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Editors

TOTAL QUALITY CULTURE (TQC) IN EDUCATIONAL INSTITUTIONS: A GULF CORPORATION COUNCIL (GCC) REGION STUDY

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Noor Fauziah Sulaiman, Qatar University
Rajab Al-Esmail, Qatar University

ABSTRACT

Adoption of Total Quality Management (TQM) principles has been recognised as a new framework for managing change within educational institutions. Although there have been studies examining the adoption of TQM, research on Total Quality Culture (TQC) in the Gulf Corporation Council (GCC) countries context and from educational institutions is lacking. To fill this gap, this paper uses 11 Critical-Success-Factors (CSFs) developed in revisited model of leverage points for a Total Quality Culture (TQC) to evaluate the progress of TQM. To conduct this empirical research, managers, principals, faculty, and administrators in charge of TQM or acceleration from many educational institutions in GCC countries were involved. This paper adds insight on the state of TQM in education in the Middle East, and particularly in the Gulf Corporation Council (GCC) context.

INTRODUCTION

Total Quality Management (TQM) aims at changing the culture of institutions so that employees put quality first. Literature has indicated that educational institutions have been lagging behind other organizations in implementing TQM (Bolton, 1995; Sirvanci, 2004; Singh et al., 2008). There are many reasons behind low TQM implementation since this implementation requires a TQM culture. People must come to a new understanding of what quality means. For a TQM organisation, this learning is ongoing as the organisation continuously seeks to improve customer value. TQM offers increased quality and efficiency, less waste, higher productivity, enhanced customer satisfaction and better image of education institutions (McCormick, 1993; Biehl, 1999; Hwarng and Teo, 2001; Hides et al., 2004; Singh et al., 2008). Unfortunately, there is limited literature emphasizing the adoption of TQC values and philosophy within GCC countries, especially in an educational context (Al-Khalifa & Aspinwall, 2000; 2001; Salaheldin & Zain, 2007; Salaheldin 2009; Al-Attiyah & Al-Khalifa, 2009). Al-Khalifa and Aspinwall comprehensively investigated the implementation of TQM and TQC in Qatar approximately a decade ago but their emphasis was limited to manufacturing industries.

Al-Khalifa and Aspinwall (2001) concluded that Qatari companies would find difficulties in implementing TQC because they are dominated by a hierarchical culture. Accordingly most organizations have a mix of cultural types which do not match the cultural profile of TQC. This assessment highlights where changes are needed to support a total quality approach. Therefore, without assessing the current trend, we cannot draw appropriate strategies and policies in order to close the gap. Many organizations have no clear idea of the progress they have made or how far they still have to go (Lascelles and Dale 1993; Evans 2007; Evans and Lindsay, 2008). Therefore, TQM models based on numbers of essential elements described by some researchers (Singh et al., 2008; Fryer et al., 2007) as the Critical Success Factor (CSF) are necessary for successful TQC implementation. Quazi et al. (1998) highlighted that managers could use the CSFs to evaluate the perceptions of quality management in their organisation as well as help decision-makers to identify those areas of quality management where improvements should be made. Eleven CSFs were identified which influence TQC implementation in education. These factors are interrelated and reinforce each other (Figure 1):

1. *Necessary management behaviour;*
2. *A strategy for TQM implementation;*
3. *Education and training;*
4. *Organisation for TQM;*
5. *Process management and systems;*
6. *Employee involvement;*
7. *Teamwork;*
8. *Partnering;*
9. *Communication for TQM;*
10. *Recognition and reward; and,*
11. *Quality technologies (tools and techniques).*

These CSFs presented to act as a guide for higher education contemplating a TQC initiative. This paper provides much needed current information on the state of TQC within the GCC educational context based on 11 CSF in response to this need. Providing the current status of TQM in an institution or an organisation is crucial to implementing quality programmes (Davies et al., 2007). Specifically this study attempts to address the following research questions:

1. *What is the extent and nature of TQC environment within the academic institutions in GCC countries?*

2. *What are the perceptions of quality management within academic institutions?*

3. *What are the factors (obstacles) for not implementing/initiating TQC within academic institutions?*

4. *What are the respondent's views on Critical Success Factors (CSF) influencing the environment for TQ-culture?*

LITERATURE REVIEW

The Key Success Factors and the Leverage Points for a Total Quality Culture Transformation

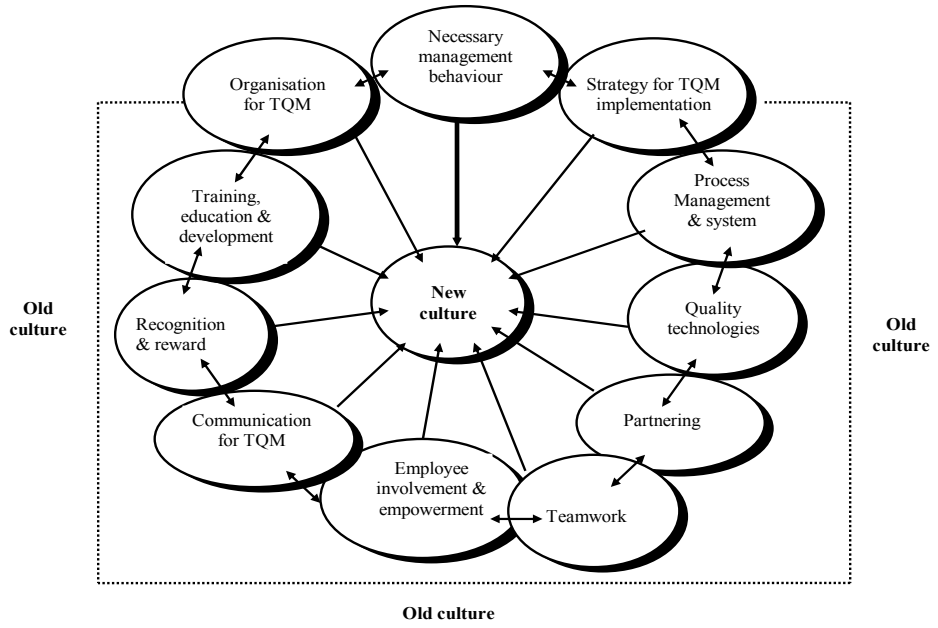
TQM models, based on the teachings of quality gurus or international quality awards, generally involve a number of "essential elements" or "correct environment" that has been described by some researchers (Kanji & Yui, 1997; Kanji et. al, 1999; Evans, 2007; Fryer et al., 2007; Singh et al., 2008) as the critical success factors (CSFs) which are required for successful TQC implementation. They are helpful in assessing the current culture and work to build or adjust an existing culture towards one which will more directly support a TQ-culture. Thus, this paper attempts to evaluate the progress of TQC implementation in educational institutions based on 11 critical success factors (CSFs) or "essential elements" developed in the revisited Model of Leverage Points for a Total Quality Culture Transformation developed by Sulaiman (2002). These factors are interrelated and reinforce each other as summarised in Figure 1. The model was built on several past studies on CSFs for TQM such as Saraph et al. (1989), Porter and Parker (1993), and Kanji and Yui (1997).

The eleven factors are elaborated in Sulaiman (2002, pp. 65-69). In addition, Sirvanci (2004); Ziegler (2005), Badri et al. (2005), Calvo-Mora et al. (2006), Takkar et al. (2006) the Baldrige Education Criteria for Performance Excellence (NIST, 2009) and Hooper (n.d.) have discussed the application of these essential elements of TQC in education.

As demonstrated in the Figure 1, they initially strive to function within the old organisational culture, which can easily undermine them. Three things can help to counteract this influence of the old culture (Figure 2). The approach to culture change is similar to Lewin's (1951) three-stage plan of "unfreezing, changing and re-freezing" (as cited in Robbins & DeCenzo, 2005, p.285). The first stage is both a thought revolution and a behavioural revolution, which come from a correct understanding on the meaning of quality itself. Creating this can be considered to be the necessary management behaviour, which is the prerequisite for the development of a total quality culture. Change must be rooted in the business needs of the organisation. The initial levers of change are to be found in the "soft" elements of culture areas that are largely related to people and the behavioural aspects of working life such as roles people play throughout the organisation which control the "hard" elements of culture such as the methods, tools, and systems they use to provide the working content of these roles. The second

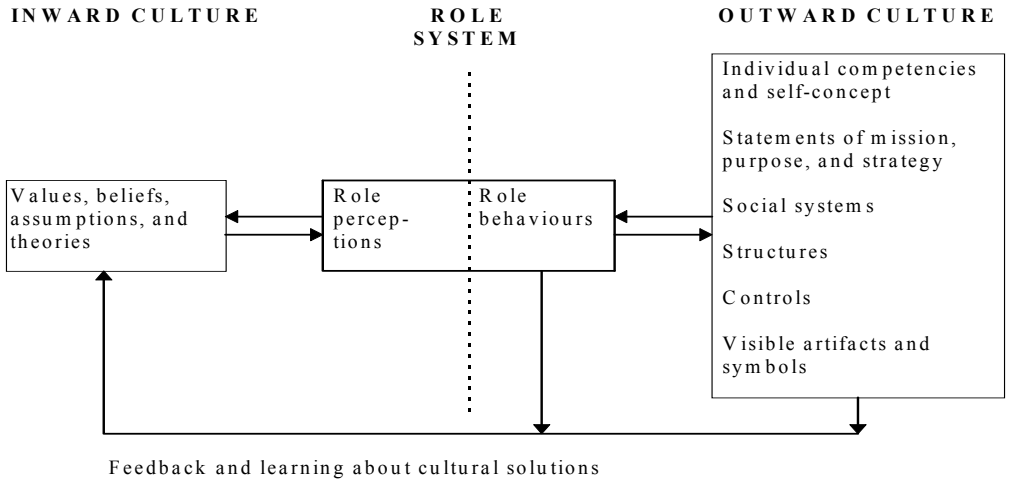
stage is the cumulative influence of all these leverage points being used simultaneously. This concept is linked to the contingency views of TQC (Psychogios and Priporas 2007) where TQC's implementation and its impact depend on the ability of organizations to adopt and apply its "soft" concepts and ideas such as continuous training and empowerment that are related to the humanistic side of the organization simultaneously with its "hard" concepts like process management and systems that are related to technical side of the organization (Wilkinson et al., 1994; Pike and Barnes, 1996; Ali et al., 2008). The third stage is ongoing analysis and discussion of cultural issues, not as the primary intervention for change, but taking place within the context of implementing change through the leverage points. Over time, the cumulative effect of these efforts will produce a new culture, which supports the TQC.

Figure 1: Leverage points for a total quality culture transformation



(Source: adapted from Bounds et al., 1994, p.491 in Sulaiman, 2002, p.183)

Figure 2: The relationship of roles and culture



(Source: Bounds et al., 1994, p.134)

The Obstacles/Reasons for not Implementing/Initiating TQC

Bolton (1995), Biehl (1999), Koch (2003), Wiklund et al. (2003), Takkar et al. (2006), Brookes and Becket (2007), Eagle and Brennan (2007), Ali et al. (2008) and Singh et al. (2008) identify some limitations that are related to difficulty in transferring TQM principles developed from industrial application to education services environments including:

- Lack of acceptance and application of TQC in education due to the lack of necessary knowledge about TQM, lack of sufficient funds or resources;
- Scientific control is less possible in education when compared to manufacturing because it is not easy to measure academic processes due to the involvement of numerous intangible factors;
- Definition of quality products/outputs are more relevant to administrative/non-academic service functions (tangible aspects) than quality of education/teaching, research and learning (intangible aspects);
- Student culture impacts upon perceived importance of different elements of education and thus on perceptions of quality;
- Lack of effective leadership due to bureaucratic and fragmented structures;
- Challenges regarding leadership skills and institution-wide strategic planning; and,
- Challenges regarding managerial skills and top level commitment in education

Thus, the challenge of applying TQC philosophies to education involves several critical steps such as clearer interpretation of quality, customers and their needs; clearer interpretation of institution's mission and its stakeholder's roles; and greater leadership support and teamwork. For example, Sahney et al. (2004a; 2004b) used system perspective to understand the definition of quality, customers and their needs. According to Sahney et al., the qualities of input are in the form of students, teachers/faculty, administrative staff, physical facilities and infrastructure. Furthermore, the qualities of processes are in the form of teaching, learning, research and service; and the qualities of output are in the form of the enlightened students that move out of the system. Unfortunately, in many countries the focus of assessment of quality management initiatives appears to be predominantly on the quality of input rather than the quality of process or quality of output (Koch, 2003; Brookes and Becket, 2007). The following sections will discuss the research questions and methodology.

RESEARCH METHODOLOGY

Reliability and Validity Analysis

Prior to being used for final data collection, the reliability and validity of the measures were tested to determine how consistent the selected variables measure the construct. The Cronbach's α value for all constructs far exceeded the recommended 0.60 which is considered as a threshold value indicating acceptable reliability (Hair et al., 1998). The reliability of the entire constructs measured by each statement on the scale of 1 to 5 was computed as shown in Table 1. Content validity was established through a review of questionnaire by faculty member's expert in *TQC.*

Table 1: Internal Consistency Results

Constructs	Number of Items	Alpha
Statements relate to CSFs for TQ-culture	20	0.917
Critical success Factors (CSFs)	11	0.904
TQM Benefits	10	0.911

Sample

The sample was based on the managers or administrators (person responsible for the performance of the organisation, TQM, accreditation, or some part of it) of educational institutions. Respondents were informed that the survey was entirely voluntary, and with a promise of anonymity and secured confidentiality. A pilot study was first conducted to assess the questionnaire. Following the pilot, changes were made to improve readability and thereby reduce the amount of time to answer the survey. Of the 100 questionnaires distributed to a random stratified sample of academics from 34 educational institutions, 54 were returned and some of

the responses were from the same educational institution. As a result, the number of valid questionnaires was 51 representing a response rate of above 40% which is comparable to similar studies (Klass *et al.*, 2002). Data was processed using SPSS (statistical package for the social sciences) for Windows 18.0. Descriptive Statistics were used to define the profile of the sample, to explore respondents' perception on their understanding on quality and TQC principles, and the obstacles and reasons for not implementing TQC/quality initiatives. Furthermore, Analysis of Variance (ANOVA) was used to explore respondents' perception and their opinion on the CSFs which influence TQC implementation. The following sections will discuss the survey finding and conclusions.

SURVEY FINDINGS

The Obstacles/Reasons for not Implementing/Initiating TQC

Table 2 shows the responses on a set of reasons for not implementing/initiating TQC according to level of institutions. "Lack of knowledge of TQM principles and its associated tools", "currently exploring potential of TQM", and "difficulty in changing people's behaviour and attitudes" were cited as the three most frequent obstacles in initiating TQC respectively by the total respondents. This finding confirmed our earlier assumption that most of the respondents are still in the infancy stage of TQC implementation or still getting accustomed to the idea of TQC. Secondly, it confirmed previous literature that categorized problems such as changing organisational culture, lack of knowledge of TQC principles and lack of top management commitment as the commonly cited reasons for difficulties experienced in starting/introducing TQC (Sulaiman 2002; Wilkinson et. al. 2001).

Table 2: Reasons for not implementing/initiating TQC according to level of institutions

Reasons for not implementing TQM	Level of institutions											
	Primary N=14 (27.5%)			Secondary N=15 (29.5%)			Tertiary N=22 (43%)			Total N=51 (100.0%)		
	Responses*	%Responses	Rank	Responses*	%Responses	Rank	Responses*	%Responses	Rank	Responses*	%Responses	Rank
Lack of knowledge of TQC principles and the associated tools	3	25	1	7	21.2	1	6	18.8	1	16	20.1	1
Still exploring potential of TQC	1	8.3	5	6	18.3	2	4	12.5	3	11	14.3	2
Difficulty in changing people's behaviour and attitude	2	16.7	2	4	12.1	3	5	15.6	2	11	14.3	3
Lack of agreement from all levels	2	16.7	2	3	9.1	5	4	12.5	3	9	11.7	4
Lack of need for TQC	0	0	8	3	9.1	5	4	12.5	3	7	9.3	5

Table 2: Reasons for not implementing/initiating TQC according to level of institutions												
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	Responses*	%Responses	Rank	Responses*	%Responses	Rank	Responses*	%Responses	Rank	Responses*	%Responses	Rank
Lack of time	2	16.7	2	4	12.1	3	1	3.1	9	7	9.3	6
Lack of top management commitment	1	8.3	5	1	3	9	4	12.5	3	6	7.8	7
Lack of resources	1	8.3	5	3	9.1	5	2	6.3	7	6	7.8	8
Difficulty in distinguishing between TQM/ISO9000/Accreditation	0	0	8	2	6	8	2	6.3	7	4	5.3	9
Total	12	100		33	100		32	100		77	100	
*Some respondents choose more than one answer or did not answer.												

Analysis of CSFs Influencing the Environment for TQ-Culture

Perceptions of quality management in their organisation

Table 3 on the following page shows total respondents' perception on twenty statements that relate to the eleven factors influencing the environment for TQC.

ANOVA ANALYSIS

The ANOVA analysis on the twenty statements indicated that there was no statistically significant difference of views (as shown in the column Sig. *p*) between the three different levels of institutions except for the use of team processes to increase morale. This shows that there is almost a consensus among the three levels of institutions on the level of quality management in their organisation. Furthermore, Table 4 shows the results of priorities that respondents from different levels of institutions gave to the eleven CSFs influencing the environment for TQC based on the overall mean ratings of statements for each CSF. It is expected that when TQC is more relevant to staff tasks and behaviour, an increased level of cultural changes and improvement of TQC implementation expected. The ANOVAs analysis on the CSFs indicated that there was no statistically significant difference of views (as shown in the column Sig.) between the three different levels of institutions except for "teamwork" and "communication for TQM". This shows that there is almost a consensus among the three levels of institutions on the eleven CSFs influencing the environment for TQC.

Table 3: Measurement variables descriptions/statements that relate to the eleven CSFs influencing the environment for TQ-culture

CSFs	Measurement variables descriptions/statements [a]	*Primary*	*Secondary*	*Tertiary*	*Total Res.*	*F V.*	*Sig.p*	S.D.
1) Necessary management behaviour	My supervisor is concerned more about the quality of my work than the quantity of my work.	3.79	3.53	3.41	3.55	0.378	0.687	1.254
	Management demonstrates leadership, commitment and involvement.	3.86	3.87	3.32	3.63	1.526	0.228	1.113
2) A strategy for TQM implementation	TQM is seen essential for customer satisfaction and profitability therefore management includes customer satisfaction scores as a key plan measure.	3.86	3.33	3.50	3.55	0.824	0.445	1.119
	Quality is seen to reduce cost and improve productivity.	3.62	3.29	3.55	3.49	0.301	0.741	1.175
3) Education, training & development	Everybody in the institution understands the total quality concept.	2.57	2.93	2.71	2.74	0.291	0.749	1.275
	I have received ongoing training to do my job right the first time.	3.29	3.07	3.09	3.14	0.179	0.836	1.077
4) Organization for TQM	I am provided with proper procedures to do my job right.	3.50	3.80	3.41	3.55	0.519	0.599	1.154
5) Process management and systems	We address problems through prevention and continuously improving all processes.	4.00	3.60	3.50	3.66	0.938	0.399	1.062
	I am able to meet the requirements of my external customers.	3.92	3.79	3.36	3.63	2.631	0.083	0.782
6) Employee involvement	Our commitment to quality is what sets us apart from our competitors.	3.69	3.67	3.25	3.50	0.932	0.401	1.072
	There is no friction between groups and departments.	2.77	2.67	2.71	2.71	0.38	0.962	0.957
7) Teamwork	Our use of team processes leads to increase morale.	4.21	4.00	3.18	3.70	6.446	0.003 [b]	1.015
	My supervisor can help me to do my job better.	4.14	3.93	3.41	3.76	2.844	0.068	0.992
8) Partnering	A partnership with suppliers supports the ability to improve processes.	3.64	3.53	3.32	3.47	0.371	0.692	1.138
9) Communication for TQM	My company is committed to TQM.	3.50	3.29	2.86	3.16	1.740	0.187	1.057
	There is a very strong trust between management and workers.	3.50	3.60	2.73	3.20	3.051	0.057	1.233
10) Recognition and reward	We are treated fairly and get recognition for what we do.	3.54	3.77	2.86	3.29	3.361	3.361	0.044
	I receive recognition for top quality job done.	4.00	3.80	3.32	3.65	2.377	0.104	.996
11) Quality Techno (tools and techniques)	We use problem solving techniques to get the real cause of problems.	3.31	3.47	3.18	3.30	0.251	0.779	1.182
	My decisions are based on analysis of data & information	3.86	4.00	3.45	3.72	1.747	0.185	0.927

[a] 1= Strongly disagree, 2=Disagree, 3=Natural, 4=Agree, 5=Strongly agree. [b] = Significant at $P < 0.01$

Table 4. ANOVAs and mean ranking for the eleven CSFs influencing the environment for TQ-culture							
	Level of institutions						
The eleven factors which influenced the environment for Total Quality culture	Primary N=14 Mean [a] (rank)	Secondary N=15 Mean [a] (rank)	Tertiary N=22 Mean [a] (rank)	Total N=51 Mean [a] (rank)	F-Stat.	Sig. *p*	SD
1) Necessary management behavior	3.82 (3)	3.70 (6)	3.36 (4)	3.58 (3)	0.945	0.396	1.04
2) A strategy for TQM implementation	3.75 (4)	3.36 (9)	3.52 (1)	3.53 (5)	0.523	0.596	1.00
3) Education, training and development	2.92 (11)	3.00 (11)	2.90 (10)	2.94 (11)	0.046	0.955	1.042
4) Organisation for TQM	3.50 (8)	3.80 (2)	3.40 (3)	3.55 (4)	0.519	0.599	1.15
5) Process management and systems	3.96 (2)	3.73 (3)	3.43 (2)	3.66 (2)	2.192	0.123	0.758
6) Employee involvement	3.23 (10)	3.16 (10)	3.04 (9)	3.13 (10)	0.207	0.814	0.850
7) Teamwork	4.17 (1)	4.00 (1)	3.29 (7)	3.74 (1)	7.123	0.002[b]	0.83
8) Partnering	3.64 (6)	3.53 (7)	3.31(5)	3.47 (7)	0.371	0.692	1.13
9) Communication for TQM	3.50 (8)	3.50 (8)	2.79 (11)	3.19 (9)	3.324	0.044 [c]	1.01
10) Recognition and reward	3.75 (4)	3.73 (3)	3.09 (8)	3.46 (8)	3.091	0.055	0.96
11) Quality technologies (tools and techniques)	3.64 (6)	3.73 (3)	3.31 (5)	3.52 (6)	1.508	0.232	0.77
[a]1= Strongly disagree, 2=Disagree, 3=Natural, 4=Agree, 5=Strongly agree; [b] = Significant at $P < 0.01$ and [c] = Significant at $P < 0.05$;							

Of the eleven CSFs in Table 4, teamwork had highest overall mean score of 3.74, and education and training had lowest overall mean score of 2.94 by the total respondents. Therefore, teamwork can be considered as one area that has shown promising development, whereas, lack of education and training is one area of quality management where improvements should definitely be made. In addition, it was also noticed that employee involvement (overall mean score 3.13) and communication for TQC (overall mean score 3.19) are other areas of quality management where improvements should be made. These help to explain why TQC benefits will be difficult without the cumulative influence of all the leverage points being used simultaneously. Although there is promising development towards increasing teamwork, the lack of knowledge of TQC principles and its associated tools is due, in part, to lack of educational training, involvement and effective communication.

When a cross-tabulation was constructed, classifying the respondents into their respective institutional level, it was further established that the total respondents from primary institutions considered "teamwork" as one area that has shown promising development although respondents within their institutions that have implemented/planned TQC did not feel considerable benefit from it as in findings from previous research. Conversely, the situation was the opposite for tertiary institutions. In addition, total respondents from tertiary institutions also perceived communication for TQC as the area that required the most improvement. Finally, all respondents had similar priorities for education, training and development, and employee involvement for areas that needed improvement. In fact, it is quite interesting to notice that the above areas which

require improvement are mentioned as one of the most important issues related to TQM initiative efforts in their organizations.

Findings from this paper have shown another promising development in terms of how educational institutions in GCC countries prepare themselves for TQ-culture transformation. According to Hofstede (1997), culture in any organisation as the "the beliefs which pervade the organisation about how business should be conducted, and how employees should be treated" In addition he added that a culture emerges in an organisation because of the need for solutions to business problems. Thus, this finding confirmed previous arguments that TQ-culture transformation and its full benefits will be difficult without the cumulative influence of all the leverage points being used simultaneously. Secondly, it confirmed Psychogios and Priporas' (2007) argument that managers tend to see TQM from its "hard" aspects and the actual awareness of its "soft" side is often superficial and people have a relatively poor understanding of it.

CONCLUSIONS AND IMPLICATIONS

The major contribution of the study is that it is one of the first attempts to investigate the impact of TQC implementation in the educational institutions of the GCC region. This type of analysis can help identify the developing attitudes of educators which can be an important finding as far as the future utilization of the TQC critical success factor is concerned. The study outcome implicated that managerial roles in implementation of TQC is necessary but TQC cultural acceptance will not happen without overall involvement of staff and teachers. Furthermore, cultural changes are unlikely to occur simply through a short term remedy in improving employee awareness. Even though initiatives have been undertaken to implement TQC in this part of the world, it takes times to see the effect of its implementation on improvement of an institution. In this respect, the lack of staff education, training, commitment, and motivation have negative effect on success of the TQC plan.

It is important to notice that suspicion and resistance are the most common reactions to TQC adoption, especially when many elements of the academic culture environment are not receptive to it. A key insight that has been identified from this research indicates that teamwork, increased quality of service, performance, and increased competitiveness can be considered as the strongest driving forces for TQC in GCC educational institutions. Furthermore, lack of knowledge of TQC principles and its associated tools, unexplored potential of TQM, and difficulty in changing people's behaviour and attitude in all levels of education are the most three frequent obstacles in initiating TQC. Therefore, the mentioned elements can be considered as the strongest restraining forces for TQC in GCC educational institutions. It is expected that when TQM is more relevant to staff tasks and behaviour, an increased level of cultural changes and improvement of TQC implementation expected. Thus, this finding confirmed previous

arguments that TQC transformation and its full benefits would be difficult without the cumulative influence of all the leverage points being used simultaneously.

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THE TEAM VS. THE INDIVIDUAL: LOGIN ACTIVITY AS A PREDICTOR OF WEB-BASED SIMULATION TEAM SUCCESS

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ABSTRACT

The investigation into the student group dynamic provides insight into pedagogical strategy of utilizing groups in the classroom. Student groups have been found to be more productive than the individual in their ability to introduce diversity in thought and understanding of material (Umble, Umble & Artz, 2008). Further, the use of simulations in the classroom have also proved positive: learning reinforcement (Dweck, 1986), exposure to real-world decision-making scenarios, increased decision-making speed, and extended information retention times (Bolt, 1993).

Empirical analysis examining student activity via the number of online simulation log-ins is used to examine the relationship between both the group's average number of log-ins as well as the individual log-in activity of overachieving group members and overall group success in the simulation. Thus, allowing us to assess the utility of the login variable as a predictor of team performance at the group and individual level.

Findings from a sample of 10 different simulations comprised of over 250 students across 54 groups (approximately 5 students per group) suggest that individual log-ins within teams may be better predictors of performance than group-based measures. Thus, based on this observation, the individual may have more impact on team success that the group as a whole. Pedagogical implications are provided to highlight the possible use of activity level (e.g., number of log-ins for computer simulations) as a predictor of overall group performance.

WEB-BASED COMPUTER SIMULATIONS

In an effort to enrich the classroom experience for students in higher education, competitions, namely computer simulations, have been used heavily (Cantor, 1995). Computer simulations have been used in various business disciplines: marketing, accounting (Polimeni, Burke and Benyaminy, 2009), organizational science (Hill, Bartol, Tesluk and Langa, 2009), political science and international relations (Meleshevich & Tamashiro, 2008). The use of computer simulations as learning tools has been main stream since the mid-late 1970's (Sprouls, 1962; Trieschmann, 1976) due to the ability of students to learn through practice as opposed to

the traditional hands-off approach. Online computer simulations are internet-based games which introduce a more realistic learning experience than pure theory or even case studies (DiMeglio, 2008).

Umble, Umble & Artz (2008) describe the benefits of team-based competitions as learning tools and their positive effects on student learning process, student motivation to learn, greater retention of knowledge, a more comprehensive and integrative understanding of course material, among other benefits. Positive outcomes from competition include learning reinforcement (Dweck, 1986), exposure to real-world decision-making scenarios, increased decision-making speed as well as longer information retention times (Bolt, 1993). Academic research has also recognized the ability for students to evaluate information, weigh alternatives and to make decisions in a virtual environment (Di Meglio, 2008).

This study examines the volume of group member logins as a predictor of team performance. Both group average logins and individual team member logins are examined as independent variables against to the dependent variable team performance. At the group unit of analysis, the sum of the logins for each member divided by the number of team members is used to determine the average number of logins for each team. At the individual unit of analysis, the number of logins for the "high login" member for each team is used as the independent variable. Regression analyses were used to assess relationships between these two variables and team performance.

CAPSIM©

The computer simulation used in this study will be CAPSIM©. CAPSIM© is a cross-functional team-based competitive computer simulation wherein students are tasked with managing a $100 million company over a simulated time period of up to 8 years (Saulnier, 2009). Over 500 business colleges and universities across the globe utilize the CAPSIM© Capstone Business Simulation (Saulnier, 2009). Within their simulated company, student groups are responsible for decision making in 4 interrelated functional areas: research and development, marketing, production and finance. The design of the simulation prohibits the use of outcome variables (e.g., profitability, ROI, ROA, etc.) as a unit of analysis for comparison between industries due to the uniqueness of each industry.

To allow for diversity among groups, group members were selected by placing different majors within each group. These majors included accounting, marketing, management, economics, and management information systems. Also, gender and race were assigned at random to the groups to allow for additional diversity. All teams were assigned with four, five, or six members.

Results of CAPSIM© consider the financial performance of each group with multiple dimensions of business decision-making: R & D, Marketing, Production, HR and Finance, relative to their competitors (CAPSIM, 2010). After approximately 3 weeks of stringent

training, the CAPSIM© competition simulation is typically spans a period of 7 weeks during a semester. The data used for this study included semesters with 7 and 8 week simulation competitions.

