score would be available for a significant portion of the survey population. Results from this model are presented in Table 6.

Table 6			
	Regression	Significance	Adjusted
Predictive Variable	Coefficient	Level	R2
Model 4 - % correct			0.668
Base Final Average	32.70%		
% correct on the pre-test	7.525	0.014	
Male	0.288	0.733	
Management major	-0.735	0.546	
Sport Study major	-3.429	0.045	
Other majors	0.541	0.697	
GPA	12.484	0	
Model 4A - # correct			0.674
Base Final Average	35.60%		
# correct on the pre-test	0.156	0.001	
Male	-0.297	0.733	
Management major	-0.902	0.449	
Sport Study major	-3.636	0.03	
Other majors	0.236	0.863	
GPA	12.391	0	

Adding cumulative GPA as a predictive variable significantly increased the adjusted R^2 to .668 when using the % correct on the pre-test and to .674 when using the # correct. A student's GPA, performance on the pre-test and Sport Study were significant variables at the 95% confidence level.

Introducing cumulative GPA as a variable resulted in gender no longer being significant at the 95% level. These results indicate there may be multi-co-linearity between gender and GPA. As noted in the summary descriptive statistics, the mean cumulative GPA for males was 2.95 and for females 3.14. It is reasonable based on the differences in means to assume that when GPA is added as a variable, the previous effect noted for gender goes away because of the close correlation between gender and cumulative GPA.

We conclude from these results that a student's cumulative GPA is a strong predictor of success in an introductory accounting course, which corresponds with prior research done on determinants of success in accounting (Doran, 1991). Factors that help students achieve higher GPA's, like motivation, are those factors that allow them to overcome weaker quantitative skills and perform better in an introductory accounting course. Females, who perform poorer on average than men on the pre-test, overcome and compensate for these deficiencies in mathematical skills and outperform males with better mathematical skills.

CONCLUSIONS AND RECOMMENDATIONS

Our research shows there is a strong correlation between arithmetic reasoning skills and a student's final average in the introductory accounting course. However, arithmetic reasoning ability does not explain a major portion of a student's final course average. The best predictor of success in the introductory accounting course is a student's cumulative GPA. Gender and major are less effective predictors of success in the first accounting course and class year is not predictive of success.

We hoped to utilize the pre-test as a way to advise students about their preparedness for the first accounting course. If mathematical skills were a strong predictor of success in introductory accounting we could use the pre-test as a means of identifying early in the semester students at risk of performing poorly in the class and suggest strategies to improve their performance. While the pre-test is not a powerful predictor of success in introductory accounting, it is still significant enough to be used as a tool in advising students about their preparedness for the first accounting course. Based on these results we suggest the following:

Requiring a specific mathematics prerequisite for an introductory accounting course may not be necessary or appropriate. Our pre-test measured basic mathematical skills up through the 8th grade level, with basic algebra as the highest level mathematical skill tested. Students who score lower on the mathematical pre-test but have a successful track record, as measured by their GPA, outperform students who score higher on the mathematical test but have lower GPA's. Requiring a minimum GPA as a prerequisite for taking an introductory accounting course would improve student performance and most likely improve faculty enjoyment of the course but this is obviously unrealistic for an introductory level course that is a requirement for majors other than accounting.

The accounting department may want to restrict which students are allowed to take introductory accounting during their first year and when in the curriculum it is recommended for non-accounting majors.

There are many reasons colleges allow students to take accounting in their first year, including scheduling and financial issues. However, the overall quality of an introductory accounting course should improve if students take the course later in their college career. The weakest students will not progress past the first year and in many cases will no longer be in college. The remaining students will have better cumulative GPA's. The combination of these two factors should improve the average GPA of students in the class. As most faculty member teaching an introductory accounting course will attest, the better the class the better the semester.

Faculty perceptions and concerns over poor mathematical skills in their class may be misguided. While students may not always follow the calculations and examples in class, students demonstrate they can compensate for poor quantitative skills by other attributes, such

as motivation and perseverance. Don't worry the next time a student reaches for a calculator when asked to calculate 90% of 100, they may ultimately be one of the better performers despite an apparent lack of quantitative skills.

Indirect evidence based on discussions with accounting professionals note that surveys conducted on partners at national and regional accounting firms show partners score low on quantitative skills and higher on communication, teamwork and creative thinking skills. One study by David McThomas (1987) asked managing partners at public accounting firms to rank the attributes most important to success in their position. At the top of the list were communicative and people oriented attributes. At the bottom of the list of 15 attributes were the technical and quantitative attributes. To thrive in a principles of accounting course it may be helpful to enjoy quantitative analysis, however, to do well in the profession is not dependent on superb mathematical skills. Schools should do everything possible to encourage high GPA students to consider majoring in accounting. In 15 years he/she may be the next partner at a public accounting firm.

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ASSESSING THE LEVEL OF CURRICULUM AND SCHOLARSHIP DIVERSITY IN HIGHER EDUCATION

Kathryn K. Epps, Kennesaw State University
Adrian L. Epps, Kennesaw State University

ABSTRACT

In January of 2007, Kennesaw State University (KSU), a comprehensive state university in the southeastern United States, embarked on the trail to garner an understanding of the extent to which diversity is embedded in the curriculum, scholarship, and creative activities of the campus. This project, the KSU Diversity and Equity Assessment Initiative, consisted of four separate work teams, and each team was charged with assessing the state of diversity in a specific area of the institution. Each work team was comprised of both faculty and staff representatives from all seven colleges on the KSU campus. For the purpose of this project, diversity focused on age, ability/exceptionality, ethnicity, family structure/gender, geographic region/language, religion, sexual orientation/identity, and socioeconomic status. The focus of this paper is to report the processes utilized to assess the level of diversity in the Coles College of Business curriculum and faculty scholarship.

The Education and Scholarship Diversity research team analyzed diversity in the curricular offerings of Kennesaw State University and the coverage of diversity topics in the scholarship (including research and creative activities) of KSU faculty members.

While a previous diversity group had prepared a preliminary course title analysis, the team decided that a list of course titles that suggest diversity topic coverage was limiting for several reasons. The team decided to solicit information directly from faculty members regarding course coverage and research activities that address diversity topics. Direct data collection allowed for analysis of both completed works and works in development. Additionally, the team interviewed business school leadership in order to solicit information and the perspectives of the dean regarding curriculum and scholarship efforts addressing diversity. Other activities included collecting information from peer and aspirant institutions and contributing questions to campus focus groups regarding curriculum and scholarship diversity.

The "Diversity Inventory" became the primary focus of the team's work during Spring 2007. The inventory combined information directly reported by the faculty on diversity in the curriculum and in research and creative activity. The overall response rate was an impressive 45.7% of all Coles College of Business faculty.

INTRODUCTION

The notion of assessing the depth of curricular diversity is a persistent challenge for institutions of higher education that have an interest in ensuring that their students receive a multifaceted educational experience (Vaughn 2007). Research demonstrates the profound need to ensure an effective evaluation process when or if an institution of higher education embarks on upon assessment of diversity in the curriculum or research activities (Williams 2007). Smith (1999) discusses the importance of diversity in the educational and scholarly roles of institutions of higher learning, and she stresses the importance of assessing the adequacy of an institutions current curriculum and scholarship in educating all students for a pluralistic society and diverse work force.

