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Quality perception and the championship effect: Do collegiate sports influence academic rankings?

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Abstract

This study finds that the average college ranking from *U.S. News & World Report* for the two years after winning a national championship in football or basketball is significantly improved compared to the two years before. Consistent with increased applications, acceptance rates are lower and SAT scores are higher. However, in a larger sample that includes schools that did not win a championship, a relationship between sports performance and academic rank was not found. These results bring into doubt the effectiveness, or at least efficiency, of pursuing success in major sports programs as a means to improve academic ranking.

Keywords: School Choice: Retention; College Rankings; Sports

1. Introduction

Rankings have become an American obsession, even in academe (Arenson, 1997). In higher education, the growing demand for rankings is fueled by several trends including higher costs and the view of students as consumers. Rankings of colleges play an increasingly important role as information tools for prospective students, as well as marketing devices for institutions. Rankings are publicly visible performance scorecards and winners in the ranking game widely publicize the results.

A change in rankings can have a significant impact on an institution's success. Monks and Ehrenberg (1999) found that a drop in college rank leads to a declining applicant pool, resulting in the university accepting a greater percentage of applicants and a generally lower quality of the entering class. Improved rankings are used to attract students, increase alumni donations, recruit faculty members and administrators, and to attract new benefactors. In general, quality rankings tend to change rather slowly. Grewal, Deardon and Lilien (2008) found university ranks are sticky and difficult to change.

Most rankings of U.S. higher education institutions are produced by magazines and newspapers. The *U.S. News & World Report* college rankings are the oldest and most widely used benchmarks for relative school performance. The publication began ranking American colleges in 1983 and the rankings became an annual event starting in 1987. Their rankings are based on a multidimensional methodology using a weighted combination of seven broad indicators of quality. Because of the importance of educational rankings and the subjective nature of measuring educational quality, the various methodologies employed to determine rank have been widely scrutinized. For example, the *U.S. News & World Report* rankings have been criticized for emphasizing resources and reputation and not being reflective of student learning (Carey 2004; Kuh and Pascarella 2004).

1.1 Link to Sports

When the University of Florida won the national championships in both football and basketball in 2006, they received 25,400 applications the following year, which was an eight percent increase over the previous year (Kipp, 2007). Collegiate athletics provide visibility and potentially play a key role in marketing the institution. Successful programs that compete for championships effectively get free three-hour commercials on national television. Kipp (2007) reported that universities that had recently won a football or basketball championship had an increase in applications for admission and in some cases, alumni support and donations also increased. After winning a national championship, Kipp describes that, the students, faculty, and staff get very excited, and there is a general good feeling about the university.

As a consequence of national exposure and positive publicity, potential new students may find a university more attractive. Ehrman and Marber (2008) found that when a school was successful in sports, almost unanimously applications for admission increased. Holmes (2009) found that alumni donations at a private liberal arts college increased in years when the college achieved greater athletic prestige measured by the win-loss record of the men's hockey team. Monks (2003) found a number of extracurricular activities, including intercollegiate athletics, are correlated with alumni giving. Roy, Graeff and Harmon (2008) examined the effects of a university's move to NCAA Division I-A football and found that it can create a positive image for a university, attract students, foster alumni involvement, and enhance school spirit.

2. Hypothesis Development

Since winning a football or basketball national championship brings positive publicity and an increase in applications, the university can increase enrollment and/or be more selective. If, as is the case at many large institutions, enrollment numbers are relatively fixed, larger applicant pools provide the opportunity to select higher SAT applicants. The higher quality of incoming students may consequently improve retention and graduation rates. In addition, winning a national championship can foster student involvement and enhance school spirit, and the resultant increased student engagement can further improve retention and graduation rates. All of these factors should contribute to an improvement in overall university rankings.

Thus, this study's hypothesis is that the average of overall college ranking from the two years after winning a national football or basketball championship will be improved (a lower rank number) compared to the average ranking from two years before. The opportunity for greater selectivity after a championship is expected to result in lower acceptance rates and resultant increases in SAT scores and improved retention. This study also examines whether a link between successful sports programs and overall college ranking is limited to winning a championship by testing whether average levels of sports performance are related to academic rankings. If improvements in sports performance lead to higher academic rankings, then higher average levels of national sports rankings are expected to be positively related to academic rankings. Finally, it is hypothesized that improvement in sports performance, measured by national ranking, will be followed by improved academic ranking.