Group performance within the simulation is determined by a weighted relative score calculation which is generated automatically by the simulation. This weighted score is determined by the following variables and corresponding weights: Market Share 12%; Stock Price 12%; Market Capacity 16%; Return on Equity 12%; Return on Sales 12%; Return on Assets 12%; Asset Returns 12%. Based on the group performance at the completion of the simulation, simulation position rank within each simulation is determined.

Kilburn, Kilburn and Faught (2010) previously examined pre-competition student assessment scores, group size, and average group GPA to assess their predictability of final group rankings within the simulation. Findings from this study indicated that these group variables were not significant predictors of group performance.

PREDICTING GROUP OUTCOMES: THE GROUP VS. THE INDIVIDUAL

For decades research has attempted to address the following question: Who's more important to the success of the team: the individual or the group? Results have been mixed forming two schools of thought and ultimately it becomes a chicken or egg scenario. In some instances, the group has shown performance above and beyond that of the individual. Rue and Byars (2007) suggest that much of the time group performance is better than the average group member. However the term "much" leaves the door open for opposing viewpoints and analysis. Using a group to make decisions has several advantages and disadvantages. Two of the advantages of groups are: greater pool of knowledge and different perspectives. For these advantages to be effective there must be diversity in the group. Disadvantages include domination by one or more persons in the group and groupthink (Maier, 1967). In a study by Laughlin, Hatch, Silver, and Boh (2006), it was found that groups of three to five people perform better than individuals when attempting to solve complex problems.

T he following study addresses two hypotheses: one focusing on the level of group activity as a predictor of performance and the other focusing on individual group member with the highest level of activity as a predictor for performance. Through these combined analyses we were able to assess the significance, strength, and direction of performance predictability among these two variables, ultimately leading to an assessment of differences in the ability to predict performance between group and the individual.

Logins as a Predictor

For decades researchers have examined team activities in an effort to predict performance levels. Ancona and Caldwell (1992) examined relationships between external member activities

and group performance. Others have examined such activities as boundary spanning, information transfer, resource allocation, persuasive action, etc. (Aldrich and Herker, 1977; Allen, 1984; Dean, 1987; Katz and Tushman, 1979; Pfeffer, 1981).

Within a classroom computer simulation, member logins are the most attainable measure of activity at both the individual and group level. Utilizing logins provide us with a quantifiable means to assess both group and individual involvement in the CAPSIM simulation. This being stated, John C. Henderson (1988) demonstrated at an individual level that involvement as a predictor of performance. Logins are used here as the unit analysis for assessing performance predictability. The number of logins within a computer simulation is the primary variable that demonstrates activity in the simulation, frequency of exposure to components that cannot be acquired otherwise. Thus, teams with more logins should ultimately have a greater mastery of the subject. Ultimately this study examines login frequency as a predictor of group performance.

Group Average Logins

The first variable examine in this study is the average number of group logins per group. Here, we wanted to investigate the predictability of group performance based on the average number of logins per group within a given simulation. Due to slight variation in group sizes across a number of simulation industries average logins per group is used as the unit of analysis as opposed to the total number of logins per group. Thus, examining the average number of logins allows us to assess login frequency among groups of unequal sizes. This demonstrates the level of involvement of each team with the simulation and its components. Thus according to Henderson (1988), groups with more frequent exposure to the simulation should have higher performance.

H1 Higher average logins per group is a significant predictor of group simulation final rank.

The Overachieving Member

While much research has focused on group variables as predictors of group performance, Chulkov and Kim (2009) found that team results are not only related to higher performance on group tasks but also to higher individual scores on assessments. The concept of the individual team member contribution may be frequently overlooked and lumped in with team performance as a whole. As Ancona and Cladwell (1992) state, "group members interact with one another but they are also proactive" (p. 635). This statement alludes to the fact that one member can carry a team and in some situations, the power of one student alone is greater than that of the group. Balijepally et.al. (2009) found that performance aggregated to a level above weaker members to level of the strongest member. Thus, can the individual pull the performance of the group up?

Hypothesis 2 below addresses the relationship between group overall performance and the group member with the highest number of logins on each team. Therefore, groups with an overachieving member, or one who has an abnormally higher than average number of logins, should perform better than groups who have no overachieving member.

H2 Overachieving individual login volume will be a significant predictor of group simulation final rank.

RESEARCH METHOD

Data Collection

Data was collected from graduating College of Business seniors across spring, summer, and fall college semesters for years 2009-2010. The data used for this study included semesters with 7 and 8 week simulation competitions. Within most semesters multiple simulation were being conducted across numerous sections of the same course. Across this time period, 10 different competed CAPSIM© simulations were available for data collection. Within each simulation, there were 5- 6 groups competing against each another. These 10 simulations comprised of over 250 students yielded results for 54 student groups (approximately 5 students per group) which were ranked according to their final standing from 1-5 or 1-6 depending on the number of groups competing.

Login information and simulation position rank-order data were extracted from the CAPSIM© computer simulation. Login data was extracted from CAPSIM© for each individual and then averaged for each team. Groups were comprised of 4-6 members, thus, forcing the researchers to use "average logins per group" as the unit of analysis as opposed to the total number of logins per group. This allows us to assess login frequency among groups of unequal sizes. Within the data extraction, the member of each group with the most logins (overachiever) was highlighted and used as a second variable for analysis. Final simulation position rank was derived from simulation ending reports which provided the weighted relative score. This final relative score was determined by the following performance variables and corresponding weights: Market Share 12%; Stock Price 12%; Market Capacity 16%; Return on Equity 12%; Return on Sales 12%; Return on Assets 12%; Asset Returns 12%.

Results

Data was analyzed using SPSS Statistics 17.0. Hypotheses were assessed by running a correlation matrix. The data fails to support $H1_a$ (sig.=.296), indicating that the number of logins per group has no significant impact on actual group performance in the simulation.

Findings resulting from the analysis of hypothesis H2 suggest a significant, positive relationship between the highest number of individual logins per group and the final group simulation rank (Correlation=.428). Thus supporting $H2_a$ (sig. =.001). To further explore the impact of the highest logins per group on overall performance, linear regression was run. Results further explicate the significant relationship between the two variables (R^2=.185, F=11.65, t-value=3.414) indicating that overachieving group members have a significant impact on their group's performance. The R^2 indicates that approximately 18.5% of the variation in final group simulation rank can be explained by the highest number of logins per group.

Ultimately, this study provides mixed results concerning the use of logins as a predictor of team performance. While the group level unit of analysis is not found to be a significant predictor of group performance, the individual level unit of analysis is found to be a significant predictor of group performance.

DISCUSSION AND PEDAGOGICAL IMPLICATIONS

The investigation into the student group dynamic provides insight into pedagogical strategy of utilizing groups in the classroom. Student groups have been found to be more productive than the individual in their ability to introduce diversity in thought and understanding of material. Umble, Umble & Artz (2008) describe the benefits of team-based competitions as learning tools and their positive effects on student learning process, student motivation to learn, greater retention of knowledge, a more comprehensive and integrative understanding of course material, among other benefits. Further, the use of simulations in the classroom have also proved positive: learning reinforcement (Dweck, 1986), exposure to real-world decision-making scenarios, increased decision-making speed, and extended information retention times (Bolt, 1993). Students are also aided in a computer simulation's ability to make real-time decisions (Di Meglio, 2008).

Results from this study suggest that certain students provide competitive advantage for their group as they assume an extraordinarily high level of activity or interest. Cross analysis of the statistical results from H1 and H2 indicate that key individuals within teams may be better predictors of performance than group based measures. Thus, based on this observation the individual may have more impact on team success that the group as a whole

While this study provides mixed results concerning the use of logins as a predictor of team performance, there is still utility in the findings of the study. With the group level variable not being found to be a significant predictor of group performance and the individual level variable found to be a significant predictor of group performance, this suggests that in monitoring team performance instructors should pay close attention to key individuals in groups. Also, the findings of this study suggest that careful attention should be placed on individual ability when constructing teams. Instructors should attempt to distribute talent evenly across teams to create a more even playing field. Finally, in monitoring team performance throughout

the simulation instructors should pay close attention to the high member logins to determine when tutoring and coaching may be needed on teams without these key members.

Based on the findings of this study, it might be helpful for instructors to identify potential overachievers. While Kilburn, Kilburn, and Faught (2010) found that group average GPA's had no significant impact on group performance, further analysis might take into consideration the major and the GPA of the highest login person as a potential variable. Findings of this study indicate that it is certainly conceivable that 1-2 persons in a group could utilize their group role as leader to improve performance. Future research has an opportunity to further examine the impact of key individuals on group performance. Specifically, the assessment of leadership skills of overachieving group members might provide insight into the motivation of the excessive activity level in groups. In addition, future research could utilize other simulations in order to generalize the findings found herein.

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EVALUATION OF DISTANCE EDUCATION COMPONENTS: A CASE STUDY OF ASSOCIATE DEGREE PROGRAMS

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ABSTRACT

In 2008-2009 academic years, distance education classes were added to the associate degree programs in Istanbul Aydin University. The distance education components that were used included items such as, asynchronous education, synchronous education, exams, the Learning Management System-Web site and a remote live-support desk. At the end of the first academic year of operation, we conducted a survey to measure and analyze the effectiveness of components within the Programs, a survey that also compared the Programs to others to determine the results obtained. In this study, we analyzed the survey for individual Programs and compared the functional differences of both Programs. Analyses of the survey showed that even though it was the first time such a program had been implemented, the total effectiveness of the distance education components were considered to be above average. Moreover, there were no significant differences observed when considering the distance education components. In addition, we did not see a significant difference in the satisfaction levels for the two Programs.

INTRODUCTION

Researchers have argued that when there are physical distance between students and their teacher in terms of interpersonal and group communication, encountering some problems when teaching is unavoidable. It was a bid to solve some of the problems that distance education evolve. The history of distance education goes as far as early 1700s in the form of correspondence education, but technology-based distance education might have evolved from the introduction of audiovisual devices into the schools in the early 1900s (Jeffries 2009). When we searched the literature related to distance education, it was apparent that people who were interested in distance education used the best technology of their day such as correspondence, radio, published books, TV, videos, e-mail, and computers. All of these mediums have been used to convey educational content.

There are five distance education models that are associated with delivery technologies of educational contents (Taylor 2001; McKee 2010). These are; Correspondance Model, (1st generation). This model was based on printed materials. Multimedia Model (2nd generation) is based on printed materials, audiotape, videotape and interactive video. Telelearning Model (3rd

generation) is based on audio-teleconferencing, video-conferencing and broadcast radio/TV. Flexible Learning Model (4th generation) is based on online interactive multimedia, internet based access to WWW resources and computer mediated communication. Intelligent Flexible Learning Model (5th generation) is based on online interactive multimedia, internet based access to WWW resources, computer mediated communication, automated response systems and campus portal access to institutional processes and resources.

Alternatives to traditional higher education emerged in the U.S. in the 1960s and 1970s. Trends such as escalating college costs, renewed interest in non-traditional education by a more mobile population, and the success of Britain's Open University paved the way for numerous experiments in higher education (Matthews 1999). Distance education programs that exist today have a wide range of approaches (Diane 2011). Computer aided learning programs offer independent study courses through computer networking (Ashby 2002) and relies heavily on computer-based student contacts and feedbacks. History has shown that proponents of non-traditional education have tried to blend their approaches with traditional education approaches while striving to meet the challenge of constantly changing learning theories and evolving technologies **(**Jeffries 2009).

Today, there are some media applications that are available to facilitate the application of distance education. However, only a few of these media are acceptable as tools for distance education. They use information technologies, networking, and interactions between the teacher and the student. Also, for a true distance education application, there must be some restriction on the number of registered students and the application must be supported by some associated educational functions. The rest can be accepted as open education, on-line education, web-based education, or e-learning. For these reasons, distance education applications must be accredited by independent institutions. For example, in the U.S., the Distance Education and Training Council (DETC) approved accreditation for such programs, and the current number of accreditated educational institutions is 113 (DETC 2009). In Turkey, the Distance Education Commission of The Council of Higher Education of Turkey (YOK) accredited distance education applications. In Turkey, unless an educational institution is accredited, it cannot register students (YOK 2009).

Distance learning has become increasingly popular over the years. In the 2000-2001 academic period, more than three million students were enrolled in distance education courses in the U.S. and the National Center for Education Statistics (NCES) expects this number to increase 18.2 million by 2013. Authorities at NCES believe the biggest factor that will affect enrollment is the likelihood that increasing numbers of traditional college-age students, i.e., those who are 18-24 years old, will participate in online distance learning programs (Education Center Online (ECO 2009). Enrollment is expected to increase across all post-secondary levels with projected growths of 18%, 19%, and 27% for undergraduate students, graduate students, and first-professional students, respectively (ECO 2009).

In Turkey, the first Open Education faculty was established by Anadolu University, Eskisehir in 1982. There were 30,000 students enrolled during the first year. Today, the number of registered students in the Open Education Faculty is 1,041,180 (Anadolu University 2010). There are many programs with unlimited quotas at the Open Education Faculty such as Business Management, Public Management, Finance, and Economics Programs. Although most of them

are not exactly considered to be distance education, there are some distance education programs such as Information Management and English Teacher Programs with limited quotas.

Applications for enrollment in distance education programs are increasing in all countries. As technologies improve and with more institutions begin jumping on the distance learning bandwagon, the opportunities to take advantage of this exciting online phenomenon will certainly develop and increase further. In this paper, our goals are to provide guidance on the design and implementation of distance education programs and their components by demonstrating our applications to other institutions that are interested in initiating such programs.

DİSTANCE EDUCATİON APPLİCATİON İN ISTANBUL AYDİN UNİVERSİTY

Istanbul Aydin University's Anadolu Bil Vocational School began its educational activities in 2003. Today, there are 74 programs with courses at two different times each day, i.e., 1) daytime/regular courses and 2) night courses. Students choose their preferred time when they enroll and take classes. The Computer Technology and Programming Program (CTPP) and the Tourism–Hotel Management Program (THMP) initiated distance education course offerings during the 2008-2009 academic year in addition to their current on-site courses. The curriculum content of the distance education courses are the same as that of the daytime/regular and night courses and university's educational staff supports each curriculum.

The Istanbul Aydin University Distance Education Center (IAUEM) was established before the distance education program began operation. The first action of IAUEM was to research the types and success factors of distance education applications across the globe (Lockee et al. 2002; The Institute for Higher Education Policy 2000; Wagner 1995; Stella and Gnanam 2004; Isman et al. 2005; Holmberg 2005; McKee 2010). Later, a determination was made of which distance education system was the most effective, and the required hardware, software, and personnel to implement the chosen system were acquired. As a result, we decided to apply Flexible Learning Distance Education Model for our University. Flexible Learning Model is a digital transformation of distance education. Information and communication technologies (ICT) can be used heavily in this model. Research on distance education systems showed that in order to improve educational efficiency, there must be more than one distance education component and each component must support the others (Hatanaka et al. 2000). As a result of this argument by Hatanka et al Istanbul Aydin University's distance education applications have five educational and learning components with each supporting the other. These components are known as asynchronous education, synchronous education, exams, LMS-web pages, and a remote live-support desk. The main characteristic of the applied distance education system at IAUEM is the use of information technology to improve the learning effectiveness of students to save time and educational assets (Ekberg 2000).

After a year of distance education application, with a total of 38 different courses, each of the courses will have had 14 chapters prepared and implemented for students of the two Programs. Thus, within the past year, 532 pieces (38 x 14) of different course chapters for distance education have been prepared and transferred to the educational environment for both the asynchronous and synchronous components

Each week, for the asynchronous component, the educational staff prepares course-related educational information and determines the skills to be taught. The prepared educational material usually covers 35-45 minutes of PowerPoint slides. These are multi-media materials, such as text, images, graphics, audio, animation, and video on slides that are expected to improve the effectiveness of the educational staff in promoting the learning process. The entirety of these data was transferred to IAUEM for the production of multi-media materials; lastly, the educational staff prepared an audio file that simulates the original classroom. All produced educational materials are converted to a single flash file and published on the Internet. In total, approximately 421 hours of course content have been published to date. Students can repeat the learning process for the current and previous week's materials (chapters) without any constraint. So, students are free regarding what, when, and where to find the learning they desire and the opportunities connected with that learning. When we obtain statistical logs on access on asynchronous content for students, %80 percent of access was 8:00pm through 2:00 am. Also, %85 of the students was accessing the system from their home.

In the synchronous distance education component, a virtual classroom was established between the students and academic staff for each course offered on the Internet, according to the previously announced program. Students can see and hear the academic staff in this virtual classroom via live, streaming video. Also, the academic staff can hear the students' voices after voice permission is granted. The names of participating students in the virtual classes appear on a list. Any student who wishes to speak with any member of the educational staff simply clicks to remove the finger figure at her or his screen; the staff then allows that student to speak. In addition, students and academic staff are able to communicate via text chat. The purposes of the virtual class are to summarize the weekly chapters, solve problems, and discuss the material. So far, a total of 374 hours of virtual classroom content have been developed. All virtual classes are recorded and archived as an independent flash file. Thus, students who could not participate in actual virtual classrooms are able to monitor what is happening. The academic staff in the virtual classroom is also the owner of the asynchronous component, but in some courses, the academic staff can vary. The average attendance of students in the virtual classroom was %35. All of the students were accessing the virtual classroom from their home.

One of our distance education components is the exam. For each course, there is a mid-term exam, a final exam, and a make-up exam for those who failed the final exam. Examination results are announced to students within four days after the exam. We accept the exam as a component because prior to the real exam, a trial exam was provided online as a multiple-choice test. When a student selects the wrong option, the correct option is displayed along with an explanation.

Another of our distance education components is a Learning Management System (LMS) and related distance education web page. Our LMS software which is Moodle, is used in many distance education applications, and it is possible to make plug-ins for the application effectiveness. The weekly average of students' access to LMS and web pages in one academic year was 105 times. We accept the LMS and web pages as a component because they simulate the real school environment for distance education students.

Our last distance education component is a remote live-support desk. We applied this component to help solve students' hardware, software, and connection problems. The support

desk is open during daytime. When a student encounters a problem, the solution is expressed by verbal or written instruction via live, support-desk personnel. The average weekly usage of the support desk was 12 times. We accept the support desk as a component because students gain experience in asking questions, explaining their problems, and using information technology.

All the distance education components in Istanbul Aydin University are organized, supported, and monitored by IAUEM. Field experts are employed at IAUEM. IAUEM also has full responsibility for the courses, 14 weeks of course content, providing academic staff for the courses, asynchronous education, synchronous education, virtual classroom technical support, implementation of the exams, LMS and web-site design, and implementation of the support desk. We have an annual practice for distance education components that are described above for the CTPP and THMP Programs.

MATERIAL AND METHODS

Students were enrolled in distance education programs for the first time in the 2008-2009 academic year. Forty-three students enrolled in the CTPP program and twenty-two enrolled in the THMP program. After operating the distance education application for one year, a survey was conducted among students to determine and analyze the effectiveness of the distance education components they had used. Twenty-nine students responded to the survey for the CTPP program, and sixteen students responded for the THMP program. The assumption was that these responses were an accurate representation of the entire population of students in the two programs.

A survey was conducted (see Appendix-A) regarding the other distance education components that were used, including "Asynchronous education," "Synchronous education," "Exams," "LMS and web site," and "Remote live-support desk." These components were divided into five groups and within each group, four to eight questions were asked about the related component. Likert Scale is widely used by researchers for measuring attitudes, (e.g., opinions, preferences) (Göb et.al. 2007), so we used it to measure students' opinions in the survey. There were five equally-weighted scales for each question in the survey, showing the opinion of the student. When a student selects one of the scales, it means the user has answered the question selected (Chien 2007). In this study, students were rated between 1 and 5 according to their participation level in stating their opinions. The meanings of the 1 to 5 scales are: 1) "strongly disagree," 2) "disagree," 3) "neither agree nor disagree," 4) "agree," and 5) "strongly agree." However, some believe that since there are five alternative answers in the Likert Scale, it is open to manipulation. Some researchers have deleted the "neither agree nor disagree" choice because they believed that choice did not indicate an attitude (Clason and Dormody 2000).

RESULTS

The survey was handled for a general evaluation of overall distance education components on the program level and the results obtained are shown in Table 1.

Table 1: General Overview of Distance Education Components (Over 5)			
	CTPP	THMP	Overall Mean
Mean	3.8	3.9	3.9

As seen in Table 1, the general opinion of students in the distance education components of the two programs are close to the mean of the ratings. The mean value is 3.90, according to the Likert Scale, corresponding to the average value of 4 or "agree." If we look at the mean of the students' opinions of the distance education components, we can say that there was a general satisfaction with distance education.

Mean and standard deviations of satisfaction levels of students for distance education components for both Programs are shown in Table 2.

Table 2: Statistical Opinion Values of Distance Education Components (Over 5)						
Program	Statistics	Asynchronous Education	Synchronous Education	Exams	LMS and Web Site	Remote Live-Support Desk
CTPP	Mean	3.6	3.6	4.3	3.9	3.8
	Std. Dev.	0.7	0.9	0.9	0.9	0.7
THMP	Mean	3.7	3.8	4.2	4.2	3.6
	Std. Dev.	0.8	0.7	0.7	0.9	1.2

If we look at the satisfaction levels for asynchronous and synchronous educational components for CTPP students, there is a positive level toward the "agree" opinion (see Table 2). For the satisfaction levels of the exam, the expectations are met quite well. For the satisfaction level of LMS and website and remote live-support desk components, there is a highly positive level toward "agree". In summary, the satisfaction level for the exam is much higher than other distance education components for CTPP students.

Looking at the satisfaction levels for THMP students for the asynchronous and synchronous educational components, there is a positive level toward the "agree" opinion which is similar to the responses of CTPP students (see Table 2). According to the satisfaction level of the exam, LMS and website, the expectations are met. For the satisfaction level of the remote live-support desk components, there is a highly positive slant toward "agree". In summary, the satisfaction levels for the exam and the LMS and website are much higher than the scores for other distance education components for THMP students.

In standard deviations, there are very small values (see Table 2). Also, we can say the standard deviations are too low because the students generally assigned similar values to the questions. However, the standard deviation for remote live-support desk help for THMP students was 1.2, this was considered as very high. This indicates that the opinions of THMP students were not similar and ranged from the lowest value to the highest value.

According to Table 2, the values of the means of the satisfaction levels with distance education components for the two Programs were fairly close together, but there were small differences. We applied Independent Samples T-Test to see the difference of satisfaction levels

between CTPP and THMP students or simply, to test and analyze if there is a significant difference in terms of means between the two Programs. The Independent Samples T-Test is a method of estimating the difference between two population means. The technique that we used was straightforward extensions for estimation of a single population mean (Sincich 1996). Test results are shown in Table 3 as the output of Statistical Package for Social Sciences (SPSS).

Table 3: Independent Samples T-Test

	T-Test for Equality of Means		
	t	df	P value
Asynchronous Education	-0.596	43	0.555
Synchronous Education	-0.605	43	0.548
Exams	0.412	43	0.682
LMS and Web Site	-1.206	43	0.234
Remote Live-Support Desk	0.772	43	0.444

According to Table 3, while considering the significance levels that correspond to t values for all components, respectively, we can say there are no significant differences between the two mean of the satisfaction levels for the two Programs since all of the significance levels are larger than the confidence coefficient of 0.05.

The general satisfaction levels of distance education for both programs are very close to each other, at 3.9 over 5. Considering that this was the first application of distance learning at Istanbul Aydin University, the satisfaction level can be accepted as positive. Our goal is to improve the distance education components and apply the same survey at the end of forthcoming academic years to continue to see this positive trend of satisfaction levels.

The average satisfaction level of asynchronous distance education component was 3.7 out of 5.0. Although this is the lowest level of all distance education components, it is close to the overall average. The reason this component had the lowest satisfaction level may be due to some delays of weekly updates in a few courses. However, most of the weekly content for courses was updated on time. To improve the attractiveness of the learning environment, we embedded videos, audio, and animations in some courses. However, due to a lack of distance education culture and less experience in distance education, some educational staff used little, if any, multi-media content in their courses. When the distance education culture and experiences improve at the University, we expect heavy multi-media usage in the content, and we hope the satisfaction level of the asynchronous distance education component will be better as a result. Additionally, we are planning to conduct a special survey to get better feedback on the asynchronous component-based course.

We expected the highest levels of satisfaction on the synchronous distance education component because this component provides a virtual classroom opportunity to the students. With a virtual classroom, student and academic staff come face to face via the Internet. Survey results showed that the satisfaction level for this component was 3.7 out of 5.0, which is slightly below the overall average. There are two possible reasons for this result, i.e., 1, synchronous education was delayed for approximately two months because of some technical problems and 2, when we started synchronous education, implementation began at 6:00 P.M. However, the

majority of students were in traffic at that time and they could not enter the virtual classroom. In the second semester, a survey was sent to determine suitable days and hours for virtual classrooms, and we scheduled the virtual classroom based on the results of the survey. The lack of a distance education culture has been evident for this component, as well. Particularly, no standard has been established related to how a virtual classroom should function. Some academic staff gave lectures, some only accepted questions, and some only solved example problems. We are planning to train the academic staff for effective usage of the virtual classroom and give bonus grades to students who participate in the virtual classroom. Through these activities, we will improve the effectiveness of the virtual classroom and try to get a satisfaction level at least 4.5 out of 5.0 in future years.

The satisfaction level of the exam was 4.3 out of 5.0, the highest satisfaction level assigned to any of the distance education components. In addition, this component had the least problems, so we expected an even higher satisfaction level that the lack of a higher satisfaction level for this component is likely due to the psychological impact of the exam on students.

Satisfaction level of LMS and Web pages was 4.1 out of 5.0, second only to the satisfaction level assigned to the exam. As LMS, we used Moodle, a program that is commonly used in distance education. It seems that the satisfaction level should have been higher for this component. Also, our distance education web pages are very functional. We believe that not having a maximum satisfaction level for this component was due to the relatively static natures of the web pages.

The last distance education component provided by Istanbul Aydin University is the remote live-support desk. According to the results of the survey, this component had a satisfaction level of 3.7 out of 5.0, the lowest value assigned to any of the components. We believe this was based on psychological effects; particularly, some students may have expected turnkey solutions to their problems. When a student encountered a problem, a request for a solution was submitted to the remote live-support desk verbally or in writing. Students may have found the solution or the way the solution was obtained to be ineffective. Actually, this component must be treated in a serious manner in the future because fewer students responded to the request for satisfaction ratings for this component. With increased numbers of students in future years, this component will become more critical.

An Independence Samples T-test was conducted to explore significant differences of opinions of CTPP and THMP students on distance education components. The test results showed that there are no significant differences between the satisfaction levels of the two groups, as we anticipated.

CONCLUSIONS

The distance education applications of Istanbul Aydin University were initiated during the 2008-2009 academic year with full distance education components for two programs of the Anadolu Bil Vocational School. During the 2008-2009 academic year, 38 different courses were given with 14 weekly chapters prepared and implemented as distance-education-based content. The success of distance education applications are closely related to: 1) the technologies used; 2) the quality of the distance education components; 3) the suitability of the LMS; 4) the quality of

the content of the multi-media-based course; 5) the institutional culture; and 6) an effective feedback mechanism. When we consider a program from this perspective, it is possible to make the following conclusions after one year of offering distance education courses at Istanbul Aydin University.

We use high-technology educational materials - particularly Adobe products - in asynchronous and synchronous education; these are the applications commonly used throughout the world in distance education. The weekly course content is prepared by the academic staff in the form of PowerPoint presentations, along with some proposals. Later, proposed animations, graphics, videos, and other multi-media materials were added to the PowerPoint presentations. The final PowerPoint slides are sound recorded and Adobe Presenter which is used to convert the finished product to a single flash file. Thus, we obtained the content of asynchronous educational media and published it. For synchronous education applications, we are using Adobe Connect Meeting, and the servers we are using have the latest hardware features. There are currently no problems in accessing the course content or with the access speed.

Istanbul Aydin University researched the distance education components by assessing similar applications around the world; then, we determined some preferences, including the need for providing asynchronous education seven days per week and 24 hours/day; a weekly, programmed, one-hour session for synchronous education; and an LMS that is suitable for all programs and students. We used Moodle as LMS, an application that is still widely used in the world for distance education. However, we added some new components to Moodle that were required by our software team. In LMS, it is possible to incorporate some basic components, such as the ability to choose courses individually, the ability to see the weekly course content, forums, sending/receiving homework, on-line exams, announcements, chat, and obtain examination results. Exams are conducted as multiple-choice tests under the supervision of university staff on the university campus, since most of the enrolled students live in Istanbul. We established a remote live-support desk particularly for assisting the students with problems with their computers, software, and access. Remote live-support desk is available only during working hours.

For distance education applications, Istanbul Aydin University has established a distance education center operated by experts in the field. The asynchronous education components of the distance education courses have the same academic program that is offered in the day and night curriculum by the same program. In addition, the online program is prepared by the same academic staff who prepared the curriculum offered on the campus. The distance education application that we have described was the first such experience for our academic staff. There was no distance education culture at the University prior to this implementation, due mostly to the fact that distance education applications had never been offered by the University before. One of the components of the Distance Education Center of Istanbul Aydin University was the establishment and expansion of a distance education culture at the University.

We conducted a survey of CTPP and THMP students at the end of the first year and after their final exam to evaluate all the above-mentioned distance education components. The main purpose of that survey was to determine the effectiveness of the distance education application and to improve the learning activities it provided. We evaluated the survey results for the two Programs separately to determine the satisfaction results of distance education components on

the Program level. Then, we combined the results to determine differences between two programs.

Distance education with commonly used asynchronous and synchronous components increases the level of learning, especially with students whose learning speeds are different. When distance education is compared to formal education, research shows that learning has increased at least ten times in distance education (Maya 2008). General academic grade averages are presented in Table 4 for distance education and formal daytime/regular and night classes of CTPP and THMP students for the same academic year. According to Table 4, the achievement of students in Istanbul Aydin University in distance education programs is normal on the average; at least, students are not failing. Indeed, in CTPP distance education, students are achieving even better than daytime/regular and night class students in the same Program.