The purpose of the KSU Diversity Inventory is to collect and analyze data regarding the current state of diversity in course offerings and in faculty research and scholarship. In addition to providing valuable benchmark information regarding the courses and scholarship in the college of business that engage with issues of diversity, the inventory also tests a new framework for universities to assess the state of diversity in the two unique, and arguably most valuable, services provided to the community by academic institutions—those of curriculum offerings and scholarship. This paper reports on both the process and the initial assessment results of an assessment initiative that examines curricular and scholarly efforts to address diversity in the Coles College of Business at KSU.

The importance and difficulty of assessing and revising curricular efforts related to diversity have been the focus of recent research efforts. Kezar and Eckel (2005) note that the most successful campus diversity efforts have included campus leadership support, faculty involvement, and multidisciplinary efforts. The authors also note the importance of supporting individual faculty as well as campus-wide efforts that have the potential to shape the curriculum either directly or indirectly.

The remainder of this paper is organized as follows: the next section reviews the literature related to curriculum and scholarship diversity and discusses the research question. The following section describes the methodology utilized to assess curriculum and scholarship diversity efforts. This is followed by a section that describes the results of the assessment initiative. The final section of the paper discusses the implications and limitations of the research.

LITERATURE REVIEW AND RESEARCH QUESTION

The literature regarding curriculum and scholarship diversity in higher education has primarily focused on the importance of diversity topic coverage in the curriculum and the establishment of curriculum diversity requirements (Kezar and Eckel 2005, Smith and Schonfeld 2000, Williams 2007). Jones (2005) stresses the necessity of restructuring the college

curriculum to educate all students for a pluralistic society. While referencing Smith's (1999) model of college and university diversity efforts, Jones continues by stating that existing efforts to improve campus climate, access and success, and intergroup relations at the university level are unlikely to be successful without efforts to include diversity in the curriculum.

Epps (2008) notes that business schools often fail to include thorough coverage of diversity issues in the required curriculum. The author also notes the importance of diversity in corporations, and states that common problems that arise in corporations include failure to address diversity issues or problems that arise, failure to devote significant resources to diversity, and failure to establish an appropriate stance towards diversity from top management. As the workplace environment becomes more diverse, the skill set of managers must often broaden to include establishing professional relationships with employees and customers from differing backgrounds. This skill set is not often included in the standard business curriculum, and many managers tend to ignore problems when they arise.

While the educational benefits of including diversity topic coverage in the curriculum have been summarized by researchers (Smith and Schonfeld 2000), little research has been devoted to the appropriate methods to assess the existing levels and quality of curriculum diversity efforts. Both qualitative and quantitative analysis methods are necessary in the assessment of curriculum and scholarship diversity, and the efforts that are made to document the status of curriculum and scholarship diversity are critical to later assessment efforts.

The efforts at Kennesaw State University to assess the levels of curriculum and scholarship diversity in its College of Business provide important information regarding how institutions of higher learning might examine the extent to which students are being prepared to contribute to global and diverse enterprises. Additionally, the establishment of benchmark levels of diversity curricular coverage and diversity in scholarship efforts will allow the university to later examine the impact of implemented programs and efforts to encourage curriculum and scholarship diversity. Finally, the inclusion of both qualitative and quantitative efforts in the assessment of curriculum and scholarship diversity at this institution provides a needed framework to examine diversity at the college and university level. The research question for this study is as follows:

> *How should business schools assess the level and details of diversity topic coverage in their curriculum offerings and research activities?*

METHODOLOGY

The research team designed the Diversity Inventory based on research. One of the members drafted questions for the diversity inventory, and the team revised the questions during team meetings. The inventory includes a cover letter email received from the dean of the faculty member's college and questions regarding diversity coverage in the course offerings and

scholarship of the faculty member. The web-based curriculum component was preloaded with all business courses and course numbers.

The draft inventory was pilot tested with faculty members from multiple departments. Pilot testing resulted in minor wording changes to the draft cover letter email and the inclusion of additional categories of scholarship categories and stages of completion. Pilot test participants also indicated that they would be more likely to complete the inventory if it was distributed via email, endorsed by their dean, and easy to complete. Based on team discussion and pilot testing feedback, the inventory asks for information regarding significant course coverage of diversity topics. For the purposes of the inventory, significant course coverage is defined as greater than or equal to 25% of the total course coverage. Institutional Review Board approval was sought and obtained for the Diversity Inventory.

In order to encourage participation and receive information back in an easily manipulative format, the inventory was developed for distribution utilizing web-based survey software. One inventory was developed for each academic department. The inventory for each department has all courses taught by the college loaded into drop down lists for selection by the responding faculty member.

The Dean received information regarding the diversity inventory and a request to distribute the cover letter email and inventory to all faculty members in their respective departments. The inventory was distributed to all faculty members on April 27, 2007. Faculty members were requested to complete the inventory no later than May 14, 2007. A reminder email message was sent to faculty members on May 10, 2007.

RESULTS

Table 1 summarizes the overall response rate for the Diversity Inventory and the characteristics of respondents. Forty-eight of the College of Business' (COB) faculty members completed the inventory, which represents approximately 45.7% of the teaching faculty. Panels B – D of the table includes the demographic characteristics of the 48 inventory respondents who answered demographic questions in terms of faculty rank, tenure status, and time at KSU. Panel B describes the faculty rank of respondents. The modal rank of respondents was Full Professor (33.3%), with similar percentages of Assistant Professor (29.2%)and Associate Professor (22.9%) respondents. As detailed in Panel C, the majority of respondents (85.4%) are either tenured or on tenure track. Panel D describes the length of KSU employment of the respondents. The majority of respondents have taught at KSU for ten years or less, and 37.5% of respondents have been employed at KSU for more than ten years. Based on the demographic data, inventory respondents represent a broad cross-section of the College of Business faculty in terms of faculty rank, tenure status, and length of employment at KSU.

Table 1. Overall Response Rate and Respondent Demographics		
Panel A. Number of Respondents		
Approx. Number of Faculty	Number of Responses	Percentage of Faculty Responding
105	48	45.7%
Panel B. Faculty Rank		
Instructor/Lecturer		4
Assistant Professor		14
Associate Professor		11
Full Professor		16
Other (please specify)		0
(skipped this question)		3
Total Respondents		48
Panel C. Faculty Tenure Status		
Not on Tenure Track		4
Untenured but on Tenure Track		16
Tenured		25
(skipped this question)		3
Total Respondents		48
Panel D. Faculty Years of Experience at KSU		
0 - 1 year		3
2 - 3 years		10
4 - 5 years		9
6 - 10 years		5
More than 10 years		18
(skipped this question)		3
Total Respondents		48

Faculty were asked to consider the courses that they taught from Summer 2006 through Spring 2007. As noted in Chart 1, only 25% of the respondents have taught at least one course with significant coverage of diversity topics.

Chart 2 summarizes the overall courses with diversity coverage by diversity topic. As noted in Chart 2, sexual orientation had the least number of responses with 2 courses with significant coverage while all of the other diversity topics were relatively close to each other in the number of course ranging from 7 to 12.

As indicated in Chart 3, in the area of diversity coverage in faculty scholarship, only 9 of the 48 respondents indicated that they participated in scholarship and/or creative activities, which focused on one or more diversity topics.