3. Data and Methodology

The data set began with a list of universities that won a NCAA Division I national championship in either basketball or football from 1992 to 2006. This period was based on data availability and the need for consistency in how the *U.S News & World Report* college rankings were reported. Football and men's basketball were selected as the two highest profile and revenue generating collegiate sports. Table 1 lists the championship schools for each year. When two universities shared the national football title both schools were included in the sample. [Insert Table 1 here]

In typical event-study methodology, the year of a championship was considered t=0. Ranking data was collected from *U.S. News & World Report* for the two years before and two years after the championship. The college guidebooks are published in late August or September and their covers are dated one year ahead. Hence, if a university won a championship in 2004, ranking data was collected from guidebooks dated from 2003 to 2007. Data from the 2005 issue (coinciding to the 2004 championship) was considered t=0 and not utilized. The two-year window on both sides of the championship was selected to reflect that the publicity and attention from a championship might take a couple of years to be reflected in ranking data that includes quality perceptions and actual student behavior. One-year and three-year windows were also investigated.

All of the universities in the sample were categorized as national universities based on the Carnegie Foundation classifications. The overall score reported by *U.S. News & World Report* was based on seven weighted measures of quality: peer assessment (25%), graduation and retention rates (20%), faculty resources (20%), student selectivity (15%), financial resources (10%), alumni giving (5%), and graduation rate performance (5%). Based on this overall score, schools were listed in descending order with a lower rank number corresponding to higher quality. If no individual numerical rank was given for a second, third or fourth tier school, then the midpoint rank of that tier was used. This was a weakness in the methodology. However, approximately half of the schools in the study were assigned a unique ranking in the first or second tier and none of the schools that won championships jumped from one tier to another. When a subset of the data that included only schools with unique numerical rankings was used, the results did not substantively change.

In addition to recording the overall rank, six of the individual quality measures reported by *U.S. News & World Report* that were available throughout the sample period were also utilized. Peer reputation was based on the mean response on a survey of top academics (university presidents, provosts, and deans of admissions) who were asked to rate each school's academic performance on a scale of 1 (marginal) to 5 (distinguished). Freshman retention was the average percentage of freshmen who returned the subsequent fall. The graduation rate was calculated as the percentage of students who earned a degree in six years or less. The SAT score was recorded as the midpoint of scores of students who were admitted and enrolled in the previous year. The acceptance rate was the percentage of applicants who were admitted during the previous year. Finally, the alumni giving rate was calculated as the average percentage of living alumni who donated to their school during the previous two years.

4. Results

4.1 Impact of Winning a Championship

Table 2 reports the mean academic ranking for colleges two years prior and two years after winning a national football championship. The average rank number is lower (mean difference = -6.87) indicating a clear improvement in overall quality after winning a championship. Based on a paired t-test, this is a statistically significant difference at the 4% level. Since the comparison is of rankings, a more appropriate nonparametric test is the Wilcoxon signed rank test, which is significant at the 6% level.

[Insert Table 2 here]

Table 2 also reports the average for each of the individual quality measures for the two years prior and two years after winning a national football championship. Based on a paired t-test, there is no significant change in peer reputation or alumni giving. Consistent with a greater number of students applying to these colleges after winning a championship, there is a significant decline in acceptance rates (mean difference = -3.60%). Correspondingly, the SAT scores are higher (mean difference = 26.5), along with improved freshman retention (mean difference = 0.97%), and graduation rates (mean difference = 3.42%).

Table 3 reports the mean academic ranking for colleges two years prior and two years after winning a national basketball championship. The overall rank of these colleges improved with a mean difference of 7.47 after winning the title. This difference is significant using the Wilcoxon signed rank test at the 5% level. Similar to the football championships, the results are consistent with more students applying to these schools. The acceptance rates are significantly lower (mean difference = -3.62%) and correspondingly the average SAT scores are higher (mean difference = 19.7) and freshman retention and graduation rates are improved (mean differences of 1.23% and 3.00% respectfully).

[Insert Table 3 here]

When the above analysis was repeated using only one year before and after the championship, the results were qualitatively the same, but at a lower level of significance. The increased publicity and attention from a championship could take a number of years to be reflected in these quality measures. Similarly, when the observation period was increased from two to three years before and after the championship, the same trends were observed, but again with a lower level of significance. This can be explained by the greater noise and confounding factors inherent in a longer event-study window.