In this paper, we examined the distance education applications of Istanbul Aydin University at the end of the first year of such activities. We hope that the components that were used and the results that were obtained will provide guidance for educational institutions, especially new institutions that may wish to design and offer distance education studies.

Table 4: Overall Grade Averages of Three Different Classes of CTPP and THMP

Educational Classes	Number of Students	General Academic Success for All Students	
		Mean (Over 4.00)	Standard Deviation
THMP (Distance Education)	**22**	**2.09**	**0.79**
THMP (Night Classes)	104	2.14	0.86
THMP (Daytime/Regular Classes)	165	2.25	0.71
CTPP (Distance Education)	**43**	**2.14**	**0.70**
CTPP (Night Classes)	143	2.01	0.71
CTPP (Daytime/Regular Classes)	179	2.07	0.76

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Appendix A: Survey for Evaluation of Distance Educaiton Functions by Students							
		Please select your level of participation on the following opinions for published courses.	**Strongly disagree**	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly Agree**
ASYNCHRONOUS EDUCATION	**1**	There is an integrity on language and expression contents	1	2	3	4	5
	2	The course contents are actual.	1	2	3	4	5
	3	It is not hard to read, listen and understand the contents.	1	2	3	4	5
	4	Number of slides per lesson and chapter is enough	1	2	3	4	5
	5	Course contents cover the basic educational material	1	2	3	4	5
		Please select your level of participation on the following opinions for virtual class application.					
SYNCHRONOUS EDUCATION	**1**	It improves my success.	1	2	3	4	5
	2	I can learn more effectively by this application.	1	2	3	4	5
	3	The application is interesting in the learning process.	1	2	3	4	5
	4	The total virtual class duration is suitable.	1	2	3	4	5
	5	The number of virtual classes are enough	1	2	3	4	5
	6	Academic staffs use the virtual class duration effectively	1	2	3	4	5
	7	The attitude of academic staff is positive in virtual class.	1	2	3	4	5
	8	Hours of virtual class are suitable	1	2	3	4	5
		Please select your level of participation on the following opinions for exams.					
EXAMS	**1**	The exam durations are suitable.	1	2	3	4	5
	2	The number of questions are suitable per courses.	1	2	3	4	5
	3	The exam building is accessible.	1	2	3	4	5
	4	The exam results have been announced in scheduled time.	1	2	3	4	5
	5	The exam questions are definitely clear.	1	2	3	4	5
	6	The exam staff perform within regulations.	1	2	3	4	5
		Please select your level of participation on the following opinions for LMS and Web Pages of Distance Education Center (DEC)					
LMS and WEB SITE	**1**	It is easy to navigate between the web pages.	1	2	3	4	5
	2	I can get fast response by e-mail.	1	2	3	4	5
	3	I can easily access the data I need.	1	2	3	4	5
	4	Web pages are easily accessible.	1	2	3	4	5
	5	The content of web pages requires my demands	1	2	3	4	5
		Please select your level of participation on the following opinions for remote live-supports of DEC					
REMOTE LIVE-SUPPORT DESK	**1**	The DEC personnel always serve well.	1	2	3	4	5
	2	The DEC personnel are experts.	1	2	3	4	5
	3	There are no problems in accessing to DEC	1	2	3	4	5
	4	The service of DEC is adequate.	1	2	3	4	5

EXTENDING THE FORER TEST BEYOND FACE VALIDITY: AN EXPERIENTIAL APPROACH TO TEACHING SOCIAL SCIENCE METHODOLOGY

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ABSTRACT

Students studying social science methodology have difficulty understanding the concept of validity beyond the face validity. Several generations of psychology students have taken the 'Forer Test' and learned not to rely on face validity. In the 'Forer Test' every participant gets the same personality profile after taking a personality test. Under the impression that it is a personalized profile, most participants consider the 'results' to be fairly accurate. In this exercise, the Forer Test is used as a catalyst for examining additional validity concepts. We use social science analytical methods on the data collected from the 'personality test' to see if indeed they reveal patterns that indicate latent constructs. In this paper we describe the basic exercise, and illustrate how it was successfully used in undergraduate and graduate management and marketing courses.

INTRODUCTION

Many psychology students are familiar with the 'Forer Test'. In the test, a personality evaluation is administered and every participant gets the same personality profile as a result (Forer, 1949; Carroll, 2005). Most participants consider the profile to be fairly accurate, thinking it is a personalized profile based on the test. This face validity is due to the generally positive nature of the profile (Leung, Su & Morris, 2001), the accepted authority of the evaluator and the belief that the analysis was unique to them (Hannay, Arisholm, Engvik & Sjøberg, 2010; Dickson & Kelly, 1985). The test is used to show the problems with relying only on face validity to judge a measurement instrument or evaluation. In this exercise we go beyond the traditional 'Forer Test' lesson. We administer the 'personality test' online, and analyze the actual results from test using legitimate, established social science methods to see if indeed the test does reveal patterns that indicate latent constructs. In this way, an interesting but limited demonstration of a psychological phenomenon is used as a starting point for illustrating more sophisticated concepts. In addition to describing the basic exercise, we illustrate how it can be used in different but related behavioral disciplines within business education. Specifically we

describe the basic exercise, and illustrate how it was successfully used in undergraduate and graduate management and marketing courses.

The paper begins with a description of the Forer test, its history and application. This is followed by a brief explanation of experiential exercises in general. A description of our exercise is presented next. After the basic exercise is presented, a specific implementation of the exercise will be examined in detail. The materials and procedures will be presented first, followed by the analysis methods and results. The presentation of the results in class and the ensuing discussion are explored next. The paper concludes with proposals of how to modify the exercise for different contexts.

BACKGROUND - THE FORER TEST

In 1949 Bertram R. Forer introduced "the fallacy of personal validation". Specifically he found that people had a tendency to accept vague, general descriptions of personality as very true for them even though the descriptions could apply to almost everyone. The personality evaluation given by Forer was as follows:

"You have a need for other people to like and admire you, and yet you tend to be critical of yourself. While you have some personality weaknesses you are generally able to compensate for them. You have considerable unused capacity that you have not turned to your advantage. Disciplined and self-controlled on the outside, you tend to be worrisome and insecure on the inside. At times you have serious doubts as to whether you have made the right decision or done the right thing. You prefer a certain amount of change and variety and become dissatisfied when hemmed in by restrictions and limitations. You also pride yourself as an independent thinker; and do not accept others' statements without satisfactory proof. But you have found it unwise to be too frank in revealing yourself to others. At times you are extroverted, affable, and sociable, while at other times you are introverted, wary, and reserved. Some of your aspirations tend to be rather unrealistic" (Forer, 1949).

Participants in Forer's test, performed in 1948, rated this passage as 4.26 on a scale of 0 to 5 with 4 indicating it was a 'good' assessment and 5 as 'excellent' (Forer, 1949; Hannay, Arisholm, Engvik & Sjøberg, 2010). The test has been repeated hundreds of times in the succeeding decades with the average remaining about 4.2 (Carroll, 2005).

This phenomenon of individuals tendency to accept 'bogus' feedback as accurate is also known as the 'Barnum Effect' (Meehl, 1956; MacDonald & Standing, 2002). The Barnum effect was initially used in classrooms to illustrate gullibility and deception; however it later was used to teach ethics (Beins, 1993). Those teaching ethics use the Barnum Effect to aid in discussions of the ethics of deception, the ethics of deception in research, the feelings of those who have been lied to (Beins, 1993). Recently Boyce & Geller (2002) found no studies that used the Barnum effect to 'promote a healthy skepticism of pseudoscience' or to teach research methods,

therefore they used it to teach psychology research methods, ways of displaying and interpreting data, and to "highlight the pitfalls of pseudoscience" (Boyce & Geller, 2002).

Those who have conducted research into the phenomenon while using it class found that under certain circumstances people accept feedback rationally and not gullibly (Michels & Layne, 1980). For example, when presented with each, participants show the ability to discriminate between accurate, trivial and inaccurate feedback (Wyman & Vyse, 2008; Harris & Greene, 1984). Another interesting finding is that the Barnum effect is more prevalent in positive statements and evaluations than in negative leading researchers to conclude that the Barnum effect is somewhat cancelled by a self-serving bias (Leung, Su & Morris, 2001; MacDonald & Standing, 2002).

THE EXPANDED FORER TEST EXERCISE

In this exercise we follow the lead of others who see the potential use of the Forer Test for teaching research methods (Boyce & Geller, 2002). We go further than using the Forer test to illustrate and start conversations about gullibility, ethics of deception and test validity. Furthermore, we use the same exercise to show how proper investigations can be done. The exercise was run in several classes in undergraduate and graduate organizational behavior, marketing and management courses. The exercise can easily be adapted for other situations.

Table 1: Items on the 'Personality Test'

Anchor 1	Anchor 2
Red	Blue
Cats	Dogs
Cotton	Satin
Meat	Vegetables
Night	Day
City	Country
Travel	Staying Home
Activity	Relaxation
Sun	Clouds
News	Sports
Radio	TV
Science	Art
Rock	Classical
Solid	Stripes
Drama	Comedy

Exercise materials and procedure

Students were asked to complete a survey administered online in a course management shell. The survey consisted of what appeared to be a simple personality test. The items are shown in Table 1. They were asked to indicate which they preferred (or indicate 'no preference) for each of 15 sets of items. After being asked two demographic questions (age, gender), students were next shown a 'personality evaluation', presumably based on the answers given. They were then asked how accurate the description was from '1-very poor' to '5-excellent'.

Later in the week, in class, the 'truth' was revealed and the Forer effect was discussed. The instructors had already done a correlation and factor analysis on the items, and used these results to illustrate basic concepts of validity and latent constructs.

Table 2: Correlation Results

Given these pairs:		This:	is positively related to these:
Activity	Relaxation	Activity	Cotton, Travel, Sun, Comedy
Sun	Clouds	Sun	Rock, Activity, Day
Travel	Stay Home	Travel	Day, Dog, Activity
Rock	Classical	Rock	Meat, Sun
Comedy	Drama	Comedy	Activity, Sports
Science	Art	Science	Art
Dogs	Cats	Dogs	Travel
Meat	Vegetables	Meat	Rock
Cotton	Satin	Cotton	Activity
Sports	News	Sports	Comedy
Day	Night	Day	Sun

Analysis of results

The data from all of the participating classes were combined and some simple analysis was conducted. The means and standard deviations of the variables were computed as well as statistics for kurtosis and skewness. Next significant correlations of the remaining items were identified. Table 2 shows the items that were correlated at .01 or better. An exploratory factor analysis was conducted to find interrelated patterns of relationships and identify latent constructs. Six groups were identified by the factor analysis (principle component, varimax rotation), of which only two had more than two items. Those two factors (Table 3) had alpha reliabilities that were <.5, which is unacceptable.

Discussion

The procedure was explained to the classes. Students were asked to propose relationships between the items. The relationships were revealed and discussed with an emphasis on

comparing proposed relationships with the actual relationships found. Next the two revealed patterns were presented. The discussion about the groupings centered on explanations of the groups and uses of this information. Next the marketing students were asked to identify ways that this information can be used to design products and marketing campaigns. The management students were asked how this information can be of value to managers. Both groups were asked to design a follow-up study related to their proposed uses of the information.

Table 3: Factor Analysis Results	
Group 1	
Sun	Clouds
Science	Art
Day	Night
Rock	Classical
Group 2	
News	Sports
Drama	Comedy
Vegetables	Meat

DISCUSSION AND CONCLUSIONS

The Forer test (Forer, 1949), or Barnum effect (Meehl, 1956) is often used to illustrate gullibility and ethics (Beins, 1993). Rarely is it used to explore research methods (Boyce & Geller, 2002). In this paper is description of how the Forer/Barnum phenomenon was presented in management and marketing course and used to introduce legitimate research methods.

Although the exercise was a success, we have identified several areas for improvement. First, the 'personality survey' can include a greater number of items and the items themselves can be more carefully chosen. The test given was designed to be nonsense; however that is not necessary at all and may have actually limited our analysis. The items themselves might be chosen to reflect specific concerns of disciplinary courses, such as consumer product or marketing related issues, or work related concepts to allow the final results to be applied to product design, marketing campaigns or staffing, job design, training and motivation. Traditional 'personality' items could be used if the exercise was to be used across classes in different disciplines and at different levels. A problem with the original items was a great degree of kurtosis and skewness. Scale items with greater variation would lead to a better analysis and still allow for discussion of skewness and kurtosis. Carefully chosen items would also allow for factor analysis to develop valid reliable factors. Factor analysis would be especially appropriate in a graduate level class. After the data is entered into a spreadsheet, the analysis can be done by students as an assignment, either with specific directions or leaving the students to find their own ways to use it. Discussions of validity at the graduate level are particularly important

(Mundfrom, Young, Shaw, Thomas, & Moore, 2003) and better analysis results would facilitate such a discussion.

Once an instrument is developed future exercises can also be used for research purposes. It would be relatively easy to design experiments that extend the existing research. Graduate students and faculty could explore the dynamics of the Forer/Barnum effect on discipline specific tests (consumer related, job related, etc.) to see under what conditions people are rational or gullible (Michels & Layne, 1980), have the ability to discriminate between accurate, trivial and inaccurate feedback (Wyman & Vyse, 2008; Harris & Greene, 1984) and have the effect mediated by a self-serving bias (Leung, Su & Morris, 1980; MacDonald & Standing, 2002).

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A LABOR NEGOTIATION CASE USEFUL IN AN INTRODUCTORY BUSINESS COURSE

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ABSTRACT

Effective labor management is critical to the success of an entity. Business students need basic knowledge and skills concerning the creation of a labor agreement. This paper discusses the labor negotiation process as well as a labor negotiation case used in the introductory siness course at a U.S. university. The case involves student representatives of management and labor negotiating an agreement on wages, vacation time, the retirement plan, life insurance, and job security. The paper provides a thorough discussion of the labor negotiation case, an explanation of how the instructor involves the students in the case, statistical measures of the student learning and skill development from using the case, and teaching suggestions for instructors.

Management is required by law to negotiate certain mandatory bargaining issues. The case discussed in this paper includes five of the most important mandatory bargaining issues: wages, paid vacations, the pension plan, group life insurance, and job security/layoffs. The case presents a realistic labor-negotiating situation and requires students to be actively involved in creating a new labor agreement. As such, the case provides an effective tool to meet the primary teaching objectives of providing students with a thorough understanding of the challenges involved in creating a new labor contract, to help students effectively understand the perspectives of both employees and of management in the labor negotiating process, and to assist students in developing vital critical thinking, communication, and negotiating skills.
Statistical tests reveal that using the case significantly increases students' understanding of labor negotiation issues and concepts and provides students with significantly improved critical thinking skills and analytical skills.

It is suggested that the instructor encourage the students to be creative in negotiating the bargaining issues in order to stimulate their analytical and innovative thinking processes. The overall objective of each of these issues is to require students to provide fairly in-depth analysis and input to resolve each of them; that students will learn that reaching an agreement on wages, vacations, the retirement plan, life insurance, and job security/layoffs requires considerable effort and skill. Thus, the complexities involved in these issues are designed to result in significant improvement in students' analytical and negotiating abilities.

INTRODUCTION

A positive relationship between management and employees is vital to every company's success. Companies seek to hire and retain competent, knowledgeable, productive workers at a reasonable cost while individuals desire pleasant working conditions, high salaries, and generous fringe benefit packages. Entities must efficiently and effectively manage its human resources to achieve its objectives. An important aspect of human resources management that business students should be familiar with is the negotiation process between labor and management to reach agreement on key terms such as wages, retirement plans, and other fringe benefits. This paper discusses the important elements of the labor negotiation process, provides examples of contract proposals made by actual companies, provides a review of relevant literature, and presents and discusses the use of a labor negotiation case designed for an introductory business course. The case involves student representatives of management and labor seeking to reach an acceptable agreement on job security, the retirement plan, life insurance, wages, and vacation time. In addition, the paper provides a statistical analysis of the extent to which the case both increases students' understanding of labor negotiation concepts and issues, as well as measuring the improvement in students' critical thinking and analytical skills, communication skills, and negotiating skills.

The process of negotiating a new labor agreement is commonly referred to as collective bargaining. Business students need a basic understanding of the collective bargaining process due to the overall economic effects it can create. In addition to specific companies and individual unions, collective bargaining agreements and labor/management relations have an impact on the general economy. Strikes and lockouts due to labor/management disagreements affect not only the company and its employees, but also customers and suppliers. In the overall economy, labor agreements can affect wage levels, prices of products and services, and unemployment levels (Leap and Crino, 1993, p. 575).

Employees may be represented by a labor union that negotiates a collective bargaining agreement with company management. Compared to non-unionized firms, companies whose employees are unionized often experience benefits in the form of higher employee morale, increased productivity, and improved relationships between management and labor (Leap and Crino, 1993, p. 613). A collective bargaining agreement, or labor agreement, is a written contract between management and labor detailing specific employment terms such as employee compensation, employee fringe benefits, training, performance assessment, termination and disciplinary procedures, and safety issues.

Employees who are not unionized must bargain individually with management to reach agreement on salary, fringe benefits, and similar employment details. Individual employees do possess considerable bargaining power when the demand for their particular skills and knowledge are high relative to the available supply of similarly qualified people in the labor market. Another consideration is how strongly management desires workers to remain non-

unionized. The more that management prefers to not have a union representing workers and thus desires to not potentially give up some bargaining power to workers, the more concessions they are likely to provide to individual employees during labor negotiations.

The negotiation of a new labor agreement between workers and management may occur every few years or even more often for many companies. A new labor agreement may be necessary either because most collective bargaining agreements are in effect for three years and the present agreement will soon expire, or because management may consider modifying labor provisions currently in effect (Leap, 1995, p. 241). In certain situations, labor may go on strike unless a new agreement is offered that satisfactorily meets their demands. Employee representatives and management must each possess significant negotiating abilities to create a labor agreement acceptable to both parties. Negotiating skills are vitally important whether employees are unionized or not, and whether or not an employee strike occurs.

Actual labor management situations of real entities reveal the importance of providing business students a solid understanding of the labor negotiation process. In 1999, the United Auto Workers union was negotiating with General Motors and DaimlerChrysler regarding increases in wages. General Motors proposed a three-year contract with a 2% increase plus a $500 lump sum in year one, a 3% raise in year two, and a $1,500 lump sum increase in the third year. General Motors also offered increased job security for workers with at least ten years seniority. DaimlerChrysler proposed similar terms, with industry analysts expecting the union to gain annual wage increases of 3% for at least three years (Muller, 1999). In April 2001, writers and actors in Hollywood threatened a strike if they were not rewarded with higher wages. Such a strike would cost companies in and around Hollywood almost $2 billion per month in lost revenue (Cagle, 2001). Major league baseball players did strike in the 1994 season, which created significant financial consequences and canceled the World Series that year.

The players earned $250 million less in salaries. Baseball owners may have lost as much as $500 million. Spillover losses from the strike, according to a survey of mayors of the 24 cities that host the 26 major league teams, were an average of $1.16 million for each city per missed game. In 1994, there were 669 baseball games cancelled due to the strike (Impoco, 1995). Each of these examples illustrates the need for students to understand the labor negotiation process.

This labor negotiation case discussed in this paper is used in an introductory business course. The primary objectives of the case are to provide students an understanding of the challenges involved in creating a new labor contract, to help students understand the perspectives of both employees and of management in the labor negotiating process, and to assist students in developing vital negotiating skills, communication skills, and analytical/critical thinking abilities.

The following sections of this paper provide a review of the labor negotiation literature, a thorough discussion of the labor negotiation case, how the instructor can effectively involve the students in the case, a statistical evaluation of the benefits to students' understanding and skill

development from using the case, teaching suggestions for instructors, and a summary of the paper.

REVIEW OF RELEVANT LITERATURE

Prior literature has covered various aspects of labor issues that are relevant to the labor negotiation issues presented in this paper. Kahn (1979) discusses the transformation of the San Francisco longshoremen labor market from a rather haphazard and low-paying non-unionized process to a much improved environment for both the employer and the employees when a labor union was established. Kahn summarizes the benefits obtained by the longshoremen as consisting of improved job security, significantly higher wages, an industry safety code, limits on employee work loads, and a grievance procedure with union input.

Dworkin et al. (1988) mailed a survey under union auspices to the home addresses of members of a large local chapter of the United Steelworkers Union prior to the 1983 round of labor contract negotiations. The survey asked the union member to rank the importance of 23 common collective bargaining items in regard to the upcoming negotiations between the United Steelworkers Union and the major companies with which it bargained: U.S. Steel (now USX), National

Steel, Inland Steel, Armco Steel, Bethlehem Steel, J & L Steel, and Republic Steel (the latter two merged afterwards to create LTV Steel). Management was not allowed access to the survey results. The 1,661 survey respondents ranked job security the most important issue, followed in order by pension benefits, health and life insurance coverage, and wages. Union members rated vacation time as the eighth most important labor negotiation issue. The survey also asked union members whether they would be willing to strike to avoid making concessions during labor negotiations, and 37% of respondents answered affirmatively.

Lucas and Furdek (2009) examined the most significant provisions of the 2007 labor agreements between the United Autoworkers (UAW) union and each of the big three U.S. automobile manufacturers: General Motors (GM), Chrysler, and Ford. Two major goals for the UAW were job security created by the automakers keeping plants open and the addition of a new health care trust fund, while the automakers desired lower wages for some workers and an abolishment of company-provided retiree health care benefits. Lucas and Furdek (2009) state that the UAW was fully aware that in order to obtain General Motors' investment commitments to keep plants operating that the UAW would have to make major concessions. Negotiations between GM and the UAW began on July 23, 2007 and agreement was reached regarding the creation of a health-care trust. However, opposing positions on wages resulted in a strike by GM workers that began on September 24, 2007 and ended two days later when a tentative agreement was reached. Major provisions of the September 24 agreement were the shifting of $51 billion of health-care obligations for GM retirees from GM to a union-operated trust fund, and that GM would provide job security to union workers by agreeing to build current and future products at

16 of its 18 plants and close only two plants. Additionally, GM would provide no pay raises over the next four years, but instead a $3,000 signing bonus in 2007 to every UAW member for the ratification of the contract as well as lump sum payments of 3%, 4%, and 3% in the final three years of the contract. Agreement was also reached to create a two-tier structure to provide a lower wage of $12 to $15 per hour for newly hired workers for jobs that did not directly link to vehicle manufacturing, such as sanitation workers. However, the new non-production workers would be provided a 401(k) defined contribution plan. The UAW membership ratified the labor agreement with GM on October 12, 2007.

Soon after the GM labor agreement was completed, the UAW also reached similar agreements with both Chrysler and Ford. The UAW and Chrysler agreed to transfer all retiree health-care obligations to a union-operated trust fund, and to create a lower-tier wage for newly hired workers in noncore jobs. In return, Chrysler agreed to provide job security by committing to continue to operate at least fifty of its fifty-nine manufacturing facilities over the term of the labor contract. Job security was a major issue for the UAB in negotiating with Ford and obtained Ford's agreement to continue operating all of its assembly plants in the United States during the entire four-year term of the labor contract. Ford also committed to build five new flexible body shops in unionized assembly plants, invest $200 million in new technology and equipment in unionized stamping plants, and make a $20 million tool-and-die investment in Dearborn, Michigan. Since Ford was in weaker financial condition that either GM or Chrysler, Ford management's primary goal was to reduce its payroll costs. In exchange for Ford's job security commitments, the UAW and Ford agreed that all new hires, including assembly-line workers, would be paid a lower starting wage of $12 to $16 an hour. This wage condition differed from the GM and Chrysler contracts, which provided a lower wage only to noncore jobs. Similar to the GM and Chrysler labor agreements, a retiree health trust fund was established that reduced Ford's liability for retiree health care costs (Lucas and Furdek, 2009).

If a labor agreement is not reached, it is possible that workers will strike or that management will decide to temporarily cease operations and "lockout" employees. Gramm (1987) studied a sample of 6,046 labor negotiations that occurred from 1971 to 1980 and involved bargaining units of at least 1,000 workers and determined that 13.25% of the cases experienced an employee strike. Chaison (2007) explains that if the employees do strike, management can permanently replace the strikers or outsource their jobs, as Northwest Airlines did in response to the 2005 strike by mechanics and cleaners. Avoiding a strike may require substantial concessions by labor, such as the 14% and 24% pay cuts accepted by pilots at Delta Airlines and Northwest Airlines, respectively, in 2005 (Chaison, 2007). In the Bureau of National Affairs' sample of 3,953 collective bargaining agreements for all industries from 2001 to 2005, there were 425 agreements (10.8%) that included wage reductions or freezes (Chaison, 2007).

The National Basketball Association (NBA) and the National Basketball Players Association (NBPA) created the first comprehensive collective bargaining agreement in sports in

1967. In 1983, the NBA and the NBPA negotiated an innovative contract that included the inaugural sports salary cap, a revenue guarantee of 53 percent for the players, and a pioneering drug control program (Staudohar, 1999). By the 1997-1998 season, the players were garnering 57% of the NBA's revenues and the league claimed that almost half of its 29 teams were losing money. Player's salaries had also increased 50% over the previous five years, and in June 1998 the team owners attempted to negotiate with the NBPA to create a firm and reduced salary cap. The players, however, refused to accept a firm salary cap and the NBA began a lockout of the players on July 1, 1999, which placed the season on hold. A new labor agreement was not reached until early February 1999, and the season began at that point with 50 of the normal 82 games left to be played. The lockout caused NBA team owners to lose about $1 billion in revenue, while the players earned about $500 million less in salaries (Staudohar, 1999).

THE LABOR NEGOTIATION CASE

The particular case presented in this paper is used in an introductory business course that provides students an overview of management, accounting, finance, marketing, and economics. The course is a prerequisite for all other business courses and is typically taken by freshmen. Topics covered in the course in the approximate seven in-class hours immediately prior to using the case are the management process, teamwork and building a successful organization, human resources management and motivation, and union/management relations. Groups are used in the course from the first day of class and the labor negotiation case builds on the teamwork concept that has been emphasized throughout the course.

To motivate students to be prepared, in the class period immediately prior to the date the case will be given, the students are told that they will take a quiz on labor/management relations at the start of the next class period. At the start of the following class, the instructor announces that a labor negotiation case will be substituted for the quiz and the related points. The students are then informed of the details of the labor negotiation case that they will work on for the rest of the class period. Thus the day that the case is used in class is the first time that the students are told that they will work on a labor negotiating case. Since the students are not told at any prior time about the labor negotiation case, informing the students to be prepared for a quiz increases the benefits the students will obtain from the case as they are thinking about the relationship between labor and management when they arrive for class that day.

Many issues are specified by law that management is required to negotiate with the union. If management refuses to negotiate any of these "mandatory bargaining issues", they are open to charges of unfair labor practices. Exhibit 1 and Exhibit 2 provide the case information given to students and include five of the most important mandatory bargaining issues: wages, paid vacations, the pension plan, group life insurance, and job security/layoffs. Mondy et al. (1999, p. 550) provide a list of all mandatory bargaining issues that includes the five items above as well as fifty-seven additional items. The case is limited to five of the most important

bargaining issues so that students can adequately negotiate each issue in class in a reasonable time.

Important realities surrounding the negotiation of a labor agreement are that it is vital that union and management representatives seek to create and maintain clear and open communication, and that there is no guarantee that a mutually acceptable result will occur (Mondy et al. 1999, p. 557). Successfully negotiating a collective bargaining agreement that satisfies the various interests and needs of management and labor is a complicated task that requires significant preparation, skill, and knowledge (Leap and Crino, p. 608). The case presents a fairly realistic labor-negotiating situation that effectively instills these critical facts in students' minds by having them actively involved in creating a labor agreement.

Exhibits 1 and 2 below include all the information that is provided to students representing management and labor, respectively. Exhibit 1 is given only to management and Exhibit 2 is given only to labor. Each side uses the parameters stated to formulate their demands and then negotiate with the opposing side.

The issues that students negotiate in the case are wages, vacation time, the retirement plan, life insurance, and job security/layoffs. As stated earlier, the case has several primary goals. The case objectives are to help students better understand the labor negotiating process from the standpoint of both management and of employees, to reveal to students the challenges involved in creating a new labor contract, and to improve students' negotiating skills, analytical and critical thinking abilities, and communication skills.

The case supports the achievement of these goals by providing the demands of each side on all five issues to both management and to labor. For example as shown in Exhibit 1, management is willing to offer three weeks of vacation but management is aware of the fact that labor is requesting three weeks of vacation for each of the next three years and then four weeks of vacation each year after the third year. Thus for each of the five case issues, Exhibit 1 [Exhibit 2] provides management [labor] the parameters for their demands as well as what labor [management] is requesting. For each issue, labor demands a larger increase than management is offering. However, since students representing management [labor] are given only Exhibit 1 [Exhibit 2], neither side knows how willing the opposing side is to change their position on any of the five issues. This makes the case very realistic and motivates students to communicate effectively, to consider both management and employee perspectives, to apply critical thinking and analysis, and to wisely consider their negotiating tactics.

Informing the students about the case and getting them involved is obviously very important. The next section of the paper discusses these aspects of using the case in class.

EXHIBIT 1

Information Provided To Each Student Team Representing Management

YOU ARE THE **MANAGEMENT NEGOTIATING TEAM** FOR THE **MIDDLE AMERICA MANUFACTURING CO.** The contract with **WORKERS UNION OF AMERICA** is about to expire, and your team has proposed the following conditions for a new 5-year contract.

*A wage increase of 3% for the first two years of the contract, 4% for the next two years, and 5% in the final year. (This is negotiable, but not for as much as the union has demanded).

*An increase in vacation time to 3 weeks per year for the life of the contract. (You will not budge on this one).

*A lump-sum amount of $500 to begin a new employee's retirement fund for each person hired after the new contract goes into effect. (You may be willing to negotiate some increase in matching fund contributions, but certainly not as much as the union has demanded. And, if you do agree to some matching amount, you will withdraw the $500 offer for new employees).

*A $50,000 life insurance policy for each employee, with the Company paying 1/2 of the premium, and the employee paying the other 1/2. (You will not negotiate an increase to this offer. Currently, the Company offers no life insurance).

*At this point you are not willing to give job security to any employee in the event of downsizing. (What the employees don't know is that the Company may have to downsize in the next 3 to 4 years. You may have to back off on your "no job security" position in order to avoid a strike; however, you would only want to include employees with more than 20 years).