Chart 1: Number of Faculty Who Taught Courses that Included Diversity Topics

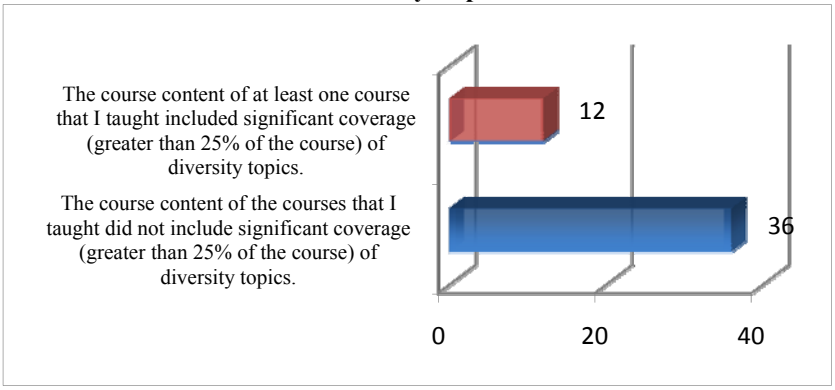


Chart 2: Number of Courses with Significant Diversity Coverage

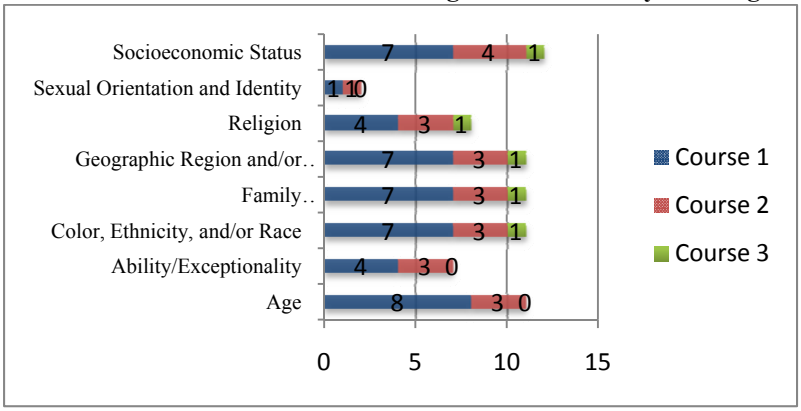
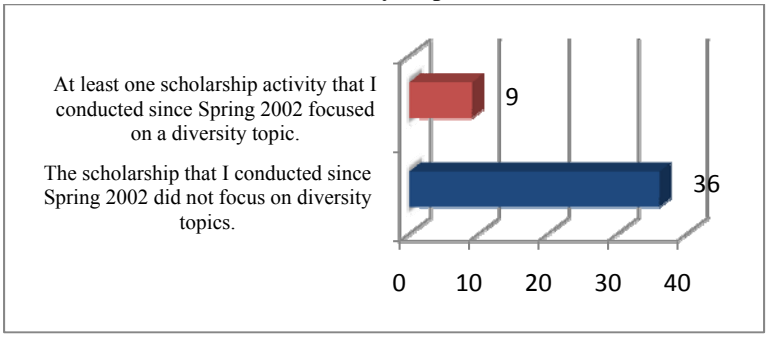


Chart 3: Number of Faculty Who Participated in Scholarship and/or Creative Activity that Included Diversity Topics



Faculty respondents indicated that they are engaged in 148 projects, covering all six research/creative activity categories. In direct parallel to the diversity coverage in the curriculum,

the three most active diversity categories for research and creative activity are "Family Structure/Responsibility or Gender" (42 responses, 28.4%), "Age" (41 responses, 27.7%), and "Geographic Region and/or Language" (23 responses, 15.5%), and. The least frequently appearing categories also closely match diversity in the curriculum: "Socioeconomic Status" (3 responses, 2.03%) and "Sexual Orientation and Identity" (2 responses, 1.35%). Table 2 summarizes the research activities that focused on one or more diversity topics.

Table 2: Number of Scholarship Activities that Focused on Diversity

AREAS OF SCHOLARSHIPS	Published Books	Published Articles	Presented Creative Activity	Conference Presentation or Workshop	Completed but Unpublished Research	Research/Creative Activity in Development	TOTAL
DIVERSITY CATEGORIES							
Age	3	9	10	17	2	0	41
Ability/Exceptionality	1	2	0	3	2	0	8
Color Ethnicity and/or Race	1	2	0	7	1	5	16
Family Structure/Responsibility or Gender	4	10	10	15	2	1	42
Geographic Region and/or Language	1	3	7	7	3	2	23
Religion	1	9	0	3	0	0	13
Sexual Orientation and Identity	1	0	0	1	0	0	2
Socioeconomic Status	1	0	0	1	0	1	3
SUBTOTALS	13	35	27	54	10	9	148

The diversity assessment team also conducted a detailed interview with the leadership of the business school. Below is the result of the interview with the Dean of the Business School:

How adequate is the current curriculum and scholarship for educating all students for a pluralistic society and world in terms of availability (of courses and activities), experience (students' course-taking patterns), and learning (impact on the individual student)?

The Coles College is doing a fair job in terms of curriculum and scholarship diversity. The college has not yet done a strategic assessment of inclusiveness or diversity.

It may be a good idea for the university as a whole to first look at curriculum diversity by analyzing the general education courses that must be taken by all students. In the Coles College, perhaps we should first look at the business core curriculum both on the undergraduate and graduate levels.

What teaching and learning strategies serve this purpose?

In business, we would like to see more strategic inclusion of cases and vignettes analyzing topics related to diversity. Applied examples of issues related to diversity are the best way to incorporate diversity into the business curriculum, both on the undergraduate and graduate levels.

In the Coles College, we might also analyze how we populate the speaker series of invited executives. Including representatives from more representative groups might be beneficial.

How diverse is the faculty, and what difference does this make within departments and the classroom?

Table 3 includes a numerical analysis of faculty diversity within the Coles College. The dean believes that the faculty should reflect both the community in which we live and the business community at large. Consequently, the college should aggressively pursue inclusive recruiting strategies by department.

The dean believes that the only way to be effective in increasing faculty diversity is to have a separate university pool of funds for recruiting minority faculty. These funds should be available to all colleges on a first-come, first-served basis. The funds should not affect the regular recruiting efforts of the departments and colleges. This would be a resource investment that adds value to the university.

How effective are efforts to deepen faculty engagement with new scholarship related to diversity within and among the disciplines?

Although there are no current efforts in the Coles College to encourage scholarship related to diversity, such research is valuable. The dean believes that financial or other incentives should be used to modify behavior of faculty in terms of chosen research topics. Competitive grants or targeted research underwriting might be effective.

What initiatives has your college taken in supporting multicultural curriculum efforts?

The Coles College has not yet taken a strategic looks at our efforts in this area. The dean supports looking at the core courses in an initial assessment.

Table 3. Coles College Faculty Composition—Gender and Race						
	Black	Asian	Hispanic	White	Total	%
Accounting Dept- Females	1	2		9	12	41%
Accounting Dept - Males	1	1		15	17	59%
					29	
Management - Females	1			8	9	36%
Management – Males	1	2		13	16	64%
					25	
Leadership - Females	1			4	5	50%
Leadership – Males				5	5	50%
					10	
Economics - Females		1		7	8	30%
Economics - Males	1	8	1	9	19	70%
					27	
Marketing- Females				5	5	31%
Marketing - Males	1			10	11	69%
					16	
Coles - Females	3	3	0	33	39	36%
Coles - Males	4	11	1	52	68	64%
	7	14	1	85	107	
	7%	13%	1%	79%		

What research and teaching in your college has advanced the University's diversity agenda?

At this time, the college has not analyzed the diversity scholarship that is being conducted.

How is diversity integrated into the curriculum of your college?

The Coles College has not yet taken a strategic looks at our efforts in this area. An important driver to integrating diversity topics into the curriculum would be the regional and professional accrediting bodies. For example, if SACS (Southern Association of Colleges and Schools) and/or AACSB-International (Association to Advance Collegiate Schools of Business)

were to include curriculum diversity as a focus, then business schools would be more likely to integrate diversity into the curriculum.