Overall, the evidence indicates that national championships in football and basketball improve academic ranking in the *U.S. News & World Report*. This relationship seems to be driven by an increase in applications for admission and the related improvements in SAT scores and freshman retention. Interestingly, the six-year graduation rate also improves in the two years following the championship. The timing of the championship and the measurement of the graduation rates does not allow for the increased selectivity to impact graduation rates. This is potential evidence that a major sports championship increases the engagement of all enrolled students and makes it less likely that junior and senior level students leave the university before they graduate. Given that championships not only make schools more desirable to incoming students, but also may improve the engagement of already enrolled students, promotion of major sports programs might be an important recruitment and retention strategy for higher education institutions. In order for success in sports to be an efficient strategy to improve academic

rankings, success may need to be defined beyond the unlikely event of winning a national championship. The next section details tests to determine whether success in sports programs, other than winning a championship, is effective in influencing academic quality perception.

4.2 Tests for the Impact of Football Rankings

If successful sports programs improve academic rankings, a positive relationship should exist between sports ranking and academic ranking. Because football and basketball yielded consistent results in the previous section, only NCAA Division I football rankings were used for this part of the study. All schools with teams that finished at least one season within the top 20 in the Sagarin *USA Today* football ratings (Sagarin, 2009) from 1998 to 2006 were initially included in the sample. Five schools with top twenty finishes (Air Force, Boise State, Fresno State, Marshall, and Notre Dame) were omitted because they were not included as national universities in the *U.S. News & World Report* rankings. The final sample included 55 universities.

The mean Sagarin ranking over the nine-year period was compared with the mean *U.S. News & World Report* ranking over a comparable nine-year period. As in the previous section, a two-year lag was used to allow for the impact of sports performance, with an additional one-year adjustment because the *U.S. News & World Report* College Guidebooks are dated and published one year in advance. Thus, the study used academic performance measures from *U.S. News & World Report* from publications dated 2001- 2009. Table 4 shows the mean values of football and academic rankings as well as the mean values for the six individual academic quality measures for each of the 55 schools.

[Insert Table 4 here]

Cross-sectional Spearman correlations, appropriate for ranked data, were calculated between the mean football ranks and the academic data. Contrary to the study's hypothesis, no significant relationships exist between mean levels of sports performance and mean levels of academic ranking or the components of the rankings. Although winning a championship appears to move the *U.S. News & World Report* ranking, schools with higher levels of football performance do not enjoy better (or worse) levels of academic ranking.

Further tests were conducted to determine whether improvements in sports performance change academic rankings. For each of the 55 institutions, a time-series correlation was calculated between the end-of-the-season Sagarin ranking with the lagged *U.S. News & World Report* ranking (2001- 2009). The correlations of the football rankings with the six related components of academic ranking were also calculated. The resultant cross-sectional mean values for each of the correlations are reported in Table 5.

[Insert Table 5 here]

The results indicate that improvement in football ranking does not significantly impact the *U.S. News & World Report* academic ranking. There is a significant positive relationship between football ranking and freshman acceptance percentages. Consistent with the results relating to championships, improved football performance (a lower rank number) is related to lower percentages of freshman acceptance rates. Presumably, the increased number of applications due to positive publicity drives this result. However, unlike the results relating to

winning a championship, there is no evidence that increased SAT scores, improved freshman retention, or increased six-year graduation rates follow improved football performance.

5. Discussion and Conclusion

Given that Grewal, Deardon and Lilien (2008) found that university ranks are fairly sticky and difficult to change, finding that overall college ranks significantly improve after a football or basketball championship is worthy of note. Grewal et al. found that, on average, a university's rank will be within four units of its rank the previous year with greater than 90% probability. This study documents a mean improvement in overall rank of 6.87 for football and 7.47 for basketball measured from two years before a championship to two years after.

The results on individual quality measures are consistent with the increased publicity and attention of a national championship resulting in an increase in applications for admission. This is supported by previous research by Kipp (2007) and Ehrman and Marber (2008). With a larger application pool, there is an opportunity for greater selectivity, which is reflected in significantly reduced acceptance rates. If the number of enrollments is relatively fixed, the larger number of applications means the school can select from higher SAT applicants and the higher academic quality can result in improved retention.