The union negotiators do not know which of the above conditions you will not budge on and which ones you are willing to negotiate. They also don't know that you are preparing for a lockout of employees if you cannot reach an agreement soon or if they threaten a strike. You are reluctant to use this weapon, but you may have to threaten or actually implement a lockout. You want to avoid this if at all possible.

Here is what the union demands are:

-An immediate increase in wages of 10%, with annual increases of 4% for the next four years of the contract.

-An increase in vacation time from 2 weeks per year to 3 weeks for the next three years, then 4 weeks for the remainder of the contract.

-An increase in employer matching contributions to employee retirement. Currently, the Company matches employee contributions dollar-for-dollar up to a $500 per year. The union wants this to increase to $2,000 per year.

-The union wants a program where the Company pays the entire premium on a policy with a face value of $100,000 per employee.

-A guarantee that any employee who has been with the company for more than 10 years will not lose their job during a period of downsizing.

YOUR TASK IS TO TAKE A FEW MINUTES TO READ THESE OFFERS AND DISCUSS THEM WITHIN YOUR GROUP. WHEN I CALL TIME YOU ARE TO BEGIN NEGOTIATIONS WITH THE UNION AND ARRIVE AT AN AGREEMENT WHICH WILL BE PRESENTED TO THE CLASS. IF YOU CANNOT REACH AN AGREEMENT, THEN YOU WILL HAVE TO CALL FOR A LOCKOUT.

EXHIBIT 2

Information Provided To Each Student Team Representing Labor

YOUR GROUP IS THE **NEGOTIATING TEAM** FOR THE **WORKERS UNION OF AMERICA.**

The union contract with Middle America Manufacturing Co. is about to expire and your team has proposed the following conditions for a new 5-year contract:

-An immediate increase in wages of 10%, with annual increases of 4% for the next four years of the contract. (You are willing to negotiate these percentages, but you don't want to let management know too quickly).

-An increase in vacation time from 2 weeks per year to 3 weeks for the next three years, then 4 weeks for the remainder of the contract. (You are not totally firm on the 4-week condition, but you are on the 3-week condition).

-An increase in employer matching contributions to employee retirement. Currently, the Company matches employee contributions dollar-for-dollar up to $500 per year. You want this

to increase to $2,000 per year. (You will not back off on this condition; however, you may be willing to reduce your demand to $1,500).

-Currently, the company does not pay any life insurance premium for their employees. You want them to begin a program where they will pay the entire premium on a policy with a face value of $100,000 per employee. (You are willing to give in on this condition if you can negotiate a satisfactory agreement on the other conditions).

-A guarantee that any employee who has been with the company for more than 10 years will not lose their job during a period of downsizing. (You are reluctant to back off on this condition, but you may negotiate the number of years).

Management does not know which of the above conditions you will not budge on and which ones you are willing to negotiate. They also do not know that you are willing to call for a partial strike if you cannot reach an agreement soon. You may have to bring this up during negotiations if things aren't going good for you. However, you are willing to try almost anything to avoid a management lockout of the workers, which would put all of them out of work and not look too good for the union.

Here is what the Company has offered:

*An increase of 3% for the first two years of the contract, 4% for the next two years, and 5% in the final year.

*An increase in vacation time to 3 weeks per year for the life of the contract.

*No increase in matching funds for retirement; however, they have offered to put a lump-sum amount of $500 to begin a new employee's retirement fund for each person hired after the new contract goes into effect.

*A $50,000 life insurance policy for each employee, with the Company paying 1/2 of the premium, and the employee paying the other 1/2.

*No offer on the condition of job security for employees.

YOUR TASK IS TO TAKE A FEW MINUTES TO READ THESE OFFERS AND DISCUSS THEM WITHIN YOUR GROUP. WHEN I CALL TIME YOU ARE TO BEGIN NEGOTIATIONS WITH MANAGEMENT AND ARRIVE AT AN AGREEMENT

WHICH WILL BE PRESENTED TO THE CLASS. IF YOU CANNOT REACH AN AGREEMENT, THEN YOU WILL HAVE TO CALL FOR A STRIKE.

INVOLVING THE STUDENTS IN THE CASE

To actively involve the students in the case, the instructor must introduce the case and explain basic concepts about it, prepare the students for group discussion and negotiations, and oversee the negotiation phase of the case. The following presents each of these aspects of the case in further detail.

Introducing the Case

First, the students are told that they will be given a case where they must negotiate the terms of a new labor agreement and that they will be working together in groups. Students are informed that they will either be in a group representing management or a group representing labor and that the group's task is to reach a new labor contract that is equitable to their side. The instructor then assigns each student to a group of three or four students. However, at this time the students are neither told which side they will represent nor with which other group they will negotiate. An even number of groups is required, as two student groups will negotiate with each other.

The next step is that the instructor requests that each group assign a spokesperson for the case. Once each group has done so, the instructor gives two copies of either the proposal offered by management (Exhibit 1) or the demands made by the labor union (Exhibit 2) to the group spokesperson. The instructor does not give any group spokesperson both Exhibit 1 and Exhibit 2 since each of those contain concessions that management or labor would be willing to make but does not want to immediately reveal to the opposing side. This makes the case realistic in terms of how bargaining range theory applies to actual labor negotiating situations. The basic concept of bargaining range theory is that the union will typically initially ask for greater increases in wages and fringe benefits than they would actually be willing to accept. On the other side, management's first offer of higher wages and fringe benefits is lower than they would really be willing to provide. The union does not reveal the minimum increase acceptable, while management keeps confidential the highest increase they would pay. Through a process of bargaining and negotiation, the two parties eventually agree on an increase somewhere between the minimum the union considers acceptable and the maximum that management feels is appropriate (Leap and Crino, p. 629).

Preparing Students for Group Discussion and Negotiations

After providing the case to each group's spokesperson and stressing the importance of preparing for negotiations, the instructor explains the overall process the students will follow in using the case. The instructor states that the case has two parts. In the first part, each group will meet separately for twenty minutes. In that time, each group needs to discuss the case as representing either labor or management (whichever they were assigned) and form a position on each of the five labor issues in the case. The instructor explains that during the discussion phase, he/she will be going around the room and that students are encouraged to ask any questions they have. After discussing the case in separate groups to prepare for negotiations, the second part of the case involves negotiating with the opposing side to attempt to reach an agreement on each issue.

The instructor then tells the groups to analyze and discuss the case within their group. During the twenty-minute discussion phase, the instructor answers all student questions. When only two or three minutes remain, the instructor announces the exact time left and states that each spokesperson needs to wrap everything up and be ready to discuss the group's position.

The Negotiation Phase

When students were previously assigned to a group, they only knew whether they were representing either management or representing the union. Students were not told which specific group they would be negotiating with at any point up to and including the discussion phase. The purpose of doing so is to focus students' attention on the case issues and on the importance of preparing their arguments to support the positions they reached.

Providing the case information to each group was done at the time the students were first told they would be completing a case in class. For the instructor, an easy way to effectively pre-organize the groups for the negotiation phase is to have given Exhibit 1 (representing management) to each spokesperson in every group on one side of the room and to have given Exhibit 2 (representing the union) to each spokesperson in every group on the other side of the room. For example, suppose there were six groups in a classroom, with three groups in the front row and three groups in the back row. Here, Exhibit 1 could have been given to the spokesperson of each group in the front row and Exhibit 2 could have been given to the spokesperson of each group in the back row.

In the discussion phase of the case, each group separately prepared for negotiations by thoroughly examining each of the labor issues in the case and making a decision on each issue. Once the twenty minutes allowed for the discussion phase have expired, the instructor announces that negotiations will begin. The instructor then states the ground rules for negotiating the case and requests that all students listen carefully, especially the spokespeople. Assuming there were six groups in class, the instructor would explain that three of the groups represent management and three groups represent the union. Next, the instructor pairs the groups so that each group representing management will negotiate with a group representing labor. If the three groups in

the front of the room were all representing management (i.e. were given Exhibit 1) and the three groups in the back of the room each represented labor (i.e. were given Exhibit 2), then pairing groups for negotiation is easily done by having each management group face off with the corresponding labor group directly behind them.

Once the groups are paired together, the instructor continues to discuss the negotiating rules to be followed. The instructor explains that the spokesperson of each group will sit in the middle and at the front of their group and be face-to-face with the opposing spokesperson. The other group members are told that their role is to support the spokesperson. Each group is informed that they need to have a recorder, thus each group must appoint a member to fully document what is discussed and what agreements are made during the negotiation process. The instructor then tells the groups to inform him or her when they reach a final agreement on the pay raise, since that is the often the most difficult issue for the student groups to negotiate, and then when they reach agreement on all of the four other remaining items as a whole.

Finally, the instructor tells students that he/she serves three roles in the negotiating process and will provide input in any or all of these roles if requested by a group. These roles are as company president in representing management, as the head of the union in representing labor, and as mediator. The instructor also clearly states that he/she will not serve as an arbitrator.

Each set of the paired labor and management groups face off to negotiate the labor issues in the case: wages, vacation time, retirement benefits, life insurance, and job security. The case information provides each group with guidelines and ranges regarding the specific labor issues for which they are willing to make concessions during negotiations, as well as items they are firmly set on obtaining. As stated in each case information sheet (Exhibit 1 and Exhibit 2), neither the union nor management knows how firm the opposing side is on any of the five issues. This reflects most actual labor agreement processes, where each side's strategy is usually to begin negotiating from an extreme position that requests the ideal conditions that the employees or management would prefer. The union and management will each also typically predetermine minimum concessions they would accept before a breakdown occurs in the negotiations (Mondy et al., p. 549). The case challenges the students to thoroughly consider the extent of concessions they would make on one or more issues to receive a positive result on another issue. Thus students gain an in-depth appreciation of the difficulties involved in creating a new labor agreement. Intense discussions often occur in the negotiation phase of the case. An example of an actual student comment during negotiations was: "Sears gives a raise every six months. We have worked hard for Middle America Manufacturing and we deserve at least a 25% raise over the next five years."

Students diligently strive to obtain the desired results for their group on each issue but eventually realize that rather difficult decisions about concessions must be made to create an agreement acceptable to themselves as well as the opposing side. As such, the negotiation stage

of the case accurately simulates labor negotiations for an actual union and an actual company and develops vital negotiation skills in students.

The following section discusses the results of statistical tests of the increased knowledge and skills that students obtain from doing the case.

Analysis of Case Benefits

One of the authors of this paper taught two sections of an introduction to business course in the fall semester 2010. The case was used by that author in one section of their introduction to business course, but not in the second section of the same course. This was done in order to create a control group to which the case group could be compared. The only difference between both sections was that one section did the case in class and the other section did not do the case. Prior to the case and quiz, students in both sections were assigned to read one text chapter on labor-management relations and the professor provided 50 minutes of in-class lecture on labor-management negotiation concepts.

The change in students' understanding of labor negotiation concepts as well as students' critical thinking and analytical skills, communication skills, and negotiating skills from using the case was measured by using a pre-assessment versus post-assessment survey. Students in the section that did the case were given a form listing the case learning objectives and skills indicated on Table 1 both before they were issued the case in class and then again immediately after they has finished discussing the case. Separate (new) forms were used for the each assessment. Students assessed their understanding of the seven objectives shown in Table 1 as well as their level of critical thinking and analytical skills, communication skills, and negotiating skills. 32 students completed both the pre-case and post-case assessment surveys, for which the mean responses for each learning objective and skill are provided in Table 1 together with the results of paired values t-tests of the data.

Table 1 indicates that at a 0.001 significance level, the use of the case improved students' understanding of: which items are mandatory bargaining issues, the skills needed to have a successful labor negotiation, the roles of and strategies used by both management and labor in the labor negotiation process, the challenges faced by both management and labor in the labor negotiation process, and the overall labor negotiation process. This demonstrates that the case provides valuable benefits to students in improving their understanding of important labor negotiation concepts.

Table 1

Students' Self-assessment of Understanding of Learning Objectives and Level of Student Skills Improvement in Student's Understanding of Labor Negotiation Concepts and in Overall Skills

Scale:
1 Very Weak 2 Weak 3 Neither Weak nor Strong 4 Strong 5 Very Strong

Case Learning Objectives	Pre Case Mean	Post Case Mean	Mean Difference	t	Df	P-value
My understanding of:						
Which issues must (by law) be discussed during the labor negotiation process is:	2.50	3.50	1.0	-4.4	31	0.001
The skills needed to have a successful labor negotiation process is:	2.88	3.72	0.84	-3.7	31	0.001
The roles of and strategies used by management in the labor negotiation process is:	2.69	3.78	1.09	-5.0	31	0.001
The challenges typically faced by management in the labor negotiation process is:	2.63	3.97	1.34	-5.8	31	0.001
The roles of and strategies used by employees in the labor negotiation process is:	2.69	3.88	1.19	-4.7	31	0.001
The challenges typically faced by employees in the labor negotiation process is:	2.69	3.91	1.22	-6.0	31	0.001
The overall labor negotiation process is:	2.66	3.78	1.12	-4.5	31	0.001
Important Skills						
I assess my:						
Critical thinking and analytical skills as:	3.97	4.28	0.31	-1.7	31	0.053
Communication skills as:	3.94	4.09	0.15	-0.6	31	0.283
Negotiating skills as:	3.88	4.06	0.18	-0.8	31	0.220

Table 1 also summarizes the students' pre-case versus post-case assessment of their skills. The paired t-test reveals that at a 0.053 significance level that the case did significantly improve students' critical thinking and analytical skills. However, the case appears to have had little impact on improving students' communication skills or negotiating skills, since the statistical results for these were not significant at a reasonable level. The lack of results for the communication and negotiating skills may be due to students rating themselves higher in the pre-case assessment than is accurate. Since the students in the course were all freshman, they may not have yet been required to do challenging communicating or negotiating activities and thus they may perceive that they possess excellent communication and negotiating skills when perhaps they do not.

A second test of the benefits of using the case was done by giving a five-question multiple-choice quiz to both sections of the introduction to business course: the section of

students who did the case in class and the control section that did not do the case. Table 2 provides the quiz questions along with the percentage of correct answers for the control group and the case group. 79 students in the control group and 32 students in the case group answered all five quiz questions. A two-sample t-test of means was performed to compare the results for each group for each question and for the overall quiz average.

Table 2 indicates that the overall average correct percentage of quiz answers were 57.22% for the control group and 78.75% for case group, and the t-test reveals that using the case provided a significant improvement in students' overall understanding of labor negotiation concepts, at a 0.0001 level of significance. The case group also displayed significantly (at the 0.001 level) greater understanding of the concepts of lockout and tactics that could be used by the labor union than did the control group as indicated by the results for questions 1 and 4. The control group was marginally significantly better (at the 0.063 level) that the control group regarding what is required to have a successful labor-management negotiation (question 5), but indicated no significant difference on questions 3 and 4 concerning the purpose of collective bargaining and being able to identify which item is not a mandatory bargaining issue.

The following section provides additional guidance and suggestions to instructors in using the case in their courses.

TEACHING NOTES AND EXPLANATION

The purpose of this section is to provide clarification and additional explanation of various aspects of the labor negotiation case and suggestions for the instructor's interaction with the students. Discussed next are the spokesperson's role, evaluating group effectiveness, student learning objectives, other roles of the instructor, and finalizing negotiations and discussing the case results.

Role of the Spokesperson

As explained previously in the section on introducing the case, each group is asked to appoint their own spokesperson. Generally, students understand that the group spokesperson should be a good communicator and be perceived as a competent leader by the other group members. Students will usually select a good spokesperson without any comments by the instructor on the necessary qualifications. However, the instructor may certainly decide to briefly mention the qualities of an effective spokesperson to assist groups in their choice. The role of the spokesperson is also optional for the instructor to discuss. The role of the spokesperson when groups meet separately in the discussion phase is to lead the meeting, to efficiently request and obtain all of the other group member's views and input, and to encourage and guide the group to reach a consensus decision. The spokesperson's role in the negotiation phase is to bargain effectively to obtain the best possible deal for their side.

Table 2: Student Assessment of Labor Negotiation Learning Objectives Labor Negotiation Quiz Correct Percentages: Control Group vs. Case Group

Quiz Question	Control Group %	Case Group %	Mean Difference	t	Df	P-value
1	46.84	90.63	43.79	-5.7	94	0.001
2	87.34	93.75	6.41	-1.1	78	0.134
3	53.16	62.50	9.34	-0.9	59	0.186
4	45.57	78.13	32.56	-3.5	68	0.001
5	53.16	68.75	15.59	-1.6	61	0.063
Average	57.22	78.75	21.53	-4.3	70	0.001

The quiz questions, possible answers, and correct answers shown in bold were:

1. Lockout is an option that can be exercised by:
   A. Management
   B. Labor Union
   C. Stockholders
   D. Board of Directors

2. The primary purpose of collective bargaining is to:
   A. ensures worker participation in setting the goals and objectives of the company.
   B. establishes and communicates clear guidelines for performance appraisals.
   C. limit the authority of management to set job categories and direct worker activities.
   D. negotiate a labor-management agreement that both the union and management are willing to accept.

3. Which one of the following items is not a mandatory bargaining issue that by law must be negotiated to create a new labor-management agreement?
   A. Wages
   B. Stock Options
   C. Working conditions
   D. Job Security

4. If labor and management cannot reach an agreement through collective bargaining, both parties may use specific tactics to enhance their negotiating position. Which tactic below could be used by the labor union?
   A. Installing a labor union representative on the company's board of directors
   B. Injunctions
   C. Strikebreakers
   D. Picketing

5. Which of these scenarios would lead to a successful labor-management negotiation?
   A. The labor union representatives have good communication skills.
   B. Management will stay firm on its offerings, because management knows that the labor union will eventually agree to its terms.
   C. The demands of both labor and management fall within the bargaining zone.
   D. Both A and B are correct.

Assessing Group Effectiveness

It is suggested that the instructor inconspicuously listen in on the communication within each group or between each pair of groups in the discussion phase and in the negotiation phase, respectively. This allows the instructor to assess if the groups are making reasonable progress in each phase of the case. The instructor can then provide any assistance or feedback he/she feels is needed, even if the students do not request help. For example, in the negotiation phase the instructor can listen to each pair of groups presenting their arguments to notice if other group members attempt to take over the discussion from the spokesperson. In other words, the instructor notices how well the group supports their spokesperson. If group members other than the spokesperson are doing most of the talking and negotiating, then the instructor may wish to discuss the possible consequences of such a negotiating style with only that particular group. This is especially true if group members are presenting different demands on the same labor issue to the other side. The instructor could explain to the group that taking over the lead from the spokesperson presents an image of disorganization and disunity to the opposing side and could easily result in the other group becoming firmer in their positions and be less willing to make concessions. If the instructor does comment to a group, he/she should do it quietly enough that only that particular group hears the comments.

Student Learning Objectives

A main learning objective for the case issues of vacations and life insurance is that students learn to work within the negotiating parameters given for each issue. Since the issues of vacation and life insurance are relatively straightforward and less complex than the other case issues, another objective of using these issues is that students learn the value of compromising and how to effectively give and take with the opposing side. The relative simplicity of these two issues allows students to focus attention on and better appreciate the negotiating process itself. The case issues involving vacations and life insurance are the ones that students usually resolve most easily.

The case issues that are more difficult for students to reach agreement about are wages, the retirement plan, and job security/layoffs. Considerable latitude is given in the parameters for each of these issues. The potential range of possible outcomes for each issue stresses to students the critical need for their judgment and realistic evaluation of alternatives. Also, it is suggested that the instructor encourage the students to be creative in negotiating these issues in order to stimulate their analytical and innovative thinking processes. The overall objective of each of these issues is to require students to provide fairly in-depth analysis and input to resolve each of them; that students will learn that reaching an agreement on wages, the retirement plan, or job security/layoffs requires considerable effort and skill. Thus, the complexities involved in these issues are designed to result in significant improvement in students' analytical and negotiating

abilities. Improving students' negotiating skills is a realistic goal since the case is designed so that each side has information that is not known to the other side. As such, students must wisely consider what information they reveal to the opposing group in order to not make any unnecessary concessions. A final learning objective in regards to wages is that students will gain a basic understanding of the time value of money concept, i.e. that an 8% raise in year 1 and a 3% raise in year 2 is better for employees than is a 4% raise in year 1 and a 7% raise in year 2. Most students will probably not consider the time value of money concept by themselves. As such, when all groups have reached an agreement it is suggested that the instructor briefly explain the time value of money concept to the students.

Other Roles of the Instructor

As stated earlier in the "The Negotiating Phase" section, the instructor will serve in one or more of three roles if requested by a student group. The instructor will provide input in the negotiating process as company president in representing management, as the head of the union in representing labor, and as a mediator in helping to resolve serious impasses in negotiations.

In each of these roles, the instructor is there to assist the students with the negotiating process but should not assume the role of a group spokesperson. For example, as either company president or as the union head, the instructor may suggest demands in wages and benefits they could make to the opposing side. The instructor is there primarily as an advisor and should allow the student groups to have control over the negotiations as much as possible. As a mediator, the instructor can help groups agree on one or more case issues that they are deadlocked on and otherwise would likely not resolve. Also, if any groups did not reach agreement on one or more issues, the instructor could ask the groups why they did not ask him or her to act as a mediator.

It is fairly common for students to ask the company president or the head of the union for permission to offer something that is not stated in the case. For example, a student may request authority to negotiate for three personal days in lieu of one week of vacation. At the instructor's discretion in their role as company president or the union leader, they may approve such requests if they are reasonable.

Wrapping Up Negotiations and Discussing Group Results

Groups are allowed about 40 to 45 minutes of negotiating to attempt to reach agreement on all five of the labor issues. Groups can be given more time it if is available and necessary. It is important that the instructor has about 10 minutes left to discuss the agreements reached by each pair of groups and provide any feedback that he/she feels is needed. It is suggested that the instructor announce when five minutes remain in the negotiation phase. Since a labor agreement is quite important, to motivate the students to complete negotiations the instructor could make a serious-toned statement such as "Five minutes left. You either come to an agreement on

everything or all employees are out of work and the company closes up." Also, if any management [labor] team is being very stubborn in negotiating with the union labor [management] team, the instructor may wish to sternly state something like "Come to an agreement or as company president [head of the union] I will throw you out."

Once negotiations are complete, the instructor will ask each set of groups what they agreed for each issue and then make comments regarding the results. Actual results from one class with six groups and selected instructor comments shown in parentheses were as follows:

	Groups 1 and 2	**Groups 3 and 4**	**Groups 5 and 6**
Wages	4% x 4 years, then 8%	7%,5%,4%,2%,2%	Union goes on strike
	(26.3% cumulative,	(21.6% cumulative,	
	favors the union)	favors management)	
Vacation	3 weeks a year	3 weeks a year	3 weeks a year
Retirement	Match up to $1500/year	Match up to $1500/year	
Life Insurance	$50,000; company half	$65,000; company half	
Job Security	After fifteen years	After fifteen years	

In regards to the group that decided to strike, the instructor commented that neither the company nor the employees win in a strike and that a strike should always be avoided if reasonably possible.

Additionally the instructor asked, "Spokespeople, did anyone in your group take over"? The management group that failed to agree with the union on wages replied that they wanted to fire the management team leader. Then the instructor asks them "Did you ever jump in"?

The instructor could also mention that under federal law, a company must negotiate with the union in good faith concerning wages, hours, and working conditions of union employees. However, the law does not state that the union and management must come to an agreement (Leap and Crino, p. 608). The company is not legally obligated to agree with the union on compensation or any other employment issue but by doing so the company may face a strike by employees (Leap and Crino, p. 614).

These brief examples are given to illustrate that the instructor should discuss the most important case results with the students. Also, this is the most appropriate time to discuss the time value of money concept if so desired.

The following section provides a summary of the paper.

SUMMARY

Management's relationship with employees is an important aspect of the successful operation of every entity. Many firms have labor agreements with their employees to specify wages and fringe benefits for a certain time period, usually from three to five years. The

negotiation of a new labor agreement will thus occur at least every few years and will have a significant impact on the entity and on labor for the future time covered by the new agreement.

This paper presented a simulated but realistic case involving the negotiation of a new labor agreement between management and labor. The case provides business students key knowledge and skills about the labor negotiation process. In the case, students seek to reach agreement on wages, vacation time, the retirement plan, life insurance, and job security/layoffs. The issues included in the case are among the most important items in actual labor negotiations between companies and their employees.

Survey assessments by students who did the case, as well as quiz results for students who did the case versus quiz results for students who did not do the case reveal that the case significantly increased students' understanding of labor negotiation issues and concepts. The case also provided students with significantly improved critical thinking skills and analytical skills.

The case presented in this paper is used in an introductory business course, but could also be used in introductory management courses or human relations courses. The case provides students with practice in negotiating, insight into both management's and labor's perspectives of creating a new labor agreement, and helps them to better understand some of the major complexities involved in developing a new labor agreement.

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ASSESSMENT OF A MASTER OF ACCOUNTANCY PROGRAM: A CASE STUDY AT THE UNIVERSITY OF IDAHO

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ABSTRACT

The Accounting Department faculty at the University of Idaho developed a formal and systematic assurance of learning plan to demonstrate that graduates achieve learning expectations. The Master of Accountancy Assessment Plan provides guidance for assurance of learning at the program level and the individual course level. The assessment results of the student learning goals are used to modify and improve the curriculum.

In this paper, the Master of Accountancy Assessment Plan is presented. Also the MACCT assessment process in 2007-08 and 2008-09 is discussed, including the actual activities, the courses utilized, the rubrics used to evaluate the performance, the results, and the action taken to "close the loop" to improve student learning.

INTRODUCTION

According to AACSB, "Student learning is the central activity of higher education. Definition of learning expectations and assurance that graduates achieve learning expectations are key features of any academic program." To be able to demonstrate that achievement at graduation requires a comprehensive learning outcomes assessment plan.

The Accounting Department faculty at the University of Idaho developed a formal and systematic assessment plan in 2006. The current Master of Accountancy (MACCT) learning goals address students' (1) professional accounting knowledge, (2) critical thinking, ethical problem solving, and research skills, (3) communication skills, (4) clarify purpose and perspective, and (5) teamwork and collaboration.

In this paper, the assurance of learning process of the Master of Accountancy program is presented. The MACCT Assessment Plan is discussed, including the parties involved, the responsibilities of the department head and Accounting Programs Assessment Committee, and the direct and indirect assessment methods used. The MACCT assessment process in 2007-08 and 2008-09 is also discussed, including the actual activities, the courses utilized, the rubrics used to evaluate the performance, the results, and the action taken to "close the loop" to improve student learning.

BACKGROUND

The University of Idaho was founded in 1889 as the land-grant institution for the state. The main campus is a residential campus located in Moscow, Idaho. The accounting program at the University of Idaho is housed in the Department of Accounting within the College of Business and Economics (CBE).

The business program was first accredited by the Association to Advance Collegiate Schools of Business (AACSB) in 1993 and the accounting program was separately accredited in 2000. Accreditation for both programs was extended in 2009. In the fall 2008 semester, the CBE had 1,294 students taking courses in two academic departments: Business and Accounting. The CBE offers a baccalaureate degree program leading to a B.S. Business (with majors in Accounting, Business Economics, Finance, Information Systems, Management and Human Resources, Marketing, and Production Operations Management) and masters' degree programs leading to a Master of Accountancy and Executive MBA.

In 2008-2009 the Department of Accounting was comprised of nine state-supported faculty positions, eight in accounting and one in business law. The accounting programs are oriented toward professional careers in accounting. The programs work to develop and enhance a student's thinking, judgment, and communication skills in accounting, while providing a sound technical foundation. In fall 2008, there were 209 undergraduate accounting majors. Forty-two B.S. in Business with a major in accounting degrees were awarded during the 2008-2009 academic year.

The Master of Accountancy (MACCT) degree was started in 1996 in response to the enactment of the 150 credit hour educational requirement introduced by the Idaho State Board of Accountancy for students seeking certification as Certified Public Accountants in Idaho. The degree provides an attractive postgraduate program of study to meet this requirement by offering a general graduate degree allowing students the opportunity to achieve both a broader and deeper knowledge of accounting and to acquire expertise in a second area of their choice, such as, finance, information systems, and law. The Accounting Department and the University of Idaho's College of Law offer a concurrent JD/MACCT degree. In fall 2008 there were 28 students enrolled in the MAACT program, including two in the concurrent JD/MACCT program. Fifteen MACCT degrees were awarded during 2008-2009.

Mission

The CBE and Accounting Department faculty began a systematic review and revision of the college and Accounting mission statements during the 2006-2007 academic year. The Accounting Department's current mission statement is as follows:

> We provide a collaborative learning environment that prepares our students to be responsible accounting professionals. We prepare our students to succeed personally and professionally while exhibiting high ethical standards. As a land grant university we have a primary responsibility to serve the citizens of Idaho. We also recruit students regionally and we attract students from other states and other countries.
>
> We accomplish this mission by
>
> - Delivering a high quality program of accounting studies that encompasses the relevant features of a dynamic accounting and business environment:
> - For undergraduate students, deliver general preparation in accounting to provide a foundation for future study or employment
> - For graduate students, build upon the foundation to prepare for an accounting career
> - Providing experiential learning opportunities for our students.
> - Engaging in research that makes meaningful contributions to accounting practice and accounting education.
> - Delivering and supporting outreach programs that build on our competencies within the college and meet the needs of our stakeholders.
> - Sharing our accounting expertise in support of our state, our professions, and the academic community.

Learning Goals

After the College of Business and Economic and Accounting Department missions were revised, the faculty developed a new strategic plan that was adopted May 7, 2007. The Teaching and Learning Goal of the Strategic Plan follows:

> Continue to improve the learning environment for CBE students through excellence in teaching and to provide meaningful educational experiences in order to promote greater student achievement of the CBE learning goals.

As part of the revision process the Student Learning Goals (undergraduate and MACCT programs) and the CBE Assessment Plans (undergraduate programs and MACCT program) were also revised. The accounting faculty members were very involved in these revisions.
The Master of Accountancy Learning Goals map to the College of Business and Economics learning goals and to the University of Idaho's learning goals:

MACCT #1. Professional Accounting Knowledge - MACCT students will acquire advanced accounting knowledge to prepare them for the accounting profession or further graduate work.