Which strategies for developing a curriculum that fosters intercultural and international competencies have been most successful? Which have been least successful? Which could be termed "best practices"? (Best Practices are processes, programs, and procedures that most successfully lead to the unit's ability to reach the University's diversity goals and can be validated through measurable outcomes.)

Although the Coles College does not presently have a separate diversity committee, the dean believes that this should be considered as we transition to shared governance. He believes that the committee should perhaps include both faculty and staff.

What measures of success have you identified to gauge your progress in this area? Include data demonstrating outcomes.

The dean would like to see some type of monitoring of minority student and faculty recruiting. Currently, the Assistant Directory of Graduate Programs in the Coles College is working with the National Society of Hispanic MBAs, and we recently received recognition from this group. We also have a relationship with the National Black MBA Association. In these efforts, faculty leadership is key. The dean would support the establishment of a student chapter of the National Association of Black Accountants.

DISCUSSION

In an evaluation of the dimensions of college and university diversity provided by Smith (1999), it is evident that the one dimension that is unique to institutions of higher learning is the dimension of curriculum and scholarship diversity. Institutions of higher learning teach courses and conduct faculty scholarship; therefore, it is appropriate and necessary to assess diversity in these two areas when these institutions attempt to assess campus-wide diversity. Business schools, in particular, produce graduates who often enter multinational and diverse corporations, and these graduates should be prepared to communicate with and appreciate diverse groups of peers, customers, suppliers, and potential business partners.

This study has reported the efforts of one state comprehensive university to assess the level and quality of diversity in its business school curriculum and faculty scholarship. Using a combination of peer and aspirant benchmarking, qualitative interviews, and a unique online assessment tool, Kennesaw State University established a baseline of data with which it can compare future data in order to analyze the results of programs were implemented after the initial assessment.

While the Diversity Assessment Initiative collected data from a significant percentage of business school faculty, the business school response rate was one of the lowest response rates

among campus-wide faculty. This may require follow-up efforts to determine if non-respondents have more data to add to the inventory or whether their work is, by nature, not involved in diversity issues. It is also important to note that some individual research projects may have been counted more than once for different diversity topic categories. Therefore, the total numbers that resulted from the scholarship assessment may not be an accurate total of all diversity research activity within the business school. It does, however, give a sense of the diversity areas that are being addressed in the university's research activities. A final limitation of the study is that it only includes assessment activity at one institution of higher learning. However, the assessment tools utilized at this institution can be modified for the specific circumstances of colleges and universities of differing size, assessment capabilities, and institutional missions.

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TEACHING STRATEGY AND SKEPTICISM: A CAPSTONE APPROACH

Dennis R. Balch, University of North Alabama
Santanu Borah, University of North Alabama

ABSTRACT

Dynamic business environments place a premium on critical thinking and problem-solving skills, which in turn makes teaching these skills a priority for business degree programs. This paper describes a pedagogical approach for combining conceptual and applied learning in a capstone strategic management course. This approach relies on a skeptical, "show me the numbers" technique for evaluating the utility of strategic concepts. Using Krathwohl's (2002) revision of Bloom's (1956) taxonomy of educational objectives as a design framework, the authors describe a robust business analysis model that engages students in constructive research emphasizing higher order Bloom objectives, critical thinking, and problem-based learning.

INTRODUCTION

In any dynamic area of human endeavor, teaching the elements of success is somewhat problematic. Concepts that are state-of-the-art today may be obsolete tomorrow. Nor are the newest concepts always the best—a promising innovation may turn out to be a flash in the pan. The dynamism of business suggests why critical thinking and problem solving skills are often high on employers' lists of most desirable attributes for new hires—the ability to assess or create knowledge is more important than possessing an inventory of unchallenged knowledge. The implication for business educators? While it is important to communicate the body of established knowledge, it is critical to teach the habit of healthy skepticism and empirical validation. This paper describes a pedagogy for teaching a capstone strategic management course that responds to both needs. Bloom's (1956) taxonomy, as revised by Krathwohl (2002), is used as the framework for describing a pedagogy that emphasizes critical thinking and constructive research.

LITERATURE REVIEW

Our approach is informed by three intersecting streams of literature dealing with educational objectives taxonomy, critical thinking, and problem-based learning (PBL).

The Bloom taxonomy of educational objectives has been used not only as a tool for instructors, but also as a tool to assist students in achieving higher order objectives. In its

original form, the taxonomy describes multiple levels of progressively more challenging objectives: knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom, 1956). Krathwohl (2002) provides a two-dimensional adaptation of the original taxonomy, separating knowledge domains and cognitive processes. The Bloom taxonomy is useful for planning and assessing course content and activity (Betts, 2008; Fowler, 2006; Christopher, Thomas, & Tallent-Runnels, 2004; McConnell, Hoover, & Miller, 2008)— instructor-centered uses. The taxonomy may also be used as a tool for teaching critical thinking—a student-centered use. Granello (2001) describes a method that uses Bloom's taxonomy both to diagnose cognitive complexity of graduate papers and to coach counseling students in how to improve their papers. Similarly, Athanassiou, McNett, & Harvey (2003) use the taxonomy as a metacognitive framework or scaffolding device that helps management students self-manage their learning. Essentially, the taxonomy is used to help students grasp the level of sophistication of their work and see what the next step in refinement could be. Krathwohl (2002), a member of the author team for the original 1956 Bloom taxonomy, describes a revision of the original taxonomy. The revision uses a two dimensional matrix in which knowledge categories comprise nouns and the remaining terms are slightly rephrased and presented as verbs (remember, understand, apply, analyze, evaluate, create). The verb components of the matrix represent the cognitive processes that are applied to the knowledge (noun) components. The revision provides improved granularity for classes of knowledge, making it a more complete template for surveying a set of activities and for engaging students in how they think and use knowlege (metacognition).

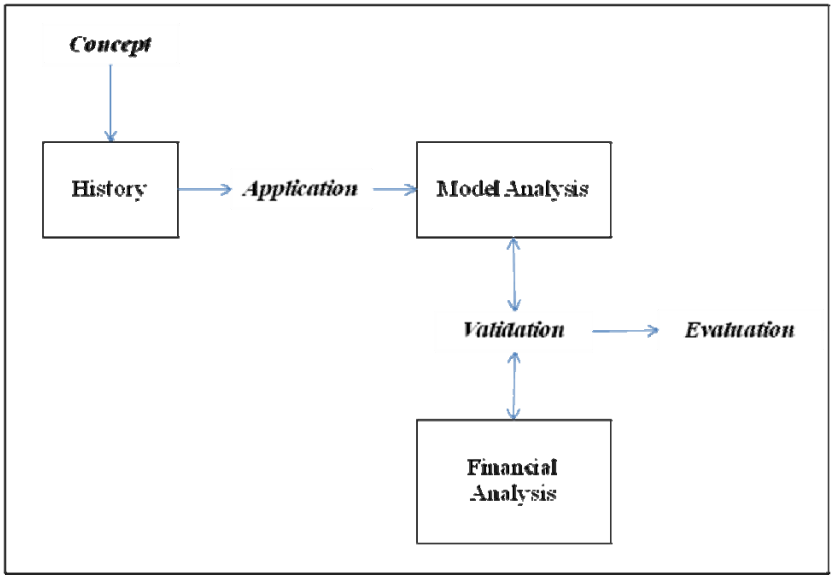
A second body of relevant literature deals with critical thinking. The need for critical thinking in business education has been emphasized and studied by professional groups, consultants, and scholars (Braun, 2004; Celuch & Slama, 1999; Klebba & Hamilton, 2007; McEwen, 1994; Springer & Borthick, 2004; Ulrich, 2005), Smith's (2003) essay provides a valuable survey of relevant theory and explores the difficulties of teaching critical thinking in business education. Springer & Borthick (2004) emphasize the value of a constructivist approach—"constructing one's own understanding rather than inheriting a teacher's words" (278)—and posing challenges that propel accounting students to the higher stages of critical thinking described by Kitchener, Lynch, Fischer, and Wood (1993). Halpern (1998) describes a model for teaching critical thinking grounded in cognitive theory.The third body of literature informing our approach deals with problem-based learning (PBL), a model evolved in medical education (Savery & Duffy, 2001). Founded on constructivist learning principles, PBL highlights the value of confronting cognitive conflict as a stimulus for learning. In other words, the active engagement of a student in wrestling with an incompletely structured problem is preferable to simply acquiring information that has been structured by someone else. PBL depends heavily on critical thinking (Peterson, 2004; Halpern, 1998). Overviews of PBL and its constructivist underpinnings are provided by Savery and Duffy (2001) and Hmelo-Silver (2004). Lebow (1993) articulates key constructivist implications for instructional designers. Peterson (2004) provides a practitioner-oriented advice about implementing PBL in university courses. A