MACCT #2 Critical thinking, Ethical Problem Solving, and Research Skills.

2a. Critical Thinking and Ethical Problem Solving - MACCT students will demonstrate critical thinking skills necessary for identifying and addressing complex situations in accounting-related areas including ethical dilemmas.

2b. Research Skills - MACCT students will be able to locate appropriate information, apply the rules or standards to a set of facts, and make an appropriate recommendation regarding a course of action.

MACCT #3. Communication - MACCT students will enhance their ability to effectively communicate through oral presentations and professional writing assignments.

MACCT #4. Clarify purpose and perspective - MACCT students will have opportunities for experiential learning, relationship development and appreciation of global perspectives.

MACCT #5. Teamwork and Collaboration - MACCT students will have opportunities to enhance their ability to interact in teams.

Assessment of Learning Goals

While learning goals and some assessment procedures for the undergraduate and MACCT programs were in place prior to 2006, program assessment was conducted less formally and systematically than was desirable. Since 2006, the college and Accounting Department faculty has used several assessment processes to evaluate and enhance specific areas of its program at the program level and at the individual faculty level. The undergraduate accounting program is assessed as part of the college assessment plan and as part of the Accounting Department assessment activities.

The college has five main faculty-led committees with responsibility for curriculum design and assurance of learning activities: (1) the Teaching and Learning Goal Committee, (2) the CBE Curriculum Committee, (3) the CBE Assessment Committee, (4) the Executive MBA Assessment Committee, and (5) the Accounting Programs Assessment Committee. The CBE Curriculum Committee, a sub-set of the broader Teaching and Learning Goal Committee, bears specific responsibility for ensuring that lessons learned from our assessment activities guide revision(s) of the curriculum. The CBE Assessment Committee leads the assessment efforts for

the CBE undergraduate core business courses. Accounting faculty are active members of the college committees.

The Accounting Programs Assessment Committee leads the assessment efforts for the undergraduate accounting program and the MACCT program. The Accounting faculty as a whole bears the responsibility for revising individual accounting course content and delivery and for making recommendations for curriculum revisions to the CBE Curriculum Committee.

The MACCT program is assessed separately at the department level. The presentation of the Master of Accountancy program assessment process follows.

MASTER OF ACCOUNTANCY ASSESSMENT PROCESS

The MACCT program builds on a student's undergraduate preparation to enhance his or her education to become a successful accounting professional. The MACCT learning goals are presented earlier in this paper.

The MACCT Assessment Plan, similar to the CBE Assessment Plan, provides guidance for assurance of learning at the program level and the individual course level. The Assessment Plan concludes with a summary of the process by which these assessment results will be used to modify and improve the curriculum.

The MACCT Assessment Plan

Program Level Assessment

The assessment plan at the program level includes both direct and indirect assessment procedures. The AACSB standards stress the importance of direct measurement of student achievement. Direct assessments are assessments that evaluate actual student work. The accounting faculty members also feel that indirect measures, including focus groups, surveys, and placement rates, provide valuable assessment information. Each MACCT learning goals is assessed at least every two years, but usually more often, using direct and indirect assessment methods.

Direct assessment activities included the following:

1) At the annual August Accounting Retreat, the accounting faculty determine which Learning Goals will be assessed in the upcoming academic year and identify both the courses and the direct measures (e.g., exams, projects, presentations) to be used to evaluate student work.
2) The Accounting Department head is responsible for gathering this work over the course of the academic year.
3) In May the Accounting Programs Assessment Committee conducts direct assessment activities (e.g. assesses writing skills and critical thinking skills of the Comprehensive

Exams) using pre-developed rubrics. Direct assessment activities are also conducted during the year (e.g. one or two professors assess oral communication skills during course presentations).

4) Members of the Accounting Advisory Board are involved in direct assessment activities. In 2009, three board members assessed the oral communication skills of student presentations. In 2008 several board members assessed the written and critical thinking skills of research papers. The results are communicated to the Accounting Department head.

Indirect assessment activities included the following:

1) Focus groups with MACCT students are conducted annually. In 2007, 2008, and 2009 the Accounting Department head met with the graduate students to discuss the Master of Accountancy program. The students discussed the degree to which they have attained the learning goals, as well as their opinions about the strengths and weaknesses of the program.
2) A written survey of graduating MACCT students is conducted annually in the Advanced Auditing Seminar.
3) Career placement of graduating MACCT students is carefully tracked. The Accounting Department head and administrative assistant keep close contact with the MACCT students about placement opportunities.
4) A survey of alumni from the College of Business and Economics, including MACCT students, was conducted in fall 2008. The intent was to learn not only the placement of graduates, but also their perception of how well the program prepared them for the challenges of their profession.

The Accounting faculty meet at least once a semester to ensure that the direct assessment activities are being conducted and to adjust the annual assessment plan as needed.

Individual Faculty Level

Assessment is embedded in course planning and the annual faculty evaluation process. In each course syllabus, faculty members are requested to list course learning objectives and how they will be assessed (e.g., exams, projects, presentations). At the end of each semester, before the following semester begins, faculty report on

1) Changes that were made as a result of the previous semester's assessment report on this course.
2) Their evaluation of how well course objectives were achieved in the current year.
3) Changes that will be made in course delivery, assessment techniques, or course objectives the next time the course is taught.

Closing the Loop' at the Program-Level

The above assessment processes provide information about how well students are achieving the MACCT learning goals and identify areas where the curriculum and individual courses can be improved. Improvements have included changes in course requirements, additions and deletions of course content, and refinements of teaching methods.

Each year the Accounting Department head summarizes the results of the assessment activities in a written report. The accounting faculty reviews this MACCT Assessment Report at the August Accounting Retreat. Recommendations for curriculum and individual course revisions developed by the faculty discussion are added to the report. The report is then presented to the CBE faculty at the August Faculty Retreat, the Accounting Advisory Board at the fall meeting, and filed with the UI Institutional Planning Office. Any curriculum revisions approved by the Accounting faculty are submitted to the CBE Curriculum Committee, the CBE faculty, and the University Curriculum Committee for approval.

MACCT Assessment Process in 2007-08 and 2008-09

The direct assessment of the MACCT program level learning goals was conducted in the required MACCT seminars (ACCT 561 Comparative Theory Seminar, ACCT 570 Advanced Accounting Information Systems, ACCT 590 Advanced Auditing Seminar, and ACCT 592 Financial Accounting and Reporting Seminar) and using the Comprehensive Exams taken by each student at the end of their degree program. Student performance on course exams, projects, presentations, and the Comprehensive Exams were assessed using four common rubrics (see appendices for the Writing Rubric, Critical Thinking Rubric, Ethical Thinking Rubric, and Oral Presentation Rubric used). Student performance is generally placed into one of three categories: EXCEEDS EXPECTATIONS, MEETS EXPECTATIONS, and DOES NOT MEET EXPECTATIONS.

Student's performance was assessed by the following groups:

- Accounting faculty members
- Accounting Programs Assessment Committee
- Accounting Advisory Board members

Below is a summary of the measures utilized in the four required MACCT seminars and the Comprehensive Exam to assess our student learning on the MACCT learning goals.

MACCT Learning Goals and Assurance of Learning Overview 2007-08 and 2008-09		
Learning Goal	Direct Measures Used	Courses Utilized
Professional Accounting Knowledge	Comprehensive Exam [assessed by Accounting Assessment Committee]	
International accounting issues and IFRS	Papers and cases on International issues [assessed by Accounting faculty members]	ACCT 561 ACCT 592
Critical Thinking and Ethical Problem-Solving	Comprehensive Exam essay questions [assessed by Accounting Assessment Committee using common Critical Thinking rubric] Case studies [assessed by Accounting faculty using common Critical Thinking and Ethical Critical Thinking rubrics]	 ACCT 561 ACCT 590
Research Skills	Research papers [assessed by Accounting faculty]	ACCT 592
Communication: Written	Comprehensive Exam essay questions [assessed by Accounting Assessment Committee using common Writing rubric] Case studies and papers [assessed by Accounting faculty member using common Writing rubric]	ACCT 561 ACCT 590
Oral	Oral presentations [assessed by Accounting Advisory Board members using common Oral Presentation rubric] Oral presentations [assessed by Accounting faculty]	ACCT 592 ACCT 561 ACCT 570
Clarify Purpose and Perspective	Self-reflective reports from students participating in internships Self-reported participation in UI and CBE experiential activities	Internships MACCT Graduate Survey
Teamwork and Collaboration	Group presentation [assessed by Accounting Advisory Board members with common Oral Presentation rubric] Post-project peer evaluations project [assessed by students]	ACCT 592 ACCT 590
	<u>Indirect Measures Used</u>: Placement Rate Graduating Satisfaction Survey Alumni Satisfaction Survey Focus Group: MACCT students	

Below is a summary of key concerns from our assurance of learning process and actions taken.

Key Assurance of Learning Findings and Actions Taken		
Learning Goal	Major Concern	Action Taken
Professional Accounting Knowledge Accounting theory Advanced AIS Advance auditing Advanced financial accounting	MACCT students without a business degree demonstrated a weakness in understanding of the business environment MACCT students without an accounting degree are weak in cost accounting In the 2007-08 comprehensive exams, 100% of the MACCT students performed at "exceeds expectations" or "meets expectations" on accounting knowledge, but the accounting faculty felt performance could be improved.	Increased requirements to include 24 credits of business and business related courses. Required all students to complete a Business Law course. Required an upper-division cost course. In 2008-09 the Comprehensive Exam was revised to better assess the specific accounting knowledge by adding more questions requiring specific knowledge.
International accounting issues and IFRS	MACCT students need additional instruction on IFRS	Added lectures and projects on IFRS in ACCT 561 and ACCT 592.
Critical Thinking and Ethical Problem-solving	In 2007-08, 14% of the MACCT students performed "below expectations" on several the dimensions of our critical thinking and ethical critical thinking rubric. These weaknesses included identifying issues and key assumptions, analyzing evidence, and discussing conclusions and implications of the recommendation. After the implementation of the actions stated in next column, the percentage of "below expectations" decreased and "exceeds expectations" increased.	Adopted the common Critical Thinking Rubric across all MACCT seminars. It is now given to all MACCT students. ACCT 561 assignments are graded and returned using the rubric. Added lectures and in-class assignments in ACCT 561 to teach critical thinking skills. Added assignments to ACCT 561 and ACCT 592 that require critical thinking skills. Adopted the common Ethical Critical Thinking Rubric across all MACCT seminars. It is now given to all MACCT students. ACCT 561 and ACCT 590 assignments are graded using the rubric. In ACCT 561 added readings on earnings management. In ACCT 590, adopted textbook on ethical decision making and require case assignments from text.
Research Skills	Even though 100% of the MACCT students performed at "exceeds expectations" or "meets expectations" in 2007-08, the accounting faculty felt that performance could be improved.	In ACCT 592, added cases and projects that require students to conduct research in the authoritative literature using the FARS database.

Key Assurance of Learning Findings and Actions Taken		
Learning Goal	Major Concern	Action Taken
Communication Skills Written	In 2007-08, 14% of the MACCT students performed "below expectations" on several the dimensions of the written communication rubric. These dimensions included logic and organization and development of ideas. After the implementation of the actions stated in next column, the percentage of "below expectations" decreased and "exceeds expectations" increased.	Adopted a common MACCT Writing rubric for greater consistency and reinforcement of effective writing components. It is now given to all MACCT students. ACCT 561 assignments are graded and returned using the rubric. Required a text on effective writing in ACCT 561. Added discussions on the quality of writing. Required more writing assignments in ACCT 561. Encouraged MACCT students to use the Writing Lab, staffed by an English tutor. Added visits to classrooms by the Writing Lab tutor, giving workshops to students and faculty on effective writing techniques.
Oral	Students less strong at oral communication, especially students who did not go through UI undergraduate program	Required more oral presentations in ACCT 561, ACCT 570, ACCT 590, and ACCT 592. In ACCT 561 added discussions on the basics of good presentation skills.
Clarify Purpose And Perspective	Need to increase participation by MACCT students in UI and CBE experiential activities	Began holding a reception for MACCT students each fall. Began promoting CBE experiential learning opportunities that require accounting expertise. Emphasized the CPA Firm Fair for internship information and positions.
Teamwork and Collaboration	Students have requested training on teamwork (not just assign team projects)	In ACCT 590, made plans to add discussions and activities on team building and leadership skills by a HR faculty member.

In conjunction with the above assessment process, the undergraduate and graduate accounting curriculum is reviewed annually by the accounting faculty and members of the Accounting Advisory Board to help maintain its currency and to keep students prepared for the ever-changing needs of the accounting profession. In recent years, the department has expanded its efforts to include increased coverage of International Financial Reporting Standards and ethical decision making throughout the accounting curriculum. The department has funded faculty development in these areas with grants and travel funds. In addition, courses in fraud

examination, sustainability accounting, and entity law have been developed and offered in the past three years.

CONCLUSION

The accounting department assessment process has significantly improved over the past five years. The AACSB peer review team recently cited our assessment plan as a 'best practice.' Success in the assessment of the accounting programs has occurred because of the commitment of the faculty, staff, administrators, students, and Accounting Advisory Board members. Through fostering faculty awareness of the assessment program, by communicating the assessment activities for each upcoming year and the results from the prior year, and by providing staff and administrative support, we have been able to gain faculty buy-in and support of our assessment program. Our faculty, students, and advisory board members, in general, believe that a structured assessment process is valuable, regardless of accreditation standards. Improving our program and the quality of our graduates has always been important to our faculty and our stakeholders. The challenge will be to continue to maintain faculty support of the assessment program and to improve the assessment process in the future.

Appendix I - Rubrics

Oral Presentation						
Component	**Developing**		**Proficient**		**Accomplished**	
Speed, volume, & diction	- Speed and/or volume of delivery was inappropriate.		- Speed occasionally too fast or too slow or volume occasionally too loud or too soft.		- Speed was appropriate.	
	- Diction made it difficult for audience to understand.		- Diction generally clear, easy to understand.		- Strong, clear diction and volume.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Speaking to the audience	- Most or all of the presentation appeared to be read or recited from memory.		- Generally spoke to the audience but occasionally spoke to the screen, or notes.		- Appeared to speak to the audience from a thorough understanding of the topic.	
			- Occasionally sounded memorized		- Didn't read or sound memorized.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Non-verbal delivery	- Appeared very nervous.		- Somewhat stiff.		- Relaxed and poised.	
	- Over or under-use of gestures and movement.		- Too relaxed or too animated.		- Appropriate amount of movement and gestures.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Persuasion and impact	- Not very convincing.		- Somewhat convincing.		- Convincing.	
	- Little emphasis used.		- Some emphasis used.		- Appropriate emphasis.	
	- Little or no enthusiasm apparent.		- Little enthusiasm.		- Good enthusiasm when appropriate.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Demonstration of knowledge	- Does not include important facts, details, or concepts.		- Includes most of the important facts, details, and concepts.		- Includes important facts, details, and concepts.	
	- Reports incorrect information.		- Minor errors in information presented.		- Information presented is correct.	
	- Uses information incorrectly.		- Information usage is essentially correct.		- Information is used appropriately.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Professionalism	- Frequent use of slang or casual language.		- Some jargon and slang used.		- Professional language.	
	- Less than professional attire.		- Questionable attire for professional presentation.		- Appropriate attire.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Use of media	- Media distracts from the points and topics being conveyed.		- Media does not distract from important points and topics.		- Media successfully emphasizes important points and topics.	
	- Media elements are difficult to understand or read.		- Most media elements are clear and easy to understand.		- Media elements are clear and easy for audience to understand.	
	1	2	3	4	5	6

Writing Skills						
Component	**Developing**		**Proficient**		**Accomplished**	
Purpose	- Has no clear purpose or focus.		- Develops most points around a clear purpose or focus.		- Succinctly develops points around a clearly defined purpose and focus.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Logic and organization	- Does not develop ideas logically.		- Develops ideas satisfactorily, although some ideas need development.		- Develops ideas cogently, organizes them logically into paragraphs, uses effective transitions.	
	- Ineffective introduction and conclusion.		- Has adequate transitions.		- Has clear, insightful introduction & conclusion.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Demonstration of knowledge	- Does not include important facts, details, or concepts.		- Includes most of the important facts, details, and concepts.		- Includes important facts, details, and concepts.	
	- Reports incorrect information.		- Minor errors in information presented.		- Information presented is correct.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Language	- Uses words and syntax that are inadequate for clarity.		- Demonstrates sufficient control of language to convey ideas with reasonable clarity.		- Uses words with fluency; develops effective, concise standard English sentences.	
	- Errors seriously distract from meaning.				- Uses syntactical variety.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Spelling and grammar	- Has severe and persistent errors.		- Generally follows the conventions of standard written English.		- Uses standard written English with essentially no errors.	
			- Flaws do not interfere with meaning.			
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Development of ideas	- Lacks support for ideas.		- Supports main points adequately.		- Explores ideas vigorously.	
	- Confuses personal and external evidence.				- Supports points fully, using a balance of detailed subjective and objective evidence.	
	1	2	3	4	5	6

Critical Thinking Skills						
Component	**Developing**		**Proficient**		**Accomplished**	
Identifies & summarizes problem or issue	- Does not identify and summarize the problem. - Is confused or identifies a different or inappropriate problem.		- Identifies the main problem and major subsidiary, embedded, or implicit aspects of the problem.		- Identifies not only the basics but also the nuances of the issue.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Identify key assumptions	- Does not present assumptions that underlie the issue.		- Identifies some of the key assumptions that underlie the issue.		- Identifies and questions the validity of the key assumptions that underlie the issue.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Interpret and organize relevant information	- Does not present important points; discusses irrelevant information.		- Uses evidence logically to support point of view.		- Preserves problem complexity, but emphasizes the most important points.	
	- Offers data from a biased perspective.		- Analyzes information from multiple perspectives.		- Argues convincingly for own perspective; articulates strengths and weaknesses of position.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Reaches an appropriate conclusion or recommendation	- Identifies one possible solution or courses of action.		- Clearly explains at least two alternative solutions or courses of action.		- Clearly explains several alternative solutions or courses of action.	
	- Does not draw a clear conclusion or make a recommendation.		- Draws a clear conclusion or makes a solid recommendation.		- Draws a conclusion or makes one or more clear recommendations that are insightful and/or creative.	
	- Conclusion or recommendation is not appropriate for the situation.		- Conclusion or recommendation is not supported.		- Conclusion or recommendation demonstrates creativity and ability to integrate knowledge.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Identifies implications & consequences	- Fails to identify implications and/or consequences of conclusion or recommendation.		- Identifies and discusses some implications and/or consequences.		- Clearly identifies multiple implications and/or consequences of conclusion or recommendation.	
	1	2	3	4	5	6

Ethical Critical Thinking Skills						
Component	**Developing**		**Proficient**		**Accomplished**	
Identifies & summarizes ethical issues	- Has a vague idea of what the dilemma is.		- Correctly identifies the dilemma, including some pertinent facts.		- Correctly identifies the dilemma, including most of the pertinent facts.	
	- Is uncertain about what decision needs to be made.		- Identifies, but does not explain, the decision that needs to be made.		- Clearly explains the decision that needs to be made.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Considers stakeholders	- Is unsure who will be affected by the decision.		- Correctly identifies some of the individuals and groups who will be affected by the decision.		- Correctly identifies the individuals and groups who will be affected by the decision and why they will be affected.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Analyzes alternatives and consequences	- Begins to appraise the relevant facts and assumptions.		- Clearly explains at least two alternative courses of action.		- Clearly explains a number of alternative courses of action.	
	-Identifies one possible solution.		- Predicts some of the consequences to those alternatives.		- Evaluates each alternative based on the consequences to the various stakeholders identified.	
	1	2	3	4	5	6
	Developing		**Proficient**		**Accomplished**	
Recommends an appropriate course of action	- Has difficulty identifying an appropriate course of action.		- Suggests a specific course of action.		- Suggests a specific course of action.	
	- Lacks an objective evaluation of alternatives.		- Shows some effort to objectively evaluate alternatives; weighing of factors is unclear.		- Clarifies values used and trade-offs made in reaching the recommendation.	
	1	2	3	4	5	6

NONTRADITIONAL ADULT MASTERS DEGREE STUDENTS AND THEIR CHOICE OF PROGRAM OF STUDY

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ABSTRACT

The present study examines nontraditional, adult graduate students' demographic profile and relates this to their enrollment in a graduate program of study. We survey 407 students enrolled in either a MBA, MHA, MSL or a combination program offered by a Southern university at two different campuses. Our findings show greater diversity than earlier research and greater diversity when compared to other area institutions. Our findings are useful to academicians and employers wanting to know the demographic profile of nontraditional business, health care, and leadership graduate students and how this relates to their program of study.

INTRODUCTION

According to the American Council on Education (2006), it is estimated that more than 40 percent of students enrolled in degree granting programs in higher education are nontraditional, adult students, age 25 or older. Of these students, 6 million are entering graduate school as working adults. Yet, there has been surprisingly little research done on understanding the demographics and profiles of the working adult graduate student (Aslanian, 2001) or their choice of program of study. This research is needed as these students have a distinctly different profile than those students pursuing a graduate degree immediately following completion of an undergraduate degree, with an increasing number of colleges offering courses and programs aimed at these nontraditional students.

The primary rationale of the study is to investigate potential relationship(s) among student demographics and the program of study of adults entering an evening graduate health administration, leadership, or general business degree program. Understanding the demographics and profiles of these adult students is valuable information for university administrators and program directors allowing them to concentrate their marketing and recruitment efforts on "…developing and maintaining a strategic fit between the institution's goals and capabilities and its changing marketing opportunities" (Kotler and Fox, 1985). It may

also allow those responsible for instruction to better craft the curriculum to meet the needs of this population. Furthermore, it may allow employers to better understand which types of employees are seeking additional education, what the managerial workforce will look like in the future, and anticipate changes in organizational behavior and psychology. Thus, the specific goals of this study are to (a) identify and put forth a profile of these adult students and their characteristics, and (b) explore the potential relationship among demographic variables on the program of study choice of these students.

To induce our study, we surveyed all nontraditional adult graduate students in the College of Business at a ***Southern Association of Colleges and Schools*** accredited private university with an established academic reputation in excess of one hundred years, pursuing a program of study of either a Master of Health Administration (MHA), Master of Business Administration (MBA), Master of Science in Leadership and Organizational Change (MSL), MBA/MHA combination, or MBA/MSL combination with respect to personal demographics. We then use multinomial logistic regression (MLR), to identify potential relationships among selected demographic variables and the program of study (e.g. MHA, MBA, MSL). By collecting and examining this original data, we endeavor to add to the body of knowledge regarding adult student profiles and their relationships to programs of study that have been overlooked in previous research specifically related to mature students pursuing graduate education in business disciplines.

LITERATURE REVIEW

As early as the 1960s, researchers began to realize there was a difference between traditional and nontraditional college students. Houle (1961) was the first to identify differing motivations of adult students. These orientations were named "Houle's Typology." Prior to Houle's research, no previous research examined constructs outside the field of education (Courtney, 1992). The majority of work by other researchers on adult students extended Houle's work on motivational factors. These relate to factors such as intrinsic and extrinsic motivation (e.g. Deci, 1971; Vallerand, 1997), the interaction of participants (e.g. Grotelueschen and Caulley, 1977), and the "chain of responses" (e.g. Cross, 1981), but are not of direct interest to the present study.

As the number of nontraditional students began to grow, interest increased in identifying traits and profiles of the nontraditional student (Courtney, 1992). As exemplified by other research, i.e. Gerlich, Turner, and Gopalan (2007), we feel it judicious for our study to examine the possible effects of race on other potentially economically driven decisions of students, such as the decision to enroll in a program of graduate study.

Aslanian and Brickell (1980) presented a study of nearly 2,000 students age 25 and older currently involved in continuing education as nontraditional students. While the focus of the

study was to indentify triggers resulting in adults continuing their education, there also was significant information on the profiles of these students.

Findings from Aslanian and Brickell's (1980) study indicated that the largest percentage of nontraditional students were age 25 to 39 (50%), and age 40-59 (29%). Marital status revealed 67 percent of the students were married, 20 percent were divorced or separated, 9 percent were widowed and 12 percent were single. Number of children showed 23 percent had no children at home, 16 percent had one child, 26 percent had two children, and 33 percent had three or more children. Race was largely white (87%), with 8 percent black, 2 percent Hispanic, and 2 percent other. Sex was fairly evenly split with 48 percent male and 52 percent female.

Building on the previous study, Aslanian (2001) surveyed 1,500 adults aged 25 or older that were involved in continuing education as a nontraditional student. In this study, graduate adult students were separated yielding specific results for this segment. These results indicated that 19 percent of the students were age 25-29, 15 percent were 30-34, 15 percent were 35-39, 20 percent were 40-44, 15 percent were 45-49, 15 percent were 50-54, and 4 percent were 55 or older. There were 69 percent females and 31 percent males, and 90 percent were white with 3 percent African American, and 6 percent other. The respondents indicated marital status of 67 percent married, 24 percent single, 8 percent divorced, and 1 percent widowed.

More recently, The National Center for Educational Statistics surveyed more than 17,000 adults enrolled in a university or degree program for work related reasons, although the sample was not segmented to show only students in graduate school (O'Donnell, 2005). Demographic factors for this group showed the majority of students (49.4%) were age 16-24, 27.7 percent were 25-34, and 22.9 percent were 35-64. Gender was relatively even with 44.3 percent males and 55.7 percent females. Race indicated 70.2 percent white, 12.7 percent black, and 17.1 percent other. From the respondents, 33.3 percent were married, and 60.8 percent were single or unmarried living with a partner and 5.8 percent were widowed. Finally, 79 percent indicated having no children.

Similarly, the American Council on Education (2006) captured demographic and other data on adult learners. This longitudinal study indicated that adult learners were expected to grow from 28 percent of the student population in 1970 to a projected 40 percent in 2014. Full time graduate students age 25 or older grew from 20.2 percent of the U.S. student population in 1970 to 28.7 percent in 2002, while part-time graduate students age 25 or older held relatively steady from 52.0 percent to 49.4 percent. Adult college students in general have also changed. In 1970, females age 25 or older were 10.2 percent of the student population but are projected to be 24.0 percent in 2010. Male students age 25 or older were 17.6 percent of the student population in 1970 but are projected to be 14.8 percent in 2010. Ethnicity has also changed over time. Students age 25 or older in 1964 were 1 percent African American and 15.6 percent of the total student population was white. This increased to 6.6 percent and 31.5 percent, respectively, in 2002. Overall, the research shows a changing demographic mix in adult students.

Secondary data was obtained in order to examine the demographics of select populations in the U.S., state, and local areas to allow a comparison of the demographic profile of the residents. According to the U.S. Census Bureau (2010), demographics indicate the U.S. population consists of 79.7% white and 12.9% black residents, while the state in this study has 73.7% white and 21.6% black residents, respectively. Education-portal.com (2010) reports that students currently enrolled in the state's university system show a much lower population of non-white students with 9.6% and 10.8% black that the state's two flagship university campuses.

While each of these studies' demographic data of adult students is worthy of note, most do not specifically target working adults returning to graduate school, and none specifically focus on master's degrees in healthcare administration or business related fields. Thus, additional research is needed to identify specific traits found in this population segment and relate them to choice of programs of study. Additional research is also needed in attempting to understand why the private university sample in this study had a much larger proportion of non-white students as compared to the state's demographics and demographics from other nearby state universities.

METHODOLOGY

As our overall interest is in understanding the demographic profile and in discerning if there are differences between the demographic profile and the program of study of adults enrolling in an evening graduate degree program, we conducted a survey in 2009 on enrolled adult students currently attending an evening graduate degree program at a Southern university. The university's College of Business offers five graduate degrees: Master of Health Administration (MHA), Master of Business Administration (MBA), Master of Science in Leadership and Organizational Change (MSL), and two combination dual degrees of MBA/MHA, and MBA/MSL.

All five of these School of Business graduate degrees are part-time, evening programs and are offered on two campuses located in two different metropolitan areas. The university does not have a full-time master's degree program. The MBA, MHA, and MSL degree are 36-hour master's degrees and the MBA/MHA and MBA/MSL degrees are 54-hour programs. Students attend classes in the evenings and/or online and typically take a load of two courses per semester, three semesters per year. With this schedule, students are able to complete an MBA, MHA, or MSL degree in 24 calendar months, and the MBA/MHA or MBA/MSL dual degrees in 36 months. Students in these programs may speed up or slow down their progress; however, they are allowed no more than seven years to complete their program.

For our demographic profile we follow Creswell (2005) and include: gender, age, marital status, race, ethnicity, income level, and number of children currently in the household. For our multinomial logistic regression, we used the above variables for the demographic profile as our independent variables. The dependent variable was the program of study (e.g. MHA, MBA,

MSL, or combination). Respondents self-reported their program of study and demographic information.

RESULTS

Descriptive characteristics

The final sample number of students participating in the study was 407. All of the 407 surveys returned were complete and useable. At the time of this study, there was a population of 652 students enrolled in one of the five graduate degree programs included in this study. This yielded a response or capture rate of 62 percent. All of the respondents were students pursuing a Masters of Health Administration, Masters of Business Administration, Masters of Science in Leadership and Organizational Change, Masters of Business Administration/Master of Health Administration, or Masters of Business Administration/Masters of Science in Leadership and Organizational Change degree.

Table 1 details the demographic characteristics of the sample. The sample consisted of 118 males and 289 females. The majority of the respondents (339) fell in the age groups between 26 and 50. The variable "marital status" revealed 137 were single, 213 were married, and 54 were divorced. The racial makeup of the sample consisted of 205 white students (50.4%), 185 black or African-American students (45.5%), and 17 Asian students (4.2%). The vast majority of the sample (98%) was reported as non-Hispanic ethnicity. The sample reported income between $40,001 and $60,000 the most frequently (29.2%), followed by $60,001 to $80,000, (19.0%). The largest percentage of the sample (46.9%) had no children at home. Homes with one or two children were reported in 20.6 percent and 20.9 percent of the sample, respectively, and 11.6 percent of the sample reported three or more children in the home. Finally, the sample consisted of 143 MBA's, 123 MHA's, 31 MSL's, 80 MBA/MHA's, and 30 MBA/MSL's.

Table 1: Demographic Characteristics (gender, age, marital status, race, ethnicity, income level, number of children, and program of study) of the Sample

Demographic And Program Variables	Frequency	Valid Percent
Gender	n=407	
Male	118	29.0%
Female	289	71.0%
Age	n=407	
22-25	35	8.6%
26-30	67	16.5%
31-35	75	18.4%
36-40	83	20.5%
41-45	71	17.4%
46-50	44	10.8%

Table 1: Demographic Characteristics (gender, age, marital status, race, ethnicity, income level, number of children, and program of study) of the Sample		
Demographic And Program Variables	Frequency	Valid Percent
51-55	28	6.9%
56-60	3	.7%
61-65	1	.2%
Marital Status	n=407	
Single	137	33.7%
Married	213	52.2%
Divorced	54	13.3%
Widowed	3	.7%
Race	n=407	
White	205	50.4%
Black	185	45.5%
Asian	17	4.2%
American Indian or Alaska Native	0	0.0%
Native Hawaiian or other Pacific Islander	0	0.0%
Ethnicity	N=407	
Hispanic	8	2.0%
Non-Hispanic	399	98.0%
Income	n=407	
$20,000 or less	28	6.9%
$20,001 - $40,000	66	16.2%
$40,001 - $60,000	119	29.2%
$60,001 - $80,000	81	19.9%
$80,001 - $100,000	61	15.0%
>$100,001	52	12.8%
# of Children in the Household	n=407	
0	191	46.9%
1	84	20.6%
2	85	20.9%
3	35	8.6%
4	10	2.5%
5+	2	.5%
Program of Study	n=407	
MBA	143	35.1%
MHA	123	30.2%
MSL	31	7.6%
MBA/MHA	80	19.7%
MBA/MSL	30	7.4%
Note. Income is individual income, not household income.		

Descriptive statistics were also used to examine any differences in the sample by gender. The program of study variable was compared by gender to determine the profile of students for each program. Table 2 shows these results and demonstrates that the MBA consists of a larger percentage of males and the MHA and MBA/MHA have a larger percentage of females. The other programs are approximately evenly spread among males and females.

Table 2 : Demographic Characteristics (age, marital status, race, ethnicity, income level, number of children, and program of study): Total Sample and by Gender

Demographic Variables	Male Frequency	Male Percent	Female Frequency	Female Percent	Total Sample Frequency	Total Sample Valid Percent
Age	n=118		n=289		n=407	
22-25	12	10.2%	23	8.0%	35	8.6%
26-30	19	16.1%	48	16.6%	67	16.5%
31-35	27	22.9%	48	16.6%	75	18.4%
36-40	23	19.5%	60	20.8%	83	20.4%
41-45	18	15.3%	53	18.3%	71	17.4%
46-50	8	6.8%	36	12.5%	44	10.9%
51-55	10	8.4%	18	6.2%	28	6.9%
56-60	1	.8%	2	.7%	3	.7%
61-65	0	.0%	1	.3%	1	.2%
Marital Status	n=118		n=289		n=407	
Single	37	31.4%	100	34.6%	137	33.7%
Married	75	63.5%	138	47.8%	213	52.3%
Divorced	6	5.1%	48	16.6%	54	13.3%
Widowed	0	.0%	3	1.0%	3	.7%
Race	n=118		n=289		n=407	
White	66	55.9%	139	48.1%	205	50.4%
Black or African American	44	37.3%	141	48.8%	185	45.5%
Asian	8	6.8%	9	3.1%	17	4.1%
American Indian or Alaska Native	0	.0%	0	.0%	0	.0%
Native Hawaiian or Other Pacific Islander	0	.0%	0	.0%	0	.0%
Ethnicity	n=118		n=289			n=407
Hispanic or Latino	1	.9%	7	2.4%	8	2.0%
Non-Hispanic or Latino	117	99.1%	282	97.6%	399	98.0%
Income	n=118		n=289		n=407	
$20,000 or less	10	8.5%	18	6.2%	28	6.9%
$20,001 - $40,000	19	16.1%	47	16.3%	66	16.2%
$40,001 - $60,000	23	19.5%	96	33.2%	119	29.2%
$60,001 - $80,000	25	21.2%	56	19.4%	81	19.9%
$80,001 -$100,000	17	14.4%	44	15.2%	61	15.0%
$100,001 and over	24	20.3%	28	9.7%	52	12.8%

Table 2 : Demographic Characteristics (age, marital status, race, ethnicity, income level, number of children, and program of study): Total Sample and by Gender						
Demographic Variables	Male Frequency	Male Percent	Female Frequency	Female Percent	Total Sample Frequency	Total Sample Valid Percent
Number of Children in Household	n=118		n=289		n=407	
0	52	44.2%	139	48.2%	191	46.9%
1	21	17.8%	63	21.8%	84	20.6%
2	30	25.4%	55	19.0%	85	20.9%
3	9	7.6%	26	9.0%	35	8.6%
4	5	4.2%	5	1.7%	10	2.5%
5+	1	.8%	1	.3%	2	.5%
Program of Study	n=118		n=289		n=407	
MBA	59	50.0%	84	29.1%	143	35.1%
MHA	16	13.6%	107	37.0%	123	30.2%
MSL	15	12.7%	16	5.5%	31	7.6%
MBA/MHA	20	16.9%	60	20.8%	80	19.7%
MBA/MSL	8	6.8%	22	7.6%	30	7.4%

In Table 3 we examined the demographic variables by program to determine if there were any significant differences across degree programs. Age was evenly distributed across programs with no significant differences. In all five programs, most students ranged in age from 22 to 50. The MBA had the highest concentration (22.3%) of students in the age range 26-30. The MHA had the highest concentration in the age group 41-45 with 24.4 percent. The MSL and MBA/MHA both had the largest age group of 36-40 with 25.5 percent and 26.1 percent, respectively. Finally, the MBA/MSL age group most represented was 31-35 (17.5%).

Marital status was also compared by program. For MBA, 50.3 percent of the students were single compared with 19.5 percent of the MHA, 38.7 percent of the MSL, and 26.3 percent and 26.7 percent for the MBA/MHA and MBA/MSL, respectively. Similarly, the MHA and MBA/MHA had the highest representation of married students with 63.4 percent and 64.9 percent, respectively. There were 25.8 percent divorced students in the MSL program.

Race was evenly distributed across the programs. There were few Asian students, 17, and these were most represented in the MBA and MHA programs. The MBA consisted of 48.3 percent white and 46.8 percent black or African American. The MHA was 48.7 percent white and 48.0 percent black or African American. The MSL had 45.2 percent white and 48.3 percent black or African American. The MBA/MHA consisted of 61.2 percent white and 35.0 percent black or African American. Finally, the MBA/MSL was 43.3 percent white and 53.4 percent black. There were no representations of American Indian or Alaska Native or Native Hawaiian or other Pacific Islander. Ethnicity revealed only 3.3 percent of the sample were Hispanic or Latino (8 respondents), and these eight were represented in every program except for the MSL.

Income was next compared against the five programs. For the MBA, the largest income group was $40,001 to $60,000 with 34.2 percent of the sample. The MHA group had 26.0 percent of the respondents with incomes of $40,001 to $60,000 and 26.9 percent of incomes of $60,001 to $80,000. The MSL group reported the largest income groups of $20,001 to $40,000 (22.6%), and $40,001 to $60,000 (22.6%). The dual degrees MBA/MHA and MBA/MSL had the largest income group of $40,001 to $60,000, 26.2 percent and 33.3 percent respectively.

Finally, the number of children living in the respondents' household was compared by program. The MBA had a large majority of zero children (60.8%). The sample showed MBA students reported 15.4 percent with one child and 16.8 percent with two children. The MHA program also had the largest group (39.8%) with zero children. There were also 22.0 percent with one child, 21.1 percent with two children, and 13.0 percent with three children in the MHA program. The MSL had a majority of 58.1 percent with no children and 22.6 percent with one child. The MBA/MHA had 31.3 percent with zero children, 27.4 percent with one child, and 28.7 percent with two children. Finally, the MBA/MSL had 39.9 percent with zero children, 20.0 percent with one child, and 26.7 percent with two children. The data from this study indicate that demographic factors of gender, age, and marital status are fairly consistent the findings of Aslanian (2001) and Aslanian and Brickell (1980).

Table 3: Demographic Characteristics (age, marital status, race, ethnicity, income level, number of children, and program of study): Total Sample by Program

Demographic Variables	MBA	Percent of Program	MHA	Percent of Program	MSL	Percent of Program	MBA/MHA	Percent of Program	MBA/MSL	Percent of Program
Age	n=143		n=123		n=31		n=80		n=30	
22-25	24	16.8%	2	1.6%	3	9.7%	5	6.3%	1	3.3%
26-30	32	22.3%	19	15.4%	4	12.9%	9	11.3%	3	10.0%
31-35	28	19.6%	16	13.0%	6	19.4%	14	17.5%	11	36.7%
36-40	25	17.5%	20	16.3%	8	25.8%	21	26.1%	9	30.0%
41-45	19	13.3%	30	24.4%	5	16.1%	14	17.5%	3	10.0%
46-50	10	7.0%	17	13.8%	5	16.1%	10	12.5%	2	6.7%
51-55	5	3.5%	16	13.0%	0	.0%	6	7.5%	1	3.3%
56-60	0	.0%	2	1.6%	0	.0%	1	1.3%	0	.0%
61-65	0	.0%	1	.8%	0	.0%	0	.0%	0	.0%
Marital Status	n=143		n=123		n=31		n=80		n=30	
Single	72	50.3%	24	19.5%	12	38.7%	21	26.3%	8	26.7%
Married	55	38.5%	78	63.4%	11	35.5%	52	64.9%	17	56.6%
Divorced	14	9.8%	21	17.1%	8	25.8%	6	7.5%	5	16.7%
Widowed	2	1.4%	0	.0%	0	.0%	1	1.3%	0	.0%
Race	n=143		n=123		n=31		n=80		n=30	
White	69	48.3%	60	48.7%	14	45.2%	49	61.2%	13	43.3%
Black or African American	67	46.8%	59	48.0%	15	48.3%	28	35.0%	16	53.4%
Asian	7	4.9%	4	3.3%	2	6.5%	3	3.8%	1	3.3%

Table 3: Demographic Characteristics (age, marital status, race, ethnicity, income level, number of children, and program of study): Total Sample by Program										
Demographic Variables	MBA	Percent of Program	MHA	Percent of Program	MSL	Percent of Program	MBA/MHA	Percent of Program	MBA/MSL	Percent of Program
American Indian or Alaska Native	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
Native Hawaiian or Other Pacific Islander	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
Ethnicity										
Hispanic or Latino	5	3.5%	1	.8%	0	.0%	1	1.2%	1	3.3%
Non-Hispanic or Latino	138	96.5%	122	99.2%	31	100%	79	98.8%	29	96.7%
Income										
<$20,000	22	15.4%	2	1.6%	2	6.5%	1	1.3%	1	3.4%
$20,001 - $40,000	23	16.1%	18	14.6%	7	22.6%	14	17.5%	4	13.3%
$40,001 - $60,000	49	34.2%	32	26.0%	7	22.6%	21	26.2%	10	33.3%
$60,001 - $80,000	24	16.8%	33	26.9%	6	19.3%	12	15.0%	6	20.0%
$80,001 - $100,000	16	11.2%	21	17.1%	4	12.9%	17	21.2%	3	10.0%
>$100,001	9	6.3%	17	13.8%	5	16.1%	15	18.8%	6	20.0%
No. Children in Household										
0	87	60.8%	49	39.8%	18	58.1%	25	31.3%	12	39.9%
1	22	15.4%	27	22.0%	7	22.6%	22	27.4%	6	20.0%
2	24	16.8%	26	21.1%	4	12.9%	23	28.7%	8	26.7%
3	8	5.6%	16	13.0%	1	3.2%	8	10.0%	2	6.7%
4	2	1.4%	4	3.3%	1	3.2%	1	1.3%	2	6.7%
5+	0	.0%	1	.8%	0	.0%	1	1.3%	0	.0%

A multinomial logistic regression (MLR) was used to test for potential relationships among demographic variables and the likelihood of choosing the MBA, MHA, MBA/MHA, or MBA and MBA/MSL graduate programs. Multinomial logistic regression is useful for analysis in which one wants to be able to classify subjects based on values of a set of indicator variables (Spicer, 2005). MLR was chosen as the methodology for this study since the dependent variable is categorical rather than dichotomous, resulting in multiple regressions being an inappropriate methodology for this analysis. MLR is similar to logistic regression, but it is more general because the dependent variable is not restricted to two categories. MLR produces Exp (B) (Exponential Beta) which is also known as the odds ratio. Odds ratios that are positive indicate that for every unit increase in the variable being measured, the odds of choosing the category being measured increases by that amount. Wright (1995) recommends a minimum of 50 cases per independent variable for reliable results using MLR. The MSL and MBA/MSL categories had fewer than 50 respondents each (31 and 30, respectively) and were, therefore, combined into a single variable called MSL for this analysis.

In using MLR, the researcher must choose a base category for each analysis. With the dependent variable (e.g. program of study), there are four categories. Using MBA as the base category in the first analysis, we analyzed the comparisons of MBA vs. MHA, MBA vs. MSL,

and MBA vs. MBA/MHA. The next analysis was run with MHA as the base category giving the analysis of MHA vs. MSL, and MHA vs. MBA/MHA. The final run selected MSL as the base category which gave the analysis of MSL vs. MBA/MHA. These multiple iterations allowed the examination of the six comparisons possible within four categories of the dependent variable.

Similarly, with the categorical independent variables, multiple runs with MLR were necessary to examine all possible combinations. Age and income were entered into the equation as continuous variables for ease of analysis and interpretation. Both were entered as midpoints of the ranges and dummy variables were not needed for the analysis. The categorical dependent variables "Number of children" and "Marital Status" were entered as dummy variables before being entered into the model. With multiple combinations possible, multiple iterations were run to evaluate each possible outcome. In addition, some of the categories for "Number of children" and "Marital Status" has fewer than 50 cases, and were combined. "Number of children" was combined into four categories: zero, one, two, and three or more. "Marital Status" was combined into three categories: single, married, and divorced or widowed.

For "Number of children," zero was the first base category examining the relationship between zero vs. one, zero vs. two, and zero vs. three or more. The next MLR run selected one as the base category giving the comparison of the group one vs. two, and one vs. three or more. The final run selected two as the base yielding the final possible combination of two vs. three or more.

Ethnicity was removed as a variable as it contained only eight non-Hispanic respondents. In addition, race was combined into two categories: white and non-white also due to the very low or no representation of Asian, American Indian, and Native Hawaiian in the sample.

The MLR analysis results indicated that the model fit the data ($p \leq .000$), with the demographic variables explaining between .104 and .260 percent of why individuals chose different programs of study. Table 4 shows the model information and Pseudo R-Square results.

Table 4: Model Fitting Information and Pseudo R-Square Results

Model Fitting Information	-2 Log Likelihood	Likelihood Ratio Tests		
		Chi Square	df	Sig.
Intercept Only	938.03			
Final	825.21	112.83	27	.000
Pseudo R-Square				
Cox and Snell	.242			
Nagelkerke	.260			
McFadden	.104			

The independent variable "gender" was significant in some MLR rotations. The odds of a male choosing MHA over MBA were 85 percent lower than a female choosing MHA over MBA. Similarly, the odds of a male choosing MBA/MHA over the MBA were 69 percent lower than a female choosing MBA/MHA over MBA. Finally, the odds of a male choosing MSL over

MHA were 5.61 times higher than a female choosing MSL over MHA. This was expected with the large number of females compared to males within the MHA program.

The independent variable of age was also a strong predictor. For every increase in age, or the older a student, the odds are 1.06 times higher of choosing MHA over MBA. For every increase in age, students have six percent lower odds of choosing MSL over MHA.

The independent variable marital status was a strong predictor in some comparisons. The odds of married students choosing MSL over MHA were 65 percent lower than the odds for divorced students. In addition, the odds of married students choosing MBA/MHA over MSL were 5.05 time higher than the odds for divorced students.

Regarding the independent variable race, the odds for whites were 1.88 times higher of selecting MBA/MHA over MBA than the odds for non-whites. The odds of whites choosing MBA/MHA over MSL were 2.33 times higher that the odds for non-whites.

Finally, the independent variable "Number of Children Living in Household" yielded some significant findings. The odds of students with one or two children selecting MBA/MHA over MBA were 3.11 and 2.82 times higher, respectively, than the odds for students with zero children. The odds of students with two children selecting the MBA/MHA over the MHA was 2.43 times higher than the odds for students with zero children. Conversely, the odds of students with two children choosing the MBA/MHA over the MHA were 56 percent lower than the odds of students with zero children. Finally, the odds of students with one and two children vs. students with zero children were 2.79 and 2.82 times higher (respectively) of choosing the MBA/MHA over the MBA/MSL. Tables 5 through 7 show the detailed results of the MLR analyses.

Table 5: Multinomial Logistic Regression, Odds Ratio, and Likelihood Ratio Tests for Demographics Impact on Program Choice with MBA as Base

Variable	*B*	SE	Wald	*p*	Odds Ratio
MHA Intercept	-2.95	.95	9.68	.002	
Male vs. Female	-1.91	.36	28.80	**≤.000**	**.15**
Age	.06	.02	8.62	**.003**	**1.06**
Single vs. Divorced	-.17	.50	.11	.737	.85
Married vs. Divorced	.58	.42	1.97	.161	1.79
Single vs. Married	-.69	.41	2.82	.093	.50
White vs. non-white	.05	.29	.03	.871	1.05
Income	.01	.01	3.01	.083	1.01
1 Child vs. 0	.31	.39	.64	.422	1.37
2 Children vs. 0	.15	.41	.14	.714	1.16
3 Children vs. 0	.68	.49	1.97	.160	1.98
2 Children vs. 1	-.31	.39	.09	.429	.74
3 Children vs. 1	.41	.52	.64	.424	1.51
3 Children vs. 2	.55	.51	1.15	.284	1.73

Note: MBA is base; MHA intercept

Table 5: Multinomial Logistic Regression, Odds Ratio, and Likelihood Ratio Tests for Demographics Impact on Program Choice with MBA as Base					
Variable	***B***	**SE**	**Wald**	***p***	**Odds Ratio**
MBA/MSL & MSL Intercept	-.87	1.08	.65	.419	
Male vs. Female	-.184	.34	.30	.585	.83
Age	-.00	.02	.00	.954	1.06
Single vs. Divorced	-.74	.50	1.74	.188	.48
Married vs. Divorced	-.48	.47	1.03	.311	.62
Single vs. Married	-.22	.47	.21	.645	.80
White vs. non-white	-.17	.32	.28	.594	.84
Income	.01	.01	2.88	.089	1.01
1 Child vs. 0	.11	.44	.06	.810	1.12
2 Children vs. 0	.00	.47	.00	.996	1.00
3 Children vs. 0	.19	.61	.09	.761	1.20
2 Children vs. 1	-.09	.51	.03	.856	.91
3 Children vs. 1	.11	.65	.03	.869	1.11
3 Children vs. 2	.20	.64	.01	.754	1.22
Note: MBA is base; MBA/MSL and MSL intercept.					
MBA/MHA Intercept	-4.00	1.11	13.02	$\leq$.000	
Male vs. Female	-1.17	.35	11.41	**.001**	**.31**
Age	.04	.02	2.56	.110	1.04
Single vs. Divorced	.88	.62	2.03	.155	2.42
Married vs. Divorced	.96	.53	3.32	.068	2.61
Single vs. Married	-.046	.46	.01	.920	.96
White vs. non-white	.63	.31	4.02	**.045**	**1.88**
Income	.01	.01	3.41	.065	1.01
1 Child vs. 0	1.14	.43	6.86	**.009**	**3.11**
2 Children vs. 0	1.04	.45	5.23	**.022**	**2.82**
3 Children vs. 0	.93	.57	2.69	.101	2.54
2 Children vs. 1	-.083	.44	.04	.851	.92
3 Children vs. 1	-.18	.57	.10	.747	.83
3 Children vs. 2	-.10	.56	.03	.857	.91
Note: MBA is base; MBA/MHA intercept					

Table 6: Multinomial Logistic Regression, Odds Ratio, and Likelihood Ratio Tests for Demographics Impact on Program Choice with MHA as Base					
Variable	***B***	**SE**	**Wald**	***p***	**Odds Ratio**
MBA/MSL and MSL Intercept	.208	1.14	3.36	.067	
Male vs. Female	1.73	.41	17.99	$\leq$**.000**	**5.61**
Age	-.06	.02	5.60	**.014**	**.94**
Single vs. Divorced	-.57	.58	.95	.329	.57
Married vs. Divorced	-1.06	.46	5.31	**.021**	**.35**
Single vs. Married	.47	.50	.86	.354	1.60
White vs. non-white	-.22	.34	.41	.523	.80

Table 6: Multinomial Logistic Regression, Odds Ratio, and Likelihood Ratio Tests for Demographics Impact on Program Choice with MHA as Base					
Variable	***B***	**SE**	**Wald**	***p***	**Odds Ratio**
Income	.00	.01	.03	.861	1.00
1 Child vs. 0	-.20	.46	.20	.658	.82
2 Children vs. 0	-.15	.48	.09	.763	.86
3 Children vs. 0	-.50	.58	.74	.388	.61
2 Children vs. 1	.04	.51	.01	.939	1.04
3 Children vs. 1	-.31	.61	.26	.612	.74
3 Children vs. 2	-.35	.60	.33	.565	.71
Note: MHA is base; MBA/MSL and MSL intercept					
MBA/MHA Intercept	-1.06	1.10	.92	.338	
Male vs. Female	.74	.39	3.59	.058	2.09
Age	-.02	.02	1.12	.289	.98
Single vs. Divorced	1.05	.62	2.90	.088	2.86
Married vs. Divorced	.38	.50	.59	.444	1.46
Single vs. Married	.64	.47	1.87	.171	1.90
White vs. non-white	.58	.31	3.47	.063	1.79
Income	.00	.01	.06	.802	1.00
1 Child vs. 0	.82	.42	3.77	.052	2.28
2 Children vs. 0	.89	.44	4.07	**.044**	**2.43**
3 Children vs. 0	.25	.50	.24	.623	1.28
2 Children vs. 1	.05	.42	.91	.908	1.05
3 Children vs. 1	-.60	.50	1.45	.229	.55
3 Children vs. 2	-.65	.49	1.73	.188	.52
Note: MHA is base; MBA/MHA intercept.					

Table 7: Multinomial Logistic Regression, Odds Ratio, and Likelihood Ratio Tests for Demographics Impact on Program Choice with MSL as Base					
Variable	***B***	**SE**	**Wald**	***p***	**Odds Ratio**
MBA/MHA Intercept	-3.13	1.28	6.03	.014	
Male vs. Female	-.99	.40	6.05	**.014**	**.37**
Age	.04	.03	1.96	.162	1.04
Single vs. Divorced	1.69	.69	5.56	**.018**	**5.05**
Married vs. Divorced	1.44	.56	6.54	**.011**	**4.22**
Single vs. Married	.17	.55	.10	.753	1.19
White vs. non-white	.80	.37	4.71	**.030**	**2.23**
Income	.00	.01	.00	.964	1.00
1 Child vs. 0	1.03	.50	4.14	**.042**	**2.79**
2 Children vs. 0	1.04	.53	3.83	**.050**	**2.82**
3 Children vs. 0	.745	.65	1.32	.252	2.11
2 Children vs. 1	.01	.52	.00	.986	1.01
3 Children vs. 1	-.29	.65	.20	.658	.75
3 Children vs. 2	-.30	.65	.21	.644	.74
Note: MBA/MSL and MSL is base; MBA/MHA intercept					

DISCUSSION

Our study is primarily interested in knowing if there are differences between the demographic profile and the program of study of adults enrolling in an evening graduate degree program. We found moderate differences in demographics across the five programs. The largest program represented was the MBA with 143 student respondents followed closely by the MHA with 123 student respondents. MBA students were most represented by the following categories: single, black or African American, female, non-Hispanic or Latino, between the ages of 26 and 30, earning between $20,001 and $40,000, and with zero children. MHA students were most represented in the following categories: married, white, female, non-Hispanic or Latino, between the ages of 41 and 45, earning between $60,001 and $80,000, with zero children living in the household. MSL students were most represented by the following categories: single, black or African American, female, non-Hispanic or Latino, between the ages of 36 and 40, earning between $20,001 and $60,000, with zero children at home.

The MBA/MHA students were most represented by the following categories: married, white, female, non-Hispanic or Latino, between the ages of 36 and 40, earning between $40,001 and $60,000, with zero children at home. Finally, the average MBA/MSL students were most represented by the following categories: married, black or African American, female, non-Hispanic or Latino, between the ages of 31 and 35, earning between $40,001 and $60,000, with zero children living at home.

Females outnumbered males 289 to 118 overall. The largest age group consisted of ages 36 to 40. More than half (52.2%) of the students were married and were evenly distributed by race. The sample was overwhelmingly non-Hispanic or Latino (98.0%). The largest income group was $40,001 to $60,000. Most students (46.9%) had no children living at home.

These findings varied when comparing individual program by gender. The MBA group was most represented by the following categories: single, white, male, non-Hispanic or Latino, between the ages of 26 and 30, earning between $40,001 and $60,000 with zero children at home. The MHA group was most represented by married, black or African American, female, non-Hispanic or Latino, between the ages of 41 and 45, earning between $60,001 and $80,000, with zero children at home. The MSL group was most represented by single, black or African American, females, non-Hispanic or Latino, between the ages of 36 and 40, earning between $20,001 and $60,000, with zero children.

The MBA/MHA group was most represented by married, white, females, non-Hispanic or Latino, between the ages of 36 and 40, earning between $40,001 and $60,000, with zero children. Finally, the MBA/MSL group was most represented by married, black of African American, female, between the ages of 31 and 35, earning between $40,001 and $60,000, with zero children.

The demographic profile from this study suggests that students interested in the MBA program enter a part-time MBA program at an earlier age, and earlier in their career when

compared to the other programs. This information is valuable to MBA administrators and instructors in designing curricula that may be more interesting and attractive to potential and current students in this age bracket. Additional research is needed to determine if these results are consistent at other institutions.

These findings also provided an important profile of graduate students from this population in regard to demographics. This information is critical for university administrators to understand the constantly changing demographics of not only the current students, but also potential students. This information may enable targeted marketing efforts to reach prospects that are most likely to enroll in a part-time graduate program.

In the survey of adult graduate students by Aslanian (2001), the typical profile of adult graduate students indicated the majority were 40 years of age, female, married, and white, with income of $56,000. This was similar to the overall findings of this study which indicated the majority of students were between the ages of 36 and 40, female, white, with income between $40,001 and $60,000. This suggests that the profile of graduate students may have remained consistent over the past nine years and may also be applicable to other graduate degree programs that were not analyzed in this research study.

However, results of this study indicate that differences do exist across the program of study with regard to demographics. Different aspects of the programs of study appear to appeal to specific demographic groups. This knowledge will enable administrators to modify courses or curricula for these specific areas of study. It also shows programs where there is opportunity lost (i.e., the types of students that other programs of study are attracting).

In addition, the findings of this study indicate that this institution is able to attract a more diverse racial population when compared to the area population demographics and demographics from other area schools. While this fact appears to be unintentional, further study is warranted to understand why this institution's students are much more diverse than others.

Our multinomial logistic regression was used to test for a potential relationship of demographic variables on the log-odds ratio being enrolled in one graduate program over another. The results (e.g. Tables 5-7) of the analyses provided support for this.

The variables with significant predictive value were gender, age, race, number of children, and marital status. Males were much less likely to choose the MHA and MBA/MHA over the MBA. The data supported this assumption with a large percentage of women as compared to men enrolled in the MHA and MBA/MHA program. Age was also a good predictor indicating that for every increase in the age categories, the respondents had odds 1.06 times higher of choosing the MHA over the MBA. Married vs. divorced students had odds 65 percent lower of choosing MSL over MHA and had odds 5.05 times higher of choosing MBA/MHA over the MSL.

White students vs. non-white students had odds 1.88 times higher of selecting MBA/MHA over MBA and had odds 2.33 times higher of choosing MBA/MHA over the MSL. Students with one or two children vs. zero children had odds 3.11 times and 2.82 times higher of

selecting the MBA/MHA over the MBA. Student with two children vs. zero had odds 2.43 times higher of choosing the MBA/MHA over the MHA. Conversely, students with two children vs. one child had odds 56 percent lower of choosing MBA/MHA over MHA. And, students with one and two children vs. zero had odds 2.79 and 2.82 times higher of choosing the MBA/MHA over the MSL.

These data suggest that females compared to males are much more likely than males to choose the MHA or MBA/MHA program. In addition, students with one or two children as compared to zero seem more likely to choose the MBA/MHA degree over the MHA and the MBA degree. This may suggest that older students with established families may decide to return for the dual degree as compared to students with no children. This is in conflict, however, with the demographic data that suggests the most frequently reported number of children in all programs was zero children. Further research is needed to determine if similar findings are similar from other graduate school samples.

These findings indicate some significant concentrations of specific demographic groups in particular programs. For example, females are much more represented in the MBA and MBA/MHA programs. This would suggest a significant opportunity for growth in this program by targeting and recruiting potential students with different demographic profiles. Administrators in colleges and universities can use this data to evaluate and compare enrollment profiles across various programs to develop specific growth strategies in disciplines underrepresented by certain groups.

Practical implications

There are several practical implications that can be derived from this research study. While the MLR analyses provide a new and unique application of scientific methods to gain insight with the parametric data, the descriptive statistics are equally powerful in the application to real world conditions and strategies.

College and university professors and administrators can use this study as a benchmark to compare other student populations, and to test for patterns or consistencies across programs. For example, several researchers (e.g. Grady, 2001; Lichtenstein, 2005; Myers, 2008) have noted that universities are strengthening their efforts with respect to diversity recruitment in MHA programs. With this information presented in this study, institutions of higher learning may then be able to focus marketing efforts on specific portions of the population to reach those most likely to enroll in a graduate degree program. For example, the data from this study shows a high concentration of single males with no children between the ages of 26 and 30. With this data, specific publications or events may be targeted to improve the recruiting efforts for new MBA students. We believe the data and insights presented in this study will be of significant value to universities which desire to increase the diversity of the students attracted to their graduate programs of study.