taxonomy of PBL methods is provided by Barrows (1986). Wentland (2004) includes a form of PBL in his survey of teaching methods for improving the critical thinking of economics students.

PEDAGOGICAL MODEL

Like a problem-based approach, our model fosters critical thinking and uses real-world data; unlike the PBL approach, our model begins not by presenting a problem but by teaching a concept that is later presented as part of the candidate solution space for a business analysis problem. The approach employs four key elements in what we call the CAVE model (Concept, Application, Validation, Evaluation), illustrated in the following chart.

Figure 1. CAVE Schema



As students work through the CAVE sequence, they are gradually propelled toward higher-level learning objectives. Table 1 describes each of the four CAVE elements and the key Bloom educational objectives involved in each.

The CAVE approach relies on ready availability of sufficient data to do reasonable financial analysis. While our example uses a company with an atypically lengthy set of data (40 years), sufficient data is available for most publicly traded US and nonUS companies. A quick survey of the top 50 companies in Fortune Global 500 list for 2008 confirms that 44 posted annual reports online and 39 posted at least 5 years of results. The median number of years of available reportage was 9 for nonUS companies and 10 for US companies. This suggests that for teaching purposes, ample financial information is available for both US and nonUS companies to make the CAVE approach feasible.

Table 1. CAVE and Bloom Objectives		
CAVE Elements		Salient Bloom Objectives
Concept:	Introduce conceptual model What is the model? How does it work?	Remember and understand
Application:	Apply the model to historical information of a subject company Based on the model interpretation, what appear to be the key elements in the company's success or failure? Are there obvious shortcomings in the model?	Apply
Validation:	Challenge model findings with financial analysis What does financial analysis reveal about the company's performance? Does the model hold up? Is it contradicted by the financial analysis? Is the model a useful tool? Is the model misleading in any way?	Analyze, evaluate
Evaluation:	Assess effectiveness of strategy; suggest future action Given the aggregate findings from the model application and the financial analysis, how successful is the company's strategy? How could it be modified to be more successful?	Evaluate, create

The approach is demonstrated though an example. Taking Charan and Tichy's (1998) growth strategy matrix as an example of a useful conceptual model (part of the body of established knowledge), we apply the matrix to Wal-Mart's history, developing an interpretation of Wal-Mart's growth strategy. We then develop an alternative historical view through financial analysis and compare these findings to see whether the model findings hold up. Finally, against the backdrop created by the two methods, we evaluate Wal-Mart's overall growth strategy and the separable elements of the strategy.

The same pedagogical framework may be applied with other strategic concepts. The approach simply involves having students try to connect the financial performance of a company or an industry to the elements purportedly explained by a conceptual model. This approach offers two primary benefits:

1. Students learn a *skeptical approach* that requires quantitative proof of conceptual findings (they learn to challenge, quantify and defend their findings).
2. Students experience *constructive research* (instead of simply finding and reporting research done by someone else, they manipulate raw data to develop information that they can then evaluate).

As Appendix A shows, the approach focuses students on the higher order objectives (apply, analyze, evaluate, create) of the learning objectives taxonomy, engaging them in more critical thinking.

CONTEXT FOR STUDYING GROWTH

We begin by establishing a motive for studying the chosen concept (in our example, growth) and challenging students to prove whether and how the conceptual benefits of growth have materialized for Wal-Mart. Twentieth-century innovations in communications, information technology, and transportation have revolutionized supply chain logistics so that larger scope operations can be effectively managed to deliver valuable economies of scale. In this context, growth is a defensive as well as an offensive tool—failure to grow sufficiently means being left behind and relegated to a niche role. Consider that in the forty years 1969-2009 U.S. GDP grew from $.99 billion to $14.3 billion (14.5X), while in the same period the size of the #1 position in the Fortune 500 grew from $22 billion to $443 billion (20X), and the average size of the top 50 in the Fortune 500 grew from $3.9 billion to $99.4 billion (more than 25X). This is information that students would be expected to develop in preliminary exercises. Growth is necessary to consolidate market position and avoid ceding the economy of scale advantage.

But if growth is necessary, not all growth is equally profitable. Kim and Mauborgne (2004) point out that uncontested (blue ocean) growth opportunities will typically be more profitable than opportunities in hotly contested markets (red ocean—blood in the water from competition). Charan and Tichy (1998) categorize growth in a 2x2 matrix that differentiates new/existing customers and new/existing needs. Quadrant C in this matrix (new customers/new needs) is the high risk, potentially huge reward quadrant—the rough equivalent of Kim and Mauborgne's blue ocean. Zook (2007) points out how long-lived companies balance growth from the existing base with innovative growth in a focus-expand-redefine cycle: "They prosper first by focusing relentlessly on what they do well, next by expanding on that core to grow, and then, when the core has lost its relevance, by redefining themselves and focusing anew on a different core strength" (75). With readings in these conceptual sources as a backdrop, we ask students to study the evidence and evaluate the Wal-Mart growth strategy: does the Charan and Tichy model help to explain the Wal-Mart success? Does the evidence show a premium for blue ocean growth? What are the relative contributions of the core business to the areas of innovation that have been added?

APPLYING THE CONCEPTS TO WAL-MART

Wal-Mart emerged in 1962 shortly after the birth of discount retailing. Being already in the retail industry with his variety stores, Sam Walton was quick to recognize the high potential of the discount retailing, which was already challenging his business. He was correct in his

judgment. Today, Wal-Mart is a global company with more than 2.1 million associates worldwide and 7,873 stores and wholesale clubs across 15 countries with $401.2 billion in global revenue in the fiscal year ended January 31, 2009 (Wal-Mart, 2009). To dissect the Wal-Mart growth story, we bring to bear the Charan and Tichy growth matrix and a battery of financial analyses, creating an extended example of the CAVE approach to teaching strategic management.

GROWTH MATRIX

Students are asked to research Wal-Mart corporate history and populate the Charan and Tichy 2x2 matrix with initiatives that appear to have contributed to the company's growth. This part of the assignment stresses *application* (use the matrix to explain something about the real world), *analysis* (what appears to have been the motive for each initiative?), and *creation* (show how the analyzed elements cluster to form strategic patterns). Students are driven to *remember and understand* primary sources of information (annual reports and 10-K reports).