In addition, we believe that introducing a broader group of college and university administrators to the use of MLR may allow them to follow the example of this study and use multinomial logistic regression models to analyze prospect lists to determine which program that prospective students may be most likely to select, and from that data, make appropriate calls or suggestions to future students. The results also suggest that administrators understanding of factors such as race in choice of program in some instances, i.e. MBA students being most represented by the racial category black, may pose other recruiting and retention challenges that would otherwise not be apparent (Leverett, Parker and McDonald, 2007). These practical implications and use of current decision analytics methods can result in improved recruiting efficiency and effectiveness and also in maintaining an invigorating and stimulating master's degree program for current and future students.

In addition, the findings suggest that a possible niche exists with this institution's programs that may provide a differential competitive advantage that administrators may be able to capitalize on in increasing market share.

To summarize, our analyses found five important points:

1) The MBA and MBA/MHA programs are attended predominantly by females.
2) Racial diversity is more prevalent in our sample than earlier research and more diverse than the area population and demographics of other area colleges and universities.
3) Income appears to be consistent across all five graduate programs.
4) From the descriptive statistics data, it suggests that a majority of students attend graduate school at a time when no children are living in the household. This could include young adults enrolling prior to starting a family, or with older students returning after their children have left the home.
5) Students pursuing the MHA degree had a demographic profile indicating that they enrolled in their graduate program when, on average, they were older as compared to students in the other graduate programs at the university. In addition, the MHA students reported average incomes higher than the students in other graduate programs. This may suggest that in the MHA and health care discipline, students are entering this program at a later stage in their careers when compared to other graduate programs. Further research is suggested to test this finding.

Limitations

This study's sample is limited to one university in one state which may limit the ability to generalize the findings to the larger population of U.S. adult graduate students. This limitation is consistent with previous research on this subject. It was conducted in an unusual period of economic stress and uncertainty, 2009, which may have resulted in sample segments that were skewed. We do not account for current occupation (e.g. nursing, engineering, etc.). Due to a

small numbers of cases in some variables, several categories were combined which may have resulted in missing subtleties in certain programs or groups. Though our response rate and sample size was acceptable, the study utilized convenience sampling which may have resulted in the unintended exclusion of certain groups or respondents.

Recommendations for Future Study

Future research is recommended to duplicate this study to test for cross validation of results. This should occur at the same school at a different time (i.e., a within-groups longitudinal study methodology with a different cohort of students) and also at other schools, public and private, in a variety of geographic location to test for cross validation of results utilizing a between-groups methodology. Also, future research should include an examination of whether students with different demographic profiles are as successful in the various graduate degree programs when compared to students with the predominant profile. Finally, additional research is recommended to evaluate the reasons this university is able to attract a more diverse population of students as compared to the state population and demographics of competitor universities.

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MINDFULNESS-BASED BUSINESS ETHICS EDUCATION

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ABSTRACT

There are multiple methods for teaching business ethics. Unfortunately, using approaches such as philosophy, religion, case studies and moral dilemmas have had little significant impact in creating more ethical business professionals. Studies show that despite their ethical training business students still have the highest rate of cheating among college students of any discipline at both the graduate and undergraduate college levels. There is a growing need to educate students about how the mind works in ways that can help or hinder making ethical decisions. This education would promote giving business students the knowledge and skills necessary to follow ethical intentions through to ethical behavior. Mindfulness meditation has been shown to increase personal awareness and improve one's cognitive and emotional regulation while recent studies show high levels of mindfulness correlate with more ethical decision making. Through exploring how schemas, rationalizations and biases can lead to unethical decision making, students are encouraged to explore their own experience of ethics, personal responsibility and intentions. Ways to incorporate skill development in mindfulness meditation and to introduce an open inquiry process which can be used prior to making business decisions are suggested.

INTRODUCTION

Articles which recommend new approaches to teaching business ethics typically begin with a litany of famous corrupt business activities. From Lockheed to Lincoln Savings and Loan, Kenneth Lay to Bernard Madoff, recent decades have witnessed repeated examples of how the lack of business ethics results in corporate scandals. These unethical actions are often caused by self-deception due to automatic psychological and cognitive processes like biases, schemas and rationalizations. The idea of attacking self-deception in the teaching of business ethics has already been suggested. Banaji, Brazerman and Chugh (2003), called for the training in business ethics to be broadened to include what is known about the inner workings of the mind, exposing managers directly to the unconscious, psychological mechanisms that underlie biased decision making. Scientific research into mindfulness meditation has proven it has the potential to provide a method students can learn to increase awareness, obtain self-knowledge and develop insight that will result in more ethical decision making.

CURRENT BUSINESS ETHICS CLASSES

There are a number of approaches used today in the teaching of business ethics classes, including exposing students to philosophy, religion, case studies, and moral dilemmas. Studies measuring ethical attitudes of students who have taken a business ethics course have had troubling results (Jewe, 2008). Business ethics classes as taught are not fulfilling their purpose of cultivating ethical business professionals. The need for improving ethics in business keeps growing.

The mindfulness based approach to teaching business ethics calls on business teachers to teach mindfulness meditation and open inquiry skills to their students. Rather than offering a set of rules to promote ethical behavior, this approach seeks to engage emotions, facilitate introspection, increase awareness and attention, leading students in learning processes which result in personal insights. Without business students gaining an understanding of the inner workings of the mind and being offered self empowerment by adopting mind training processes, they will continue to look outside themselves for a way to fix the unethical practices while the real solution to these problems lies within.

TODAY'S BUSINESS STUDENTS

Among fields of study, business students top the cheater's list at both undergraduate and graduate levels (McCabe & Trevino, 1995; McCabe, Butterfield & Trevino 2006). On personality tests, finance students in particular, scored significantly higher on narcissism and lower on empathy, compared to other students, both traits which contribute to unethical decision-making (Sautter, Brown, Littvay & Sautter, 2008). Most business students place high value on money and image, and pursue these extrinsic values rather than the intrinsic ideals that would lead to greater ethical conduct (Kasser & Ahuvia, 2002). Business students who embrace materialism show a strong concern for being seen as successful by others (Kasser, 2002). A 2010 study of business school students shows a correlation between increased narcissism and unethical decision making as well as lowered empathy levels in these students. (Brown, Sautter, Littvay, Sautter & Bearnes, 2010). This profile for business students among college students in general, shows them to be especially vulnerable to taking unethical actions.

WHAT IS MINDFULNESS

A common definition for mindfulness in Western society comes from the field of health. It is called Mindfulness Based Stress Reduction (MBSR). In 1979, Jon Kabat-Zinn brought the Buddhist conceived practices of mindfulness and meditation to the University at Massachusetts Medical Center. At the University of Massachusetts, Kabat-Zinn (1994) defined mindfulness as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally"

(p. 4). Kabat-Zinn led an eight week mind-body program aimed at individuals with chronic stress, pain and illness. While conventional treatment for these patients had been unsuccessful, the skills of mindfulness and meditation helped them to increase their awareness, acceptance and skill in living life fully in the present moment, as it is and as they were. At its base mindfulness requires a personal shift in attention and awareness. Our Western way is one of 'doing," staying busy focused on fixing and changing things, or trying harder to solve problems or affect a cure. In comparison, the Eastern orientation is one of being, with an awareness to living life as it is, present in just this moment. Mindfulness allows a way to disengage from conditioned, habitual thought processes driven to seek comfort and avoid pain through a shift in attention, to accepting and being with the sensations, feelings and experience of illness in the moment. In time mindfulness as a shift in awareness and being was recognized as a pervasive need of many in the Western culture beyond those labeled as patients.

Mindfulness meditation is a 2600 year old Eastern practice which allows one to reconnect mind, body and heart. Bringing awareness to the present moment has the uncanny ability to also bring to the forefront of living the awareness of impermanence and change in each moment from one's birth to one's death. Mindfulness leads us to remember to act from compassion, live in our physical bodies and remember that we are more than just our thinking minds. As a mind training technique mindfulness meditation offers processes to rest and tame the mind, experience physical sensations and release emotional residue in the body. This results in cultivating clarity and insight which can be brought to daily life post meditation. Ethical intention manifests into ethical action through mindfully living each moment as awake as possible when thinking, speaking and acting in all daily activities.

SKILL IN CONCENTRATION

A wareness of breath is often suggested as a mindfulness activity for the beginning meditator. The practice helps to develop skill in concentration as a way to rest and tame the mind. The instructions are to put one's attention on the breath, exactly as it is, wherever one has awareness of the physical sensation of breathing in one's body, and then to keep it there. Invariably, before long the mind's attention shifts from the breath to some other object, often times thoughts. Mindfulness is lost. Upon recognizing this shift has occurred, one is instructed to purposefully bring one's awareness and attention back to the breath. Repeated practice of this method strengthens the mind's ability for concentration. If a physical sensation of pain in the body arises, one is encouraged to sit with it without moving so one can experience not moving to get rid of the pain automatically, succumbing to a quick fix. This presents the rare opportunity to experience that pain or any sensation will begin, exist and cease as we observe it rather than attempt to control it. If pain is too intense to abide, the meditator is instructed to be there and aware, mindfully as they change their physical position.

Over time, one comes to see how habitual our process of thinking is and how often it removes us from living in the present. While meditating, one comes to know one's own thought habits which might include the processes of planning, analyzing, judging and blaming. Other cognitive habits include not realizing that thoughts are merely creations of the mind and recognizing how quickly one stimulates their perceptions of sight, smell, taste, hearing or touch through interpretation. Engaging in mindfulness reveals to one that much of life is lived in the default mode of "mindlessness," living in the past or future, projecting into the moment and not in our physical experience "this" moment in time.

Among the benefits of developing the skill of concentration in meditation is that one learns how to calm the physiological fight/flight/freeze responses of the autonomic nervous system/amygdala. This allows stress reactions to be short circuited. It also creates an opening interceptive pause or breath where one can mindfully choose a new, novel response. Meditation is a vehicle for developing skills in concentration and mindfulness; and with experience these skills can be brought to daily living (Gunaratana, 2001).

THE SECOND STEP: INSIGHT MEDITATION- HOW THE MIND WORKS

Insight meditation calls for the meditator to rest in open awareness rather than to focus on one specific object like the breath. In insight meditation, a mindful witness presence arises and waits to see where and what internal or external object the mind will contact and engage. Objects of awareness may include thoughts, images, memories, feelings, bodily sensations, urges and what one can see, hear, smell, taste, or feel. The sense of the impermanence of objects is experienced in mindfulness meditation as well as the insight of how one attempts to hold onto pleasant thoughts and sensations while working to escape thoughts and sensations which the mind judges as negative.

Ordinarily the mind will make contact with an object and then quickly skip into automatic cognitive processes. Here and now is lost as the workings of the mind take over interpreting, naming, classifying, matching experience, projecting and story making. Jean Piaget, the cognitive psychologist, called the basic processes by which the mind works "accommodation and assimilation." Past knowledge is stored as composite schemas for organizational purposes in order to make sense of incoming data (Wadsworth, 2003). These cognitive processes are usually opaque but become transparent to the experienced meditator who becomes familiar with how the mind works.

Insight meditation is considered a practice of wisdom. One sees the process of illusions being created by the mind. Illusions obstruct the reality right in front of you (Hahn, 1998).

Particular patterns and themes around which one's thoughts, intense feelings, bodily sensations and behavioral urges or patterns loop begin to stand out. Reflecting on what one experiences and sees in meditation reveals one's personal style of appraising and filtering incoming data. The way one loses touch with reality when imposing thought habit overlays such

as rationalizations and judgments becomes apparent. Wisdom from mindfulness allows direct contact with an experience as it occurs not as one's mind says it is (Brown, Ryan & Creswell, 2007).

The following table is offered to help the reader differentiate between the experience of mindfulness and the conditioned mind.

Mindfulness	Conditioned Mind
Reality oriented	Deluded
Impermanence	Solidity
Bi-directional	Top/down processing
Heart-mind-body	Lost in one's head
Awareness of being	Doing
With intention	On "auto-pilot"
Focused on the here and now	Focused on the past and future
Nonjudgmental	Evaluative
Responsive	Reactive
Accepting; inclusive	Averting and blaming
Lets be	Fixated
Perceptual/precognitive	Cognitive: Believes thoughts and feelings
Open, creative, flexible	Habit driven: Assumptions, rules, and schemas
Interconnectedness	Separateness
Sensing/Observing/Experiencing	Labels and creates narratives
Empathic	Self first
No self/Nothing but the self	Ego
Unity of body/mind/heart	Supremacy of mind
Place for intuition	Rationalizing; justifying
Equanimity	Emotion driven
Left/right brain balance	Imbalance in brain hemispheres

BRINGING MINDFULESS TO THE CURRICULUM

Mindfulness meditation can be best included into the curriculum of a business ethics course through using guided discovery. Facilitate students in active behavioral experiments in and outside of class, each followed by reflection to integrate the learning. In the first class the teacher can lead a guided meditation experience for a 20 minute period to introduce students to the experience of meditation. Following the first hand experience of mindfulness meditation, the teacher guides the students in an inquiry into how this experience differs from the student's usual existence in the world. Helping students distinguish how being in the here and now increases present moment awareness as compared to the doing mode as tied into the busyness of what was done or needs to be done is a way to offer students the phenomenological experience of the shift in awareness and attention at the heart of mindfulness. Kabat Zinn's definition of mindfulness is taught and students are encouraged to begin daily meditation for a 20 minute period and to

follow this activity by writing a brief reflection of what they experienced as a homework assignment. Each class begins with a short arrival meditation enabling students to shift into mindfulness as a precursor to considering the ethical issues and material in the class session.

During the first few weeks of class, variations on mindfulness meditation can be facilitated and students can be encouraged to try out various methods to see what works for them. The body scan, where awareness is drawn to various parts of the body from the feet to the head might be taught. The purpose of this meditation is to focus and increase the awareness of students with their connection to the body. People are often amazed by how numb, tense or out of awareness the mind is with the physical body other than recognizing a 'tired' or 'stressed' mode. Levine (2010), who studies how the body releases trauma and the impact of not processing bodily sensations from fight/flight/freeze situations writes: "Amazingly, as much as 90% of the vagus nerve that connects our guts to our brains is sensory! In other words, for every one motor nerve fiber that relays commands from the brain to the gut, nine sensory nerves send information about the state of the viscera to the brain…It can be said that humans have two brains: one in the gut (the enteric brain) and the 'upstairs brain,' sitting within the vaulted dome of the cranium. These two brains are in direct communication with each other through the hefty vagus nerve. And if we go with the numbers-nine sensory/afferent nerves to every one motor/efferent nerve—our guts apparently have more to say to our brains (by a ratio of 9:1) than our brains have to say to our guts" (p.121). An important benefit of mindfulness meditation is that it offers a way to reclaim access to the bottom up communication of body to the brain in addition to the usual top down communication of brain to body that is more often given precedence.

Informal ways to bring mindfulness to daily activities include being aware and mindful in the moment with just walking, showering or washing the dishes rather than multi-tasking. Students are asked to experiment and only trust in their own experience when considering the usefulness of mindfulness meditation as a daily practice from which they might benefit.

THE SELF DECEPTIVE MIND AT WORK

In this approach to teaching business ethics instructors must provide more than knowledge. By highlighting scientific research findings about how business executives fall prey to unethical behavior based on psychological and social psychological processes business students can examine their own experiences and decision making. In *The Ethical Executive*, Hoyk and Hersey ask the question: "Are today's corporate leaders unusually corrupt?" Their premise is that anyone can become unethical, given the appropriate circumstances. They describe forty-five psychological traps including schemas, biases, justifications and conflicts of interest which lead an executive to believe that an unethical decision is right and appropriate. Employees are also subject to the "web of deception" as are business students (Hoyk & Hersey, 2008). A main objective of Mindfulness-Based Business Ethics Education is to raise the consciousness of

business students to their self deceptive cognitive processes, while also facilitating awareness and introspection as part of the learning and ethical development process.

One way to introduce business students to the concept of schemas is to familiarize them with Padesky's example of using the metaphor of prejudice. She shows how through Socratic questioning and information processing experience can be made transparent to students so that they can learn how to construct their own learning and change (Padesky, 1991). "Within cognitive development, a schema is a pattern imposed on reality or experience to help individuals explain it, to mediate perception, and to guide their responses" (Young, Klosko & Weishaar, 2003, p. 6). The schema is a very useful and efficient process for quick decision-making. The downside is that this process leads to a limited search of information which fits pre-existing cognitive frameworks while information not fitting the framework is overlooked. This selective noticing is called confirmation bias (Myers, 2002). In effect business teachers can demonstrate through an inquiry process to students how schemas are maintained in memory and act as biases in information processing by the mind (Padesky, 1994). This results in a consciousness raising process for students.

Another potential problem with the mind's use of schemas is that one often overlooks seeing or noting data which does not fit the filter one is currently using. The Pinto case is a classic business example involving the use of schemas as a rationalization for why an unethical decision was made. The Ford automotive company discovered a flaw during the production process of its cars but left the error, inevitably leading to injuries and deaths. Dennis Gioia, Ford's field recall coordinator, wrote that he was "so overloaded with information, so pressured about time, that he naturally developed schemas to help him screen cases" (Hoyk & Hersey, 2008, p. 52).

Schema biased cognitive processing is self deceptive in that the framework itself is based on assumptions created by past experience, held in memory which are then projected onto the current situation. Schemas and confirmation biases result from mindless attention to what is actually occurring in the here in now. One's mind is caught in mindless cognitive processing of information within a looped, closed system. Like an optical illusion, we are stuck in seeing just one gestalt, though another more useful one may exist. In fact, one is unaware of the existence of a second gestalt, which can be found by shifting the angle of perception (Hasson, Hendler, Bashat & Malach, 2001). In the case of the Ford Pinto, the company's justification of not spending the additional money it would cost to fix the defective gas tanks was that they didn't want to raise the cost of the cars. Rationalizations are often self-serving explanations of behavior after an unethical action has already been taken. The decision is quick, without thought of reality or awareness of ethical issues in the matter.

Studies show that business students use rationalizations in order to explain why cheating during business school programs is acceptable (McCabe & Trevino, 1995). In fact students with stronger reasons (rationalizations) for committing academic dishonesty are more apt to commit academic dishonesty (Eastman, Iyer and Reisenwitz, 2008). There is a need for business ethics

education to work in an effort to dismantle the rationalization process of business students and managers (Gentile, 2005). The article, "Increasing Effectiveness In Teaching Ethics to Undergraduate Business Students," highlights how to teach business students about rationalization as a self-deceptive process which goes along with unethical decision-making (Lampe, 1997). Teaching business ethics students the list of "common rationalizations" developed by Josephson reminds students of the most common reasons and self-justifications used for unethical behavior in business. Among the rationalizations are "everyone's doing it," "I'm just fighting fire with fire," and "I've got it coming" (Josephson, 1993, p. 42). Teaching students these rationalizations helps them to be more aware of needing to check reason giving which can impact ethical versus unethical decision making.

RATIONALIZATION QUIETS COGNITIVE DISSONANCE IN THE BRAIN

Cognitive dissonance is defined as "a state of tension that occurs whenever a person holds two cognitions (ideas, attitudes, beliefs, opinions) that are psychologically inconsistent" (Tavris & Aronson, 2007, p.13). In *Mistakes Were Made (but not by me): Why We Justify Foolish Beliefs, Bad Decisions, and Hurtful Acts,* Tavris and Aronson argue that the brain is wired for self-justification. They cite results from neuroscience research showing MRI scans where brain circuits shut down when cognitive dissonance occurs. Then, when a self-justification is made and consonance returns, activation of circuits in the brain start up again. "When we make mistakes, we must calm the cognitive dissonance that jars our feelings of self-worth. And so we create fictions that absolve us of responsibility, restoring our belief that we are smart, moral and right--a belief that often keeps us on the course that is dumb, immoral and wrong" (Tavris & Aronson, 2007, p. 19). A prime example of cognitive dissonance resulting in self-justification can be observed in the conflict of interest in a business context.

A conflict of interest is defined by the Merriam-Webster Dictionary as "a conflict between the private interests and the official responsibilities of a person in a position of trust." For example, the unethical practices of Enron's accountant, Arthur Andersen, changed the business model of their accounting firm in an effort to increase their profits by offering their clients other services (Barrett, 2005). When motivations for personal self-interest and professional expectations and responsibilities coincide, more often than not the immediate self-interest decides the matter in a quick, reactive, automatic and unconsciously biased way (Moore & Lowenstein, 2004). Top company officials who engage in fraud rationalize: "I am doing this for the good of everybody who works in the company. I'm not actually stealing; I'm borrowing" (Callahan, 2004, p. 103). Joseph Wells, a former FBI agent and founder and chairman of the Association of Certified Fraud Examiners, says rationalization gives fraud a nice name (Callahan, 2004, p.103). Believing one's rationalizations are truth can act as a slippery slope towards more and larger ethical lapses (Moore & Lowenstein, 2004). Rationalization leads self-interest to be overlooked as a cause while allowing it to prevail in deciding conflicts of interest in

business. Even the brain makes peace through the creation of the rationalization. The brain returns to cognitive consonance by eradicating the dilemma and once again functions smoothly.

MINDFULNESS IMPROVES COGNITIVE FLEXIBILITY

Mindfulness improves one's skills in perceptual awareness, concentration and shifting attention, ultimately culminating in the creation of a new receptive attention skill (Brown et al., 2007; Jha, Krompinger & Blaime, 2007). In practice cognitive flexibility means an increased ability to be creative and empathize (Shure, Christopher & Christopher, 2008). Mindfulness has been linked to cognitive flexibility (Moore & Malinowski, 2009). Cognitive flexibility increases one's ability for open inquiry into self-deceptive cognitive and psychological processes. Research studies support this. A study of social workers who regularly practiced meditation showed increased awareness of the present moment and suspension in preconceived ideas about their clients (Brenner, 2009). Other studies in clinical psychology confirm that as people became more mindful and flexible "their willingness to care more for others increases, while their prejudice and stigmatization of others decrease*"* (Biglan, 2009, p. 1).

Teaching and learning about how the mind works and how the mind can be trained are at the foundation of this new approach to teaching business ethics we call Mindfulness-Based Business Ethics Education. Seeing outside the box requires awareness that one is inside a box. In business classes and business settings, people tend to notice and register information that confirms their preexisting viewpoints. People tend to believe that others who hold views different from their own aren't seeing reality clearly and therefore must be biased in some way. (Tavris & Aronson, 2007). Students come to discover that to be ethical, one must become familiar with implicit personal biases. Students can be encouraged to take the Implicit Attitudes Test, an on line social cognition research project, which helps individuals to identify unconscious biases towards race or gender. Research on brief training in mindfulness meditation, four days worth of meditation training, showed increased mindfulness, improved mood, significantly improved visuo-spatial processing, working memory and executive functioning (Zeidan, Johnson, Diamond, David & Goolkasian, 2010). Executive function is at the center of a conscious ethical decision making process.

An open inquiry process to supplement mindfulness meditation is taught to business students for use prior to making any business decision. The questions include: 1. "What might I be adding to this situation?" (bias, prejudice, schema, rationalization, shame, anger or fear), 2. "What might I not be seeing or leaving out of this situation?" 3. "Can I detach myself from the outcome, personal interest and views and just be here, with what is?" This supplemental inquiry practice presents a system to slow down and stop, and get mindful, in an effort to increase the chance of ethical responses instead of falling prey to deceptive thinking habits and reactive decision making.

MINDFULNESS IMPROVES EMOTIONAL REGULATION

Exploring the rationalizations and justifications behind unethical arguments presented by business students within a class setting is a useful practice, though sure to arouse strong emotions. On the other hand, engaging emotions increases the integration of learning.

Research findings demonstrates that mindfulness and meditation increase one's ability to regulate one's emotions. "Mindfulness is associated with enhanced prefrontal cortical regulation of affect…" (Creswell, Way, Eisenberger, & Lieberman, 2007). Brain monitoring shows less activation in the amygdala; the emotion/fear center of the brain, while meditating (Lutz, Brefcznski-Lewis, Johnstone & Davidson 2008). Mindfulness mediation may increase positive emotions based on a study that included an eight week training in mindfulness, meditation in a work setting with healthy employees and follow-up at four months. "The findings from this study are the first to suggest that meditation can produce increases in relative left-sided anterior activation that are associated with reductions in anxiety and negative affect and increases in positive affect" (Davidson, Kabat-Zinn, Schumacher, & Rosenkranz, 2003, p. 569). A study of nursing students suggests that mindfulness can reduce anxiety and decrease the negative emotional contagion nurses may experience while caring for distressed patients (Beddoe & Murphy, 2004). Likewise, a study of counseling students enrolled in a MBSR based self-care class showed counseling trainees benefiting from increased awareness, less reactivity to others and an improved empathy for both self and others (Shure et al., 2008).

Dilemmas in business ethics often involve strong opinions and emotions. The benefit of increased emotional regulation would be useful when considering ethical quandaries. Lerner and Shonk (2010) suggest that angry people will choose cognitive shortcuts in making a decision rather than systematic reasoning and will blame others for problems instead of considering aspects of the situation that contribute to its complexity. Mindfulness meditation creates cognitive and emotional regulation that in combination with an ethical open inquiry process will increase the chances one will be able to follow through with ethical decision making based on one's ethical intent.

Recent research demonstrates important connections between mindfulness and ethical decision making. In one study individuals higher in mindfulness compared to individuals lower in mindfulness as measured by the Mindfulness Attention Awareness Scale acted more ethically, valued moral identity more strongly, and were more likely to use a principled approach to ethical decision making. Mindfulness was found to promote "greater ethical intentions and lesser ethical infractions" (Ruedy & Schweitzer, 2010, p. 20). Mindfulness leading to increased awareness underlies these results. These studies substantiate that mindfulness is connected with ethical decision making.

TEACHING MEDITATION TO BUSINESS ETHICS STUDENTS

After reviewing literature in support of the usage of meditation to teach business ethics, a forerunner stands out. La Forge (1997) has written about how meditation can be used to make people more ethical. La Forge utilized this strategy when teaching meditation skills to business students at Nanzan University in Japan. He spoke of meditation as "one way to disengage ourselves from a single perspective of a moral problem" (La Forge, 2004, p. 17). A main goal of his work with business students was to help them see ethics as the cultivation of ethical relationships between one's self, others, and the world (La Forge, 1999). He sought to increase his students' awareness in recognizing ethical issues in their lives and to help them develop an ethical vision for themselves. There are a variety of activities presented in this article which might be employed or modified for use in teaching a mindfulness based business ethics class.

Promising change is on the horizon in several business education program settings. Some college business students are voluntarily signing a business ethics oath as part of their educational training. A group of Harvard Business School students have raised the need and intention to place similar self-responsibility and accountability within business as those sworn by the medical profession. It is time for the business faculty to meet the challenge of how to incorporate the findings from other fields, such as evolutionary psychology, biology and neuroscience, and to apply what is known about the brain/mind and our behavior in the teaching of business ethics.

This article has presented a new approach to teaching business ethics we call Mindfulness Based Business Ethics Education. The method is consistent and repeatable. It draws on advancements in neuroscience; the plasticity of the brain through new experience, and current scientific knowledge about the cognitive, emotional and behavioral regulation qualities of mindfulness meditation. Guided discovery to increase student's awareness and open inquiry are suggested techniques to equip business students with the knowledge and skills that can empower them to override self-deceptive cognitive processes and address the issues which lead to unethical decision making. Mindfulness Based Business Ethics Education as a new teaching approach deserves further discussion and research. The approach promotes self-responsibility and conscious processes for business professionals to follow ethical intent through to ethical decision making on a daily basis. To be mindful and aware in every thought, word and deed.

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RELATIONSHIP BETWEEN DISSIMILIAR COGNITIVE STYLES AND USE OF LEARNING STRATEGIES IN UNDERGRADUATE STUDENTS

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ABSTRACT

Though the sea of research on study of cognitive styles and/or learning styles was said to be common knowledge (Riener & Willingham, 2010), evidence-based research to support the literature on the existence of dissimilar learning styles in the classroom was sparse. The researchers conducted this study of six undergraduate classes, to identify the relationship of dissimilar cognitive style between instructor and student and learning strategies that students used to bridge the cognitive gap with their instructors. To measure cognitive styles, the Kirton Adaption-innovation Inventory (KAI) was used. With this problem-solving preference instrument, students were classified as more adaptive or more innovative. In order to determine dissimilarity of cognitive styles between student and instructor, the instructor's KAI score was subtracted from the student's KAI score. The Motivated Strategies for Learning Questionnaire (MSLQ) was used to measure student learning strategies.

The researcher found that for a majority of the classes, rehearsal was the primary study strategy which was used in these classes. Also, effort regulation was prominently used by students to increase their understanding of the course which was taught by the professor of a dissimilar problem-solving style. As gap increased for the more innovative and more adaptive students in Class Three, there was a positive association with the increased use of total resource management learning strategies. Findings of this study are important in further verifying the relationship between cognitive-style gap and study strategies. They are relevant for instructors, whether their cognitive style is more adaptive or more innovative. The findings of this study should also be meaningful to students, who may have perceived themselves to be limited by categorical labeling of learning styles; who feel that they may not be able to learn outside of the instructional method that suit the category in which they have been placed.

INTRODUCTION

Recent research has continued to provide evidence supporting two seminal conclusions regarding cognitive styles. That is, cognitive style may be considered a factor in determining student academic success (Cassidy, 2004; Romanelli, Bird & Ryan, 2009), and cognitive style

may be one avenue through which students can understand their preference to processing information, or how their instructor can better help them learn (Evans, Harkins & Young, 2008). Regardless of the depth of literature and numerous studies which have been carried out, making the cognitive styles field a popular one in general, a few studies (Cooper, Lingg, Puricelli & Yard, 1995; Friedel, 2006; Friedel & Rudd, 2009) exist concerning dissimilar cognitive styles between professor and student. Furthermore, while existing empiricism (Hendry, Heinrich, Lyon, Barratt, Simpson, Hyde, Gonsalkorale, Hyde & Mgaieth, 2005) substantiates the relationship between cognitive style and learning strategy, sparse research existed which examines relationships between dissimilar cognitive styles and student preferences of learning strategies, which may provide notable implications for students and instructors.

It is not a rare situation in higher education that students are enrolled in courses that do not support their cognitive styles, as many professors were unaware of the implications of students' cognitive style in the classroom (Evans & Waring, 2009). This may impact learning and eventually performance. Applying the Felder-Silverman Learning Style Model (FSLSM; Felder & Silverman, 1988), Kinshuk, Liu and Graf (2009) investigated whether students with a strong preference for a particular learning style had more learning difficulties if their styles were not supported in the learning environment. Only two years ago, their findings indicated that learners with strong preferences towards a particular orientation had significantly lower scores on the final exam than learners with no strong preference for any learning style dimension. In other words, learners who preferred to learn in a particular way, found it more difficult to learn.

A number of researchers (Friedel & Rudd, 2009; Oxford & Lavine, 1992) have questioned that if mismatches between a teacher's learning style and a student's learning style, led to difficulty in learning, what learning strategies would the student use to counteract the stress of the contradictory cognitive styles? As other studies and scholars (including Cools, 2009; Friedel, 2006; Kirton, 2003; Zhang, 2001) have also echoed the call for exploring and explaining learning style incongruence between instructor and student, Kirton's conceptualization of dissimilar learning styles was used in this study to offer understanding of the impact of the combination of dissimilar cognitive styles and students' uses of learning strategies in the context of the undergraduate classroom.

To promote diversity in learning, Prashnig (1998) and Rayner (2000) supported research on dissimilar learning styles in relation to learning strategies. Rayner (2007) advocated for aids which may help educators better meet individual learning needs in the classroom. This study may augment the sparse body of research which has demonstrated how cognitive style gap related to practical coping and learning strategies used by students. Further, it was intended to further examine Kirton's (1976) theory and challenge its application to and sustainability in the classroom environment.

THEORETICAL FRAMEWORK

The theoretical framework of this study consisted of Kirton's Adaptation-Innovation (A-I) theory of cognitive style (Kirton, 2003), which examined problem-solving preference. According to Kirton, cognitive styles were considered to be primary causes of individual and organizational behaviors that were apparent in individual workplace actions and in organizational systems and everyday processes (Sadler-Smith & Badger, 1998). Like the workplace, A-I theory has also manifested itself in the higher education classroom (Friedel, 2006; Friedel & Rudd, 2009).

Adaption Innovation Inventory

The KAI was developed in 1976 and has been used to identify adaptiveness and innovativeness of individuals by placing them on a continuum of cognitive style. Considerable research has gone into the theory of A-I and also the production of the KAI, which has been tested in cross cultural contexts and had reported acceptable ($\alpha = .88$) reliability. Kirton (2003) noted that the KAI does not correlate with intelligence tests or level of education.

The KAI was originally designed for industry; however, empirical evidence has supported its use for other populations. Friedel (2006) evaluated the applicability of A-I theory in a higher educational setting with undergraduates. From the nine classes that were examined, he wanted to determine if dissimilar cognitive styles between instructor and student influenced student engagement in the classroom. One finding from the study implied that in the nine classes, the cognitive style gap between course instructor and student did not seem to make a difference or affect student's engagement in learning. From this, one may speculate that students applied learning strategies could have coped in order to learn, and readily overcome the cognitive style gap.

A student may be described as enacting coping behavior when he or she has chosen to depart from his or her preferred problem solving style in order to communicate more effectively with another individual. For Friedel's (2006) study, the student may have exercised coping behavior to better understand the course that was being taught by the instructor of a dissimilar cognitive style. Also from Friedel's investigation of stress, motivation, and student engagement, it could be supposed that the average student may have sought other ways to learn; probably by applying study strategies which may have moderated the stressful effects which resulted from the cognitive gap.

Regarding the possible stressor caused by the gap, the student's choice of a strategy which had been used to mediate or even nullify the stress is costly. This cost of effort was expressed in Kirton's explanation of the two axes along which coping varied: intensity and duration. Research and practice, according to Kirton (2003), suggested that when individuals coped they operated outside of their styles, but were only willing to do so for the minimum

amount (intensity) and the least time (duration). The effort that individuals put out to cope was sustained by motive. The discomfort was borne and a sometimes high price was paid because motivation enervated the discomfort level which could be attained based on the affiliated rewards. In other words, people would endure and for a long period of time if the reward was high. The same thing may be true about students with dissimilar styles to their professor's. It was worth the cost of making the grade, because each test has to be passed with a very good score if the student must prove mastery in a course. At a point where the rewards became too expensive, persons became ill or may have needed counseling (Kirton, 2003).

KAI Subscales

KAI comprised three subscales which, when totaled, generated the sum score for an individual. Kirton (2003) explained that sub-scores for most people could almost be accurately determined from their KAI totals. The subscales scores according to Kirton were sufficiency of originality, efficiency and rule/group conformity. These are further explained.

Sufficiency of Originality was the subscale provided clarity on individual differences in the way they produced original ideas. Idea generation was not related to a person's capacity to produce ideas but to his or her style or how he or she preferred to generate inventive notions. Adaptors had a tendency to develop ideas that were useful and which would readily be applied to the situation at hand. The ideas were usually sound and well-thought out and as such were fewer than those of the more innovative individuals. The more innovative proliferated many original ideas - some deemed irrelevant by the more adaptive - on a greater level, so much so that they become faced with the challenge of choosing the one that was best suited for the situation they examined. Kirton (2003) stated that though both groups had a distinct preference to the production of novel ideas, both adaptive and innovative individuals may produce many ideas; providing evidence of the separation between style and level.

Efficiency was the subscale better distinguished the style differences of an individual's preferred technique of solving problems (Kirton). The more adaptive worked within the prevailing structure with greater detail. The creativity that they applied to the structure was done to improve that structure; to change it marginally through reform. The more innovative tended to solve problems by working outside of the structure to examine how they can develop a solution that may be different to the status quo. The more innovative, having paid less attention to details and taking greater risks may be inaccurately assessed as less efficient to the more adaptive; but indeed, any other method would be inefficient to the more innovative (Kirton).

Rule/Group Conformity was the manner in which the more adaptive and more innovative had managed structure based on their style preferences (Kirton). The more adaptive favored group consensus and demonstrated a tendency to live within the rules. Though they did not conform to every rule; they may solved the problem by developing new rules. The more innovative tended to break the rules and often did so without informing the group. However, the

more innovative did not purposefully break rules; many times they were simply not aware of the significance placed on the rules. This may have led to the perception that they were unruly, adaptive as close minded, dull, and stodgy (Kirton).

COGNITIVE STYLE AND COGNITIVE LEVEL

Cognitive style and intelligence was unrelated (Kirton, 2003; Riding & Sadler-Smith, 1997), or independent (Sadler-Smith, 2001), though they both reflected differences in individuals' problem solving, learning, and thinking preferences. Kirton (2003) had also suggested that because the two were independent, they should be measured separately; thus the KAI only measures cognitive style with respect to problem solving.

Cognitive style is concerned with preferences or approaches in which individuals perform. Cognitive level, on the other hand, is more aligned with mental ability (Alkhalifa, 2006) capacity (Kirton, 2003) and academic competence (DiPerna & Elliott, 2001). Whereas cognitive style may be based on selection of procedures to solve the problem, cognitive level may be based on previous experiences in solving the problem.

Bloome's (1956) taxonomy of learning levels serves as another example of cognitive level. The taxonomy has been generally accepted in the academic community, which inferred from the framework that learning took place on three platforms: cognitive, affective, and psychomotor.

Coping in AI Theory

According to Kirton's (2003) A-I theory, coping was a learned technique and was evoked when an individual tried to reconcile his or her preferred style with a dissimilar style of another individual. Kirton went on further to define coping as a process that was triggered by motive to work with the other individual to solve a problem; however, this process was achieved at a price to the coping individual in the form of stress. The motivation to cope can last for a specific amount of intensity and duration to obtain the reward (such as a course grade) of solving the problem. However, if an individual lacked the motivation to cope, the reward was not deemed large enough, and the problem went unsolved by the partnership.

Level, like style, was also related to coping, as Kirton explained:

> *Any form of level is related. So one can expect discomfort as one feels obliged to extend oneself overtime (i.e., have the motive) to solve a problem that is on the edges (or even the onset, beyond the edges) of one's levels of knowledge, skill, or whatever capacity or level attribute seems needed. The data available from the use of KAI are clear in suggesting that although there is massive evidence that AI is stable, the coping behavior associated with it may be less so. For instance, specific coping behavior can be directly predicted from a person's style, status, or*

> *particular skills. That said, there is one prediction that can be made. It can be readily and safely assumed that of the diversity of problems that person faces, not all will be solvable within that individual's preferred style range; however much a person might try by choosing spouse, friends, associates, and environments, to say nothing of the problems arising from them, to suit preferred style at some times will not fit* (p. 256).

Kirton (2003) asserted that coping behavior may be conduct that was not in accord with one's preferred cognitive style, which meant that the behavior that one exhibited was done to facilitate that different style. In other words, the flexible and modifiable behavior that was exhibited was coping behavior being enacted. It is the behavior that was learned and implemented to bridge a cognitive-style gap. Because coping behavior may be learned, and it was a deliberate response which pacified a problem solving situation, it would take involuntary action to enact it. Preferred style was natural to the individual: one did not have to stop to think to apply his or her preferred style to a given situation. However, when an individual acted outside of the style that was natural to him or her, he or she had to purposefully demonstrate responses to deal with conflicts presented by the situation which demanded such a response. Coping can be considered as the mechanism that moderated the problem solving situation and motivation dictated the choice to be made of whether to cope or not. An instructor may want to know that coping behavior did not alter one's style and should not expect it to do so. It however, expanded the range within which persons of dissimilar styles were willing to endure each other.

LEARNING AND TEACHING

A number of authors (Cassidy, 2004; Coffield, Moseley, Hall & Ecclestone, 2004; Dunn, Dunn & Price, 1996; Felder & Spurlin, 2005) have agreed that the learning experience for students may be augmented, if the teacher understood students' learning styles. Other individuals (Romanelli, Bird & Ryan, 2009) have somewhat differed on this matter and suggested that when there were dissimilarities in the learning styles of student and instructor, the students were challenged to extend themselves beyond what they thought they were capable, thus improving their academic abilities. While this extension of the student may be positive and possible, it may also yield some negative results, especially if the student experienced difficulty in fit with the instructor and his or her teaching strategies or time did not allow that student to conform as quickly as he or she may needed to conform.

One method that has been suggested to deal with the issue of discordant learning styles in the classroom is for the instructor to design instruction that catered to various styles or according to one of the most recent reviews on learning styles by Romanelli, et al. (2009), is to offer courses that employ a variety of teaching styles. Hendry, Heinrich, Lyon, Barratt, Simpson, Hyde, Gonsalkorale, Hyde, and Mgaieth (2005) investigated the impact of a learning styles

workshop on participants' preferences for group work, study self-efficacy, group climate and assessment performance among other factors. The students reported that their knowledge of their own learning preferences had improved and they were more accepting of the styles of their colleagues. An instructor knowledgeable of the findings of Hendry and his colleagues may find it applicable to instructional strategies like peer-share, group formation and maintenance.

Learning Strategies

Students from time to time implement various learning strategies in an effort to increase the depth of their knowledge, meet the demands of the learning environment and improve the quality of their course results. Research findings also demonstrated that knowledge of learning strategies may also generate alternative methods in college entrance examination preparation (Kim & Dembo, 2000). Warr and Downing (2000) has extended the research outside of the traditional academic setting to the non-academic workplace setting, in their investigation of adult technical trainees who were taking an introductory vehicle technician course. The researchers, based on their findings, inferred that the more anxious adult learners used rehearsal, interpersonal help-seeking and written help-seeking amongst other learning tasks. From this research the Learning Strategies Questionnaire was developed.

The research on learning strategies seemed to be double-edged. On one edge researchers agreed that it did not lead to self-regulation as intended, primarily in adult learners. On the other edge and according to the findings of Lynch (2008), strategies can be both a hindrance as well as a success factor to the academic performance of the undergraduate student. In his study on motivational beliefs and learning strategies in challenging college courses, he examined 320 students at the undergraduate level. He claimed that meaningful analysis could not be derived from the sophomore group; however, he was able to conclude that for all the other academic levels (Freshman, Junior and Senior), students were asking for more help or that their peers were supporting them with their difficult courses (Lynch, 2008). Seeking help may be a positive step in the right direction; however, on the flip side it may be a negative enabler for students as they may create a tendency to rely on the help-giver instead of learning alternate strategies to deal with difficult courses. This reason may substantiate Lynch's assertion that student effort decreased as the level of course difficulty grew and that the reduced effort had a domino effect on them learning new strategies. Seeking help and getting help may be successful strategies that students were executing. This may be how they were redirecting their efforts and as such may not be willing to implement more productive, new techniques.

By using the deep processing strategies (Duncan & McKeachie, 2005) of elaboration and organization learning tactics to carry the weight of challenging courses, Lynch (2008) may also be suggesting that these may be facilitators to academic success, as these strategies provided an alternative to students' mechanical rehearsal of subject matter without really understanding what they were memorizing. These he claimed sustained the retention of more complex material.

Duncan and McKeachie (2005) seemed to concur based on their empiricism which indicated that regulating, monitoring and meta-cognitive approaches implemented by students resulted in an improvement in course grades.

PURPOSE AND OBJECTIVES

In light of the findings from research and based on remaining gaps in the literature, the primary purpose of this study was to determine if there were significant correlations between use of learning strategies as measured by the MSLQ (Pintrich, Smith, Garcia & McKeachie, 1991) and cognitive style gap, measured by KAI (Kirton, 1976), between students and their instructors in the College of Agriculture at [Southern State University].

The objectives of this study were to:

1) Determine the cognitive style of faculty participants and cognitive style of student participants for the purpose of calculating cognitive-style gap utilizing the KAI.
2) Determine the use of learning strategies of undergraduate students as measured by the Learning Strategies section of the MSLQ.
3) Examine the relationships between cognitive-style gap and undergraduate students' use of learning strategies

METHODS

Instrumentation

The self-reported, anchored scale inventory designed to assess college students' motivational orientations and their use of learning strategies for a college course, was developed in 1993, at the University of Michigan by Professors: Paul Pintrich, David Smith, Teresa Garcia and Wilbert McKeachie. The section on learning strategies defines nine scales covered by the broad title: 1) cognitive, 2) meta-cognitive and 3) resource management strategies. Included in the cognitive scale are: a) rehearsal, b) elaboration, c) organization and d) critical thinking. Meta-cognitive strategies included: a) planning, b) monitoring, and c) regulating strategies. Resource management strategies include: a) managing time and study environment, b) effort management, c) peer learning, and d) help-seeking.

The preferential and distinctive difference in a person's problem solving style, which was innate and highly resistant to change (Kirton, 2003) was measured by a psychometric inventory titled Kirton Adaption-innovation Inventory (KAI). Introduced in 1976, the self-reported KAI made up of 32 statements, where subjects indicated *how easy* or *how difficult* it would be for them to behave consistently over time. The subscales were: efficiency, rule/group conformity and originality.

Sampling

In conducting this study, the researcher sought the inclusion of two populations of interest: instructors and the students that these instructors taught. Instructors were first selected and based on them satisfying the criteria for the study. Six faculty members were chosen to participate out of 21 professors at [State University] who met the researchers' criteria for the study. The inclusion criteria were set *a priori* and included the following: taught in a designated college, labeled as a 4000-level or lower course, included 25 to 50 students per class who met in a traditional classroom, and had problem-solving activities as evidenced from collected syllabi.
The first six faculty members who had the most extreme scores on both the adaptive and innovative end of the continuum were selected. Faculty members with extreme KAI scores were preferred to allow for more variance across the continuum of adaption and innovation. The student population for this study comprised all undergraduates enrolled in the previously selected classes taught by these faculty members. The accessible sample of six classes totaling 159 students represented the undergraduate sample needed for the study.

RESULTS AND FINDINGS

Faculty Cognitive Styles

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

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

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

Students Cognitive Styles

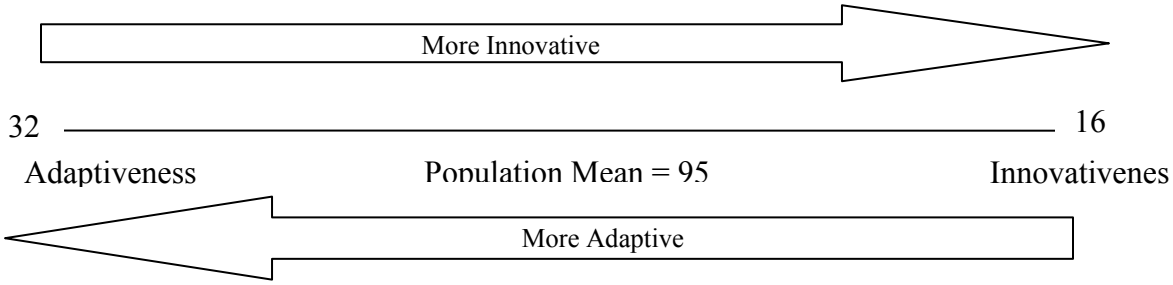
The total mean cognitive style for Class One student respondents was more adaptive (M = 88.65, SD = 11.43, n = 20). However, this mean deviated with a 6.35 point difference from the standardized mean of 95 (Kirton, 2003). The most adaptive students in Class One scored a 72 on the KAI and the most innovative student scored a 110. The mean for the total cognitive style indicated that the scores marginally exceeded Kirton's average of 95 (M = 97.96, SD = 10.29, n = 24) which meant that Class Two was more innovative than Kirton's standardized population by 2.96 points; the most adaptive students score 77 on the KAI, while the most innovative scored 119. The mean for Class Three (M = 94.50, SD = 12.55, n = 22) was similar to Kirton's standardized mean of 95 points; the most adaptive student scoring 72 and the most innovative scoring 119 points. The mean for Class Four was 99.25 (SD = 13.30, n = 20), which, in comparison to the Kirton's standardized average, was more innovative by 4.25 points. A score of 72 was reported for the most adaptive respondent and 123 for the most innovative student. From the students in Class Five, who completed the KAI, the mean of 90.79 (SD = 10.83, n = 24), indicated that the class was more adaptive than the general population by 4.21 points. The most adaptive student scored 70 and the most innovative student scored 110. The total cognitive style mean of 104.45 (SD = 14.56, n = 22) indicated that Class Six was, on average, more innovative by 9.45 points than the established mean of 95 points for the general population (Kirton, 2003). As tabulated in Table 2, the most innovative person in Class Six scored 135 on the KAI; while the most adaptive had had a score of 74 points.

The mean cognitive styles gap for All Student was 14.93 (SD = 10.36). This meant that from the combination of the six classes (n = 132) that were studied in a college of agriculture at [State University] the average student had a 14.93 point cognitive style gap with his or her instructor. See Table 2 for findings specific to student cognitive styles.

Cognitive Style Gap Between Student and Faculty

To compute the cognitive-style gap between the faculty member and the student, the cognitive style score of the faculty (F) was subtracted from the student (S) score (Gap = S – F). The resulting difference between the cognitive style scores defined the width of the cognitive gap; thus the assignment of a numerical value which represented the dissimilarity that existed between each student and instructor by whom he or she was taught. As the resulting positive or negative number represented the direction of the cognitive-style gap, the score difference represents the depth of the gap, as illustrated by Figure 1. Negative numbers indicated that the student was more adaptive than the instructor and positive numbers signified that the student was more innovative than the instructor.

Figure 1: KAI continuum of cognitive style (Kirton, 2003).



The *more adaptive* is represented at the left end of the cognitive style continuum where there are lower numbers, with a theoretical score ranging from 32. The right pole with higher numbers is where the *more innovative* are represented. The theoretical score goes up to 160. An intermediate score can also be determined, with a population mean score of 95.

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

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

Table 2: All Student Mean Scores of Cognitive Style Constructs by Course (n = 132)					
Courses	Constructs	Mean	SD	Min	Max
Class All (n = 132)	Total cognitive style	95.95	13.07	70	135
	Sufficiency of originality	42.71	6.68	27	60
	Efficiency	18.40	4.35	7	27
	Rule/Group conformity	34.83	7.75	19	55

Note. Cognitive style gap scores were calculated by subtracting students' cognitive style scores on the KAI from an individual instructor's score on the same instrument. Lower scores signified more adaptive and higher scores signified more innovative.

The largest average cognitive-style gap was in Class One, which was 24.65 (*SD* = 11.43); suggesting that on average, students were 24.65 points more innovative than the faculty member who taught them. For this class, the most adaptive student had an eight point greater innovative cognitive style score than the faculty member's cognitive style score. In comparing the instructor and the most innovative student who had a score of 110 in this class, there was a *46* point gap to the faculty member's KAI score. Kirton (1999) pointed out that with large cognitive style gaps of 20 points or higher between individuals' scores, there were communication and collaboration problems. The larger the difference, the wider the gap and the more effort and tolerance that was needed (Kirton, 2003) by the student to cope with the stressful encounter. Three quarters (n = 15, 75%) of the students measured for this class, had a cognitive style gap at or above 20 points.

The total cognitive style gap mean specified by Class Six was -2.55 (SD = 14.56), which was the smallest average cognitive-style gap. In other words, the average student in Class Six was 2.55 points more adaptive than his or her instructional faculty. The lowest total cognitive style gap score which belonged to a more adaptive student in the class was 74. Eighteen percent of students in this class had a gap score of 20 or more points compared to the faculty member's score.

The mean cognitive styles gap for all students was 14.93 (SD = 10.36). This meant that from the combination of the six classes (n=132) that were studied; the average student had a 14.93 point cognitive style gap with his or her instructor. The largest gap score was 46 points higher than the average professor's. The smallest gap score was 0 points, indicating no cognitive style gap. See Table 3 for findings of student mean scores of cognitive style gap constructs by course.

Cognitive–style Gaps and Learning Strategies

In both Class One and Class Two, there were no significant relationship found between cognitive gap and use of learning strategies, which may have indicated these students were not coping to learn from their instructor. For Class Three students, as the cognitive gap increased for both the more adaptive and the more innovative students, there was an association with the increased use of more *total resource management* ($r = .44$, $p < .05$) learning strategies.. However, there was a significant negative association between a larger cognitive style gap and less *organization* ($r = -.45$, $p < .05$). It may be inferred from these relationships that students

with high cognitive style gaps were using more learning strategies to learn course content. The negative correlation between cognitive style gap and *organization*, which was opposite of the correlations found with uses of other learning strategies (for example with help seeking where there was a significant, positive relationship of 0.48), indicated that the professor may have been bridging the cognitive gap and organizing for the students, and that the students were using motivated strategies for learning in order to overcome the cognitive gap.

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

Courses	Mean	SD	Min	Max
Class One	24.65	11.43	8	46
Class Two	-12.04	10.29	-33	9
Class Three	7.50	12.55	-15	32
Class Four	-2.75	13.30	-30	21
Class Five	17.79	10.83	-3	37
Class Six	-2.55	14.56	-33	28
All Students	14.93	10.36	0	46

In Class Four, for both the more adaptive and the more innovative, a larger cognitive style gap was associated with greater use of motivated strategies for learning. There was an association between gap and *elaboration* ($r = .54$, $p < .05$) and another association was found between gap and *effort regulation* ($r = .55$, $p < .05$). These relationships indicated that students in this class may have bridged the cognitive style gap through use of learning strategies. In Class Five, as cognitive gap widened for both the more adaptive and the more innovative, associations were found with reduced management of *time and study environment* ($r = -.42$, $p < .05$) This finding provided evidence that students with larger cognitive gaps were also related to less management of *time and study environment* and therefore not focused on bridging the cognitive style gap to learn.

All the correlations for Class Six between cognitive gap and learning strategies were inversely related, though they were significant. Associations were found between *organization* and gap ($r = -.51$, $p < .05$) as well as *effort regulation* ($r = -.69$, $p < .05$) and *meta-cognitive self regulation* ($r = -.59$, $p < .05$). Findings from this class indicated that the larger gaps for the more adaptive and the more innovative were associated with less *learning strategies* utilized by the students. That is, students may not have been bridging the cognitive style gap through the use of learning strategies and may have been less engaged in learning based on the larger cognitive style gap. Instead of focusing on learning and applying ways of overcoming the cognitive gap, students in Class Six may not have been using other methods to deal with the cognitive gap. For All Students, combining all six classes with absolute cognitive style gap scores, the data did not indicate that there were significant associations with learning strategies (see Table 4).

CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

Unless an instructor specifically selects students by cognitive style, we may assume that every course instructor will have students who share at least a 20-point cognitive-style gap, which may affect communication, working together, and trust (Kirton, 2003). Kirton also claimed that with wide cognitive gaps, a greater effort to change behavior (not style) would be required of those experiencing the gap. Therefore, where wide cognitive-style gaps exist, it was implied that in order to facilitate learning, faculty may have to exercise coping behavior. It is recommended to conduct studies to identify coping behaviors of instructors to ascertain this implication.

Table 4: Correlations between Cognitive Style Gap and Student Learning Strategies (n = 132)

Learning Strategy	Class One	Class Two	Class Three	Class Four	Class Five	Class Six
Total meta – and -cog strategies	.15	-.13	-.08	.49*	-.27	-.47*
Rehearsal	-.10	-.12	-.22	-.08	.22	-.37
Elaboration	.26	-.09	.04	.54*	-.04	-.40*
Organization	.37	-.24	-.45*	.35	-.27	-.51*
Critical thinking	.02	.14	.36	.61	-.13	.01
Self-regulation	-.20	-.20	.08	.37	-.33	-.59*
Total resource management	-.37	-.18	.44*	.32	-.05	-.41*
Time & study Environment	-.39	-.09	.19	-.05	-.42*	-.18
Effort regulation	-.36	-.14	.35	.55*	-.33	-.69*
Peer learning	-.12	-.02	.24	.15	.06	-.32
Help seeking	-.18	-.39	.48*	.18	.25	.06

Note. * $p < .05$

Instructors should be made aware that theoretically, they will have more adaptive students who may ask for more detailed instructions to complete assignments. Likewise, the more innovative may ask for more flexibility to complete the assignments. This difference should not be misinterpreted as associated with intelligence, but as a style preference. However, in considering how to cope for the more adaptive and the more innovative, the instructor should not sacrifice rigor and expectations (cognitive level) for the sake of accommodation.

For the majority of classes, rehearsal was the primary study strategy for learning course material, while positive reinterpretation was the most used coping strategy which students implemented to deal with stress arising from cognitive gap between faculty and student. *Effort regulation*, a resource management strategy, was also prominently used by students to increase understanding of course. Furthermore, it has been implied from the findings that students seemed more comfortable relying on the elementary study strategies than challenging themselves to improve *critical thinking* and *self-regulation* and other meta-cognitive strategies. But it is important to note, according to Ewing (2006), most educational discourse at the college level is

at lower levels of cognition. Obviously critical thinking and self-regulation strategies will not be employed by the student if they are not being prompted in the classroom.

The findings previously described for this study provided evidence that there may be other intervening variables that determine the applicability of A-I theory in these undergraduate courses. Friedel and Rudd (2009) found the same when examining dissimilar cognitive style and student engagement; in which they speculated that this intervening variable may be the instructor's ability to motivate students to bridge the cognitive style gap for the purpose of learning. Likewise, the researchers in this study found that in some classes, there was an association with larger cognitive style gaps and with more coping and use of more motivated strategies for learning.

It may be that classes were contextual, and that A-I theory may apply to each course in different ways, given the variance in level of instruction, coping behavior exhibited by the instructor, instructional methods used by the instructor, topic of the course, and learning strategies and expectations promoted by the teacher. Instructors should develop adaptive and innovative strategies to learn the content and teach these strategies to students. More research was needed to confirm findings and to examine how instructors can motivate students to use learning strategies with the present cognitive style gap. Further analysis may also be warranted regarding adaptive versus innovative cognitive-style gaps.

Meta-cognition is critical for learning, particularly in environments that provide little external structure, because it is the mechanism through which individuals monitor their progress, determine when they are having problems, and adjust their learning accordingly (Ford, Smith, Weissbein, Gully, & Salas, 1998). This has many of implications for the more adaptive students who may be taught by more innovative professors. One implication was that if instructors did not provide the structure that was necessary for the more adaptive students, they may engage in more meta-cognition than the more innovative students in that class. It would be useful to investigate instances where meta-cognition was used more.

In four classes (One, Two, Five, and Six), negative correlations were found indicating that students with a larger cognitive-style gap may have used learning strategies to a lesser extent. In this case, Kirton's (2003) A-I theory provides explanation that students in these classes may have not been motivated to learn from their respective instructors because of a larger cognitive-style gap. However, it is important to note that Classes One and Two did not have significant correlations, which provided evidence of no relationship. Given this finding, it would be useful to replicate this study with a qualitative component to verify if indeed these students were deterred from learning as a result of the cognitive style gap.

In two of the six classes (Classes Three and Four) there was evidence (positive correlations) to support that a relationship existed between cognitive-style gaps and learning strategies. Although in these two classes, one might expect negative correlations; as Kirton (2003) suggests that cognitive-style gap may cause stress and inhibit communication. However, it seems that the students enrolled in this class were highly motivated and used specific learning

strategies to overcome the cognitive-style gap. This finding is indeed consistent with Kirton's A-I theory as he discusses the importance of a diversity of cognitive styles to work together in learning and solving problems. Specifically, Kirton argues that if motivation is great enough, the group will bridge the cognitive-style gap and be successful. Given this finding, more research is needed on two fronts. First, to identify what these two faculty members were doing to motivate students beyond their preferred cognitive style. Second, research is needed to identify if specific learning strategies become predominantly the ones chosen by students to learn from instructors with dissimilar cognitive gap.

Stressful encounters resulting from cognitive-style gap has not indicated that students were not doing well academically. Student performance, related to learning was not investigated in the study and as such may need further research. Because of the numerous factors which influence student learning, like response to varied teaching methods, motivation, attitude towards learning, ability or disability and learning environments, educators who are knowledgeable of the style differences with their students, may increase learning diversity for their students. Additional research would be needed to produce evidence of this.

The findings of this study are important in further verifying the relationship between cognitive gap and study strategies. They are relevant for instructors, whether their cognitive style is more adaptive or more innovative. The findings of this study should also be meaningful to students, who may have perceived themselves to be limited by categorical labeling of learning styles; who feel that they may not be able to learn outside of the instructional method that suit the category in which they have been placed.

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