The result we seek would be a populated 2x2 matrix, with dated elements, something like the chart in Table 2. Several insights may be gleaned from the example matrix—the following list exemplifies the kind of observations we would hope to see from students.

Quadrant A: Wal-Mart has consistently pursued operating innovations that not only lower cost but provide more seamless integration of supply chain elements and give management more timely insight into daily operations. These innovations, though sometimes transparent to customers, serve the existing needs of existing customers by holding down cost, which translates into lower price and better value. These innovations support growth by making it more feasible to effectively manage a far-flung network of retail stores and the massive supply chain that feeds it.

Quadrant B: Wal-Mart has pursued steady geographic expansion as a way to achieve growth, first domestically, then internationally. This expansion essentially carries the existing value proposition to new customers. Complications have emerged in the international expansion. Local preferences may not always fit the Wal-Mart model; ventures in Germany and Europe were discontinued in 2006. And policy constraints have affected the way Wal-Mart is able to participate in India (as a wholesaler and supply chain manager rather than as a retailer).

Quadrant C: Wal-Mart has generally focused on its core business, using strategic strengths in integrated operations and supply chain management to succeed in the highly competitive discount retail industry. For the most part, Wal-Mart has not has not attempted to define "blue ocean" opportunities for uncontested operation, seeking to satisfy new needs of new customers. In two instances, however, Wal-Mart has found opportunities to build new business opportunities that leverage its core competencies. The Sam's Club membership warehouse business addresses the needs of small businesses, and the Bharti Wal-Mart joint venture

addresses the wholesale and supply chain management needs of retailers in a market otherwise closed to Wal-Mart.

Quadrant D: Wal-Mart has not only used geographic expansion to fuel growth, but it has also consistently expanded the set of products and services it offers in order to claim a greater share of wallet for its existing customers. Note that regulatory policy constraints sometimes block Wal-Mart's ambitions. In the U.S., Wal-Mart's attempts to enter banking have so far been frustrated, and in India, government policy has prohibited Wal-Mart's participation as a retailer.

Table 2. Wal-Mart 2x2 Growth Matrix

New Needs	D Pharmacy ('78) Auto Service ('78) Jewelry ('78) Photo-lab ('83) SuperCenter ('88) Sam's Choice ('91) OneSource ('97) Neighborhood Market ('98) Wire Transfer, Hey Buck	C Sam's Club ('83) Bharti Wal-Mart Private Limited ('07)
Existing Needs	A Discount Stores ('62) Wal-Mart Stores ('69) Distribution Center ('70) Satellite Network ('87) Barcode Scanning ('88) RFID ('04) $4 generic prescription ('06)	B US Expansion MO & OK ('68) 11 states ('80), 20 states ('85) 29 states ('90), 50 states ('95) International Expansion Mexico ('91) Canada, Hong Kong ('94) Argentina, Brazil, Puerto Rico ('95) China ('96) UK ('99) Japan ('05) Central America ('06) India (not retail; '07) Chile ('09)
	Existing Customers	New Customers

FINANCIAL ANALYSIS

The Charan and Tichy matrix, while it yields some interesting insights, also raises questions. Which of the growth quadrants contributes most to growth? To profitability? Is domestic or international growth higher quality? What are the growth and profitability trends?

Does Wal-Mart have a sustainable growth strategy or not? To answer these questions requires several pieces of quantitative analysis which are fairly straightforward.

In terms of student deliverables, we expect students to

1. assemble extensive time-sequence financial data—key income statement data over the period of study (for our example company the multi-year summaries in the annual reports provide a good starting point),
2. capture and analyze segment-granular revenue and operating profit data from the three business segments Wal-Mart operates in,
3. assemble multiyear trend data for proportions of revenue coming from different product categories,
4. integrate the findings from the various pieces of information they have produced.

In Bloom terminology, the assignment stresses *application* (use ratio and growth computation to transform raw data into a form that reveals trends), *analysis* (what do the financial measures reveal about the nature of Wal-Mart's historic growth and the relative performance of the segments?), and *creation* (explain what all this information adds up to). Students are driven to *remember* and *understand* primary sources of information (annual reports, 10-K reports, and spreadsheet excerpts from 10-K reports) and basic analytic tools (financial ratios, spreadsheet formulas and charts).

WAL-MART INCOME STATEMENT ANALYSIS

Required data comes from Wal-Mart income statements: consolidated revenue, cost of sales, operating expense, and net income data for the years 1969 (the year of incorporation as Wal-Mart Stores) through 2009. This provides a multiyear stream of revenue growth and profitability data for students to analyze.

The history of Wal-Mart revenue growth is impressive despite the progressive slowing of growth (Figure 2) that is characteristic of a very large company. In its most recent year, Wal-Mart delivered $401 billion in revenue, a 7.1% increase over the prior year. Since the Wal-Mart Stores incorporation in 1969, Wal-Mart revenue has grown at a 27.9% compound annual growth rate (CAGR); profit has grown at a 28.4% CAGR over the same period. To put this is context, consider that the revenue for the top 50 companies in the Fortune ranking has a CAGR of only 8.4% in the period 1969-2009; profit for the top 50 has a CAGR of only 6.5% over the same period (computed from Fortune, 1969; Fortune, 2009). The CAGR Progression chart (Figure 3) shows CAGR for the 40 year period and each of the four decades. The CAGR for the last five years was 9.7% The conclusion is inescapable—Wal-Mart has been an impressive growth engine. At 7% on the current $400 billion base, the annual increment would be $28 billion. Just for calibration, a $28 billion company would have ranked 92nd in the 2009 Fortune 100.

The multiyear chart of key ratios (Figure 4) shows remarkably consistent management. The cost of sales to revenue ratio has been declining (a favorable trend) since 1997. The operating expense to revenue ratio, after declining from 1982 until 1993, has drifted up (an unfavorable trend) since 1993, putting pressure on net profit. Although the five-year rolling average for net margin (Figure 5) has been at 3.5% for the last six years, in the last three years, the net margins have been 3.3%, 3.4%, and 3.3%. It appears that growth is happening, but since profit margins are under pressure, some of the growth is less profitable than prior business has been.

Figure 2. Wal-Mart Revenue Growth

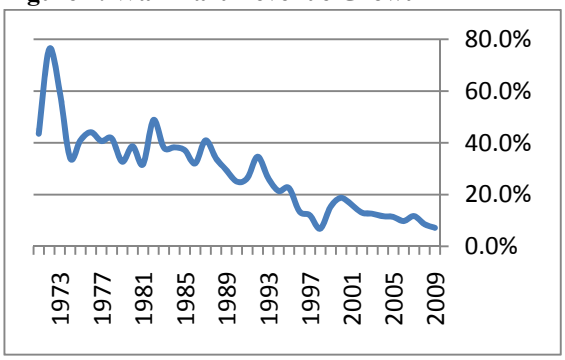


Figure 3. Wal-Mart CAGR Progression

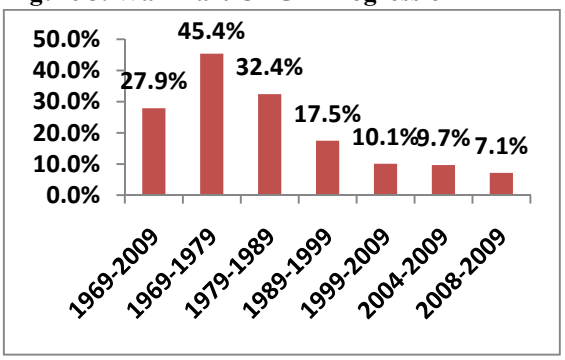


Figure 4. Key Common Size Ratio Trends

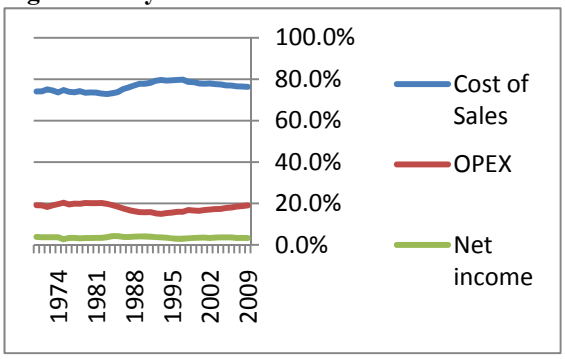
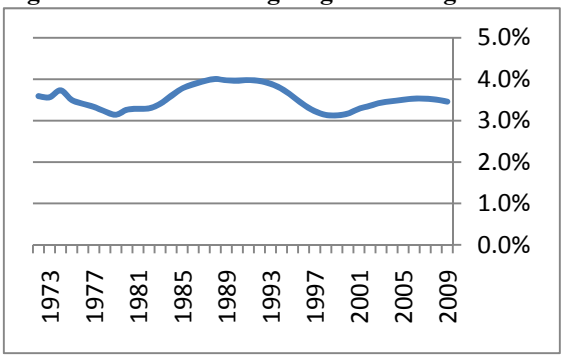


Figure 5. 5-Year Rolling Avg. Net Margin



BUSINESS SEGMENT INCOME STATEMENT ANALYSIS

To explore the question of the quality of growth (what kind of earnings do the growth areas bring in?), we need to examine segment growth and profitability.

Wal-Mart annual reports provide a breakout of revenue and operating income data for each business segment (Wal-Mart Stores, Sam's Club, and International). Segment operating income is not broken out in the annual reporting until 1998.

The revenue growth curves (Figure 6) show that the International segment is the fastest growing segment. In the most recent year, International grew at 9.1%, Wal-Mart Stores (the

domestic operation) by 6.8%, and Sam's Club by 5.6%. International is currently a $98.6 billion business, not quite 25% of total revenues; in 2000, at $22.7 billion, International was 14.5% of total revenue. While International is becoming a larger proportion of the business (Figure 8), Sam's Club is becoming a smaller proportion of the business. In the most recent year, Sam's Club did $46.9 billion (almost 12% of total revenue), compared to $24.8 billion in 2000 (almost 16% of total revenue). Wal-Mart Stores delivered 69.6% of revenue in 2000, but only 63.7% in fiscal 2009. The chart of operating income proportions (Figure 9) shows a similar pattern—International is responsible for an increasing share of operating profits, although International's rate of operating income growth (Figure 7) has fallen below that of the other two segments. It is clear that the Quadrant B and C growth initiatives have been critical to Wal-Mart success—without Sam's Club and International, Wal-Mart would be less than two-thirds of its current size.

To get better perspective on the operating income contribution of the segments, we consider a chart of the operating margin trend (Figure 10) for each segment. This chart shows that Sam's Club has the lowest operating margin (3.4% and slightly declining in 2009); International has a significantly lower operating margin than Wal-Mart Stores (5% and declining in 2009). Wal-Mart Stores' operating margin has been a steady 7.3% for the past four years. These charts show that while International has been a critical growth factor, the growth has been less profitable than the core Wal-Mart Stores business.

Figure 6. Segment Revenue Growth

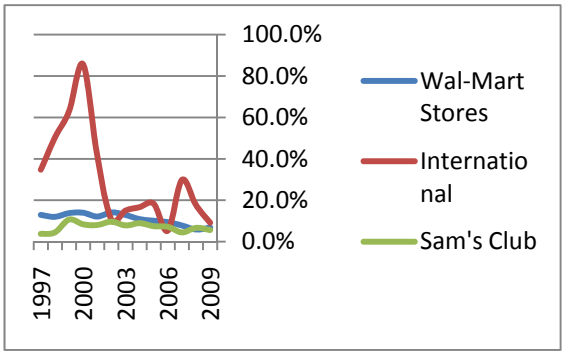


Figure 7. Segment Operating Income Growth

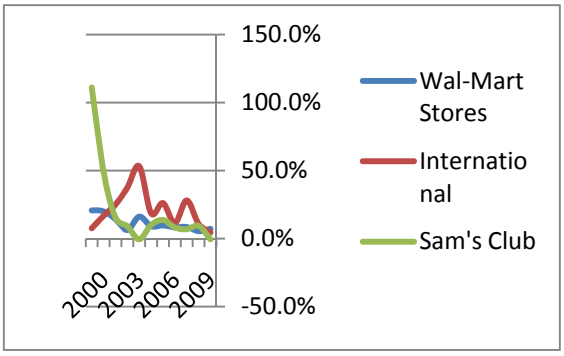


Figure 8. Segment Revenue Proportions

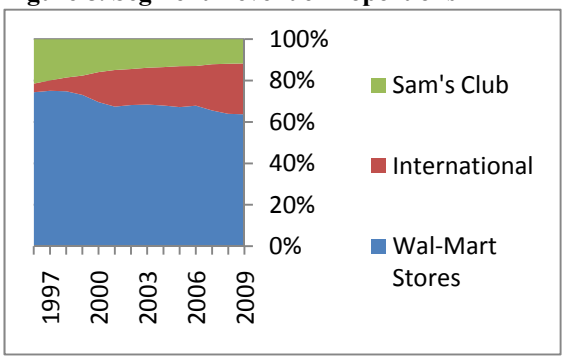


Figure 9. Segment Operating Income Proportions

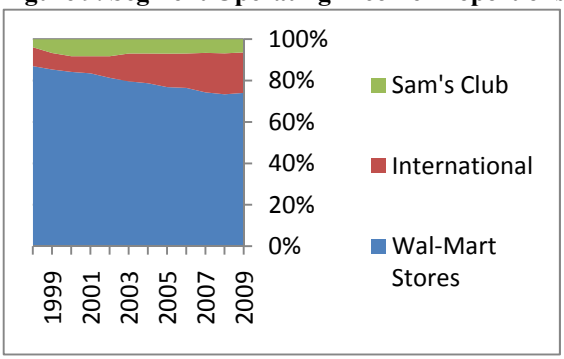
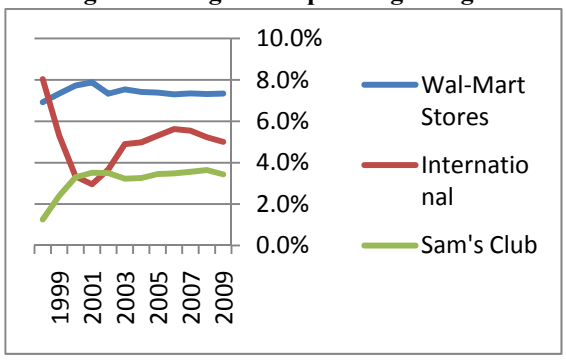


Figure 10. Segment Operating Margins



PRODUCT MIX ANALYSIS

Since one method for achieving growth has been adding product or service categories, it is important to understand the significance of the added categories.

Students are asked to assemble a multiyear profile of the product mix that Wal-Mart reports; this information is part of the 10-K report. These details are reported for the Wal-Mart Stores and Sam's Club segments. Our example analyzes the Wal-Mart Stores segment. Since the categorization scheme changed for 2008 and 2009, we analyze the eight year sequence ending in fiscal 2007; see Table 3 below.

The analysis compares the category contributions to revenue at the beginning and end of the period.

Table 3. Percentage of Sales By Category

Category	2007 Revenue ($B)	2007	2000
Grocery, candy and tobacco	$ 70.2	31%	18%
Hardgoods	$ 40.7	18%	22%
Softgoods and domestics	$ 33.9	15%	20%
Electronics	$ 22.6	10%	8%
Pharmaceuticals	$ 20.4	9%	10%
Health and beauty aids	$ 15.8	7%	7%
Sporting goods and toys	$ 11.3	5%	7%
Stationery and books	$ 4.5	2%	3%
Photo processing	$ 2.3	1%	1%
Jewelry	$ 2.3	1%	2%
Shoes	$ 2.3	1%	2%

Two categories (grocery and electronics) grew in proportion significantly over the eight year period. Just for context, a standalone company the size of the grocery category ($70.2 billion) would have ranked 27th on the 2009 Fortune 100 list. A standalone company the size of the electronics category ($22.6 billion) would have ranked 113th on the Fortune 500 list. In fiscal 2007, the electronics category of Wal-Mart Stores was 63% the size of Best Buy's total business. This data gives a sense of the scope of the Wal-Mart operation. Even the smallest categories of approximately $2.3 billion would have ranked 823rd in the 2009 Fortune 1000 ranking.

CONCLUSION

The example we have provided shows how the CAVE model (Concept, Application, Validation, Evaluation) guides students to

1. learn a concept
2. apply the concept to historical information for a major company
3. challenge the concept with a battery of financial analyses
4. evaluate the relative performance of key pieces of company strategy

Appendix B summarizes the insights from the two different approaches used to study Wal-Mart's growth strategy. The Charan and Tichy growth matrix is useful to organize information and frame questions, but its insights are relatively thin and sometimes misleading without the support of good financial analysis. As for the financial analysis, note that no single measure is the key to understanding the growth performance of Wal-Mart or any other company. Planting the awareness that multiple methods and measures are required for a good analysis is one of the primary objectives of the CAVE approach.

One of the useful attributes of this approach to teaching strategic management is that understanding unfolds incrementally. This provides many teachable moments when a plausible interpretation is overturned or significantly modified by newly developed information. Such experiences teach students the value of testing assumptions and the importance of looking at problems from multiple perspectives and being persistent in analysis. They also learn that what appear to be plausible answers can prove to be inaccurate in the face of additional information. In these ways, CAVE provides a vehicle for practicing critical thinking and reflection skills.

CAVE is usable for individual or team assignments, and can be usefully employed to generate comparisons of two or more companies. Other conceptual models (e.g., macroenvironmental influence, five forces industry model, industry life cycle) may be used instead of the growth matrix model. While the analyses required are not complex, the insights they produce are substantive, requiring students to exercise the full array of cognitive processes in the revised Bloom model. Appendix A maps the project described in this paper onto the matrix described by Krathwohl (2002), demonstrating how the matrix can be used to visualize

the density of project activity in the various cognitive process and knowledge dimensions. This is valuable not only for course designers and instructors, but also for students, as it helps them understand the difference between lower order and higher order learning goals.

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<table>
<tr><th colspan="7">APPENDIX A REVISED BLOOM TAXONOMY APPLIED TO WAL-MART GROWTH STUDY</th></tr>
<tr><td>Knowledge Dimension</td><td>Remember</td><td>Understand</td><td>Apply</td><td>Analyze</td><td>Evaluate</td><td>Create</td></tr>
<tr><td>Factual Knowledge</td><td colspan="2">Ratio formulas; year on year growth & CAGR calculations</td><td rowspan="2">Apply the Charan & Tichy model to the relevant Wal-Mart historical information</td><td colspan="2">Research and select relevant Wal-Mart historical information

Which initiatives are relevant to the inquiry?</td><td>Create interpretive graphical representation of financial analysis</td></tr>
<tr><td>Conceptual Knowledge</td><td colspan="2">Charan & Tichy model; ratio significance</td><td colspan="2">Relate ratio and growth findings to Wal-Mart initiatives

Which initiatives appeared most successful? Which class of initiatives seems most valuable? What evidence can support the conclusions?</td><td>Suggest how the Charan & Tichy model could be improved</td></tr>
<tr><td>Procedural Knowledge</td><td>Where to find, how to assemble data</td><td></td><td>Apply ratios & YOY growth to assembled data</td><td></td><td></td><td></td></tr>
<tr><td>Metacognitive Knowledge</td><td></td><td></td><td></td><td></td><td>Discuss strengths, weaknesses of C&T model, financial analysis; were intermediate perceptions inaccurate?</td><td>Recommend options for continued growth; defend with reference to financial and growth assumptions</td></tr>
</table>

APPENDIX B: COMPARISON OF CHARAN & TICHY TO FINANCIAL ANALYSIS FINDINGS	
Charan & Tichy Matrix	Financial Analysis
Quadrant A. Some initiatives cited in this quadrant are transparent to customers. Because they contribute to scalable operating efficiencies, they are indirectly visible in the form of value delivered.	The favorable downward trend in the cost of sales ratio implies that the Quadrant A initiatives have been effective in delivering supply chain efficiencies. However, the unfavorable upward trend in the operating expense ratio suggests that the complications of growth exact expenses that have eroded the benefits of the supply chain efficiencies.
Quadrant B. Geographic expansion has clearly been a key part of the growth strategy. Domestic expansion was the initial focus, with international expansion picking up momentum after the mid '90s.	The segment growth figures show that International is clearly the revenue growth star among the Wal-Mart segments, but that is only part of the picture. While International's revenue growth is 2.3 points higher than Wal-Mart Stores, the growth of International operating income is 2.6 points lower than Wal-Mart Stores. The revenue growth is coming at the cost of less efficient operation in the International segment. Since the International share of both revenue and operating income is steadily growing, it is clear that achieving operating efficiencies in this segment is critical to future success. Meanwhile, the superior operating profitability of the Wal-Mart Stores segment highlights its critical role in supporting a stable profitability profile while International refines its operation. International currently delivers $98.6 billion, almost 25% of total revenue. Wal-Mart would be only 75% of its current revenue size without the international expansion, and would have only 80% of the operating profit it currently has.
Quadrant C. Wal-Mart has innovated in two new needs/new customer venues. First by serving small business needs with Sam's Club membership warehouse, then by providing wholesale and supply chain management support to retailers through the Bharti joint venture in India. In both cases, Wal-Mart leverages core competencies that support its discount retail business.	The Bharti joint venture is still very new and its operating details are not separately reported, so it is not possible to analyze its financial performance. The Sam's Club segment is the weak performer among the Wal-Mart segments, with the slowest revenue growth, slowest operating income growth, and lowest operating margin. The financial performance of the segment does not support the Charan & Tichy view that Quadrant C ventures should be significantly more profitable than ventures in the other growth quadrants.
Quadrant D. Wal-Mart has consistently expanded its mix of product and service categories to seek a greater share of wallet for its existing customers.	Analysis of the category contributions confirms that the Quadrant D growth initiatives have been very critical to Wal-Mart growth. Grocery (SuperCenter and Neighborhood Market formats), pharmacy, jewelry and photo initiatives accounted for $95 billion (42%) of Wal-Mart Stores' revenue in fiscal 2007. These growth initiatives now contribute roughly the same amount of revenue as the international expansion.