These results could be used to support criticism of the *U.S. News & World Report* college rankings. Carey (2006) claims that the rankings are largely a function of fame, wealth and exclusivity and not reflective of how well the schools educate their students. There is a movement towards shifting the conversation about collegiate quality away from resources and reputation and towards indicators of student learning and graduation rates (Pascarella 2001; National Survey of Student Engagement 2004).

Although increased selectivity can help explain the improved freshman retention rates, there was not sufficient time in the event study window for the greater selectivity of admissions to impact six-year graduation rates. Thus, it is likely that other factors, such as a sense of belonging, involvement and pride were contributing to the students' success. Kipp (2007) reported that winning a national championship excites faculty, students and staff, and the whole campus can become more upbeat and optimistic. Roy, Graeff and Harmon (2008) found that success in sports can foster involvement and enhance school spirit. Numerous studies have reported links between student engagement and increased retention and graduation rates (Kuh 2001; Pascarella and Terenzini 2005; Reason, Terenzini and Domingo 2006; Tinto 1993). Engagement is enhanced when students feel connected to something and they have a sense of belonging to a community (Leonhardt 2005; Ostrove and Cole 2003; Walpole 2003). The excitement of winning a national championship can bring a sense of pride, community and belonging.

Despite the apparent positive impact of a national championship in football or basketball, the results bring into doubt the effectiveness, or at least the efficiency, of pursuing success in major sports programs as a means to improve academic ranking. The study does not find a relationship between the mean level of football ranking and academic ranking. Nor do improvements in football ranking improve overall college ranking. It appears that schools with higher levels of sports performance, or improved performance, do not garner improved levels of academic ranking – unless they win the championship.

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Table 1

Football and basketball national champions (1992 - 2006)

Year	Football	Basketball

1992	Alabama	Duke
1993	Florida State	North Carolina
1994	Nebraska	Arkansas
1995	Nebraska	UCLA
1996	Florida	Kentucky
1997	Michigan	Arizona
	Nebraska	
1998	Tennessee	Kentucky
1999	Florida State	Connecticut
2000	Oklahoma	Michigan State
2001	Miami (FL)	Duke
2002	Ohio State	Maryland
2003	LSU	Syracuse
	USC	
2004	USC	Connecticut
2005	Texas	North Carolina
2006	Florida	Florida

Table 2
Mean results before and after NCAA football championships (n=17)

	Overall Rank	Peer Reputation	Retention Percentage	Graduation Percentage	SAT Midpoint	Acceptance Percentage	Alumni Giving
Mean from two years before (B2)	77.53	3.52	83.63	57.84	1154.0	69.05	17.9
Mean from two years after (A2)	70.66	3.53	84.60	61.26	1180.5	65.45	17.5
Difference in means (A2-B2)	-6.87	0.01	0.97	3.42	26.5	-3.6	-0.4
Standard deviation	13.47	0.094	1.099	4.595	25.39	5.688	4.887
t-value (paired t-test)	-2.22	0.44	3.86	3.24	4.55	-2.76	-0.31
p-value	.0392	.6656	.0012	.0044	.0002	.0128	.7368
Wilcoxen Signed Rank Test (Z)	-1.90						
p-value	.0572						

Table 3
Mean results before and after NCAA basketball championships (n=15)

	Overall Rank	Peer Reputation	Retention Percentage	Graduation Percentage	SAT Midpoint	Acceptance Percentage	Alumni Giving
Mean from two years before (B2)	63.47	3.59	87.27	69.19	1204.5	56.84	17.8
Mean from two years after (A2)	56.00	3.60	88.5	72.19	1224.2	53.22	19.1
Difference in means (A2-B2)	-7.47	0.01	1.23	3.00	19.7	-3.62	1.31
Standard deviation	14.45	0.068	1.498	1.844	27.23	5.99	2.60
t-value (paired t-test)	-2.07	0.54	3.19	6.51	2.90	-2.42	1.81
p-value	.0564	.6052	.0066	.0002	.0110	.0288	.0952
Wilcoxen Signed Rank Test (Z)	-1.98						
p-value	.0478						

Table 4
Spearman correlation of mean football ranks with mean values of academic performance (n=55)

	Mean Results from 1998-2006 (Football Rank) and 2001-2009 (*U.S. News and World Report* Data)							
University	Football Rank	Academic Rank	Peer Reputation	Retention %	Graduation %	SAT Midpoint	Acceptance %	Alumni Giving
Alabama	37.11	92.00	3.02	83.44	61.33	1177.8	78.78	26.00
Arizona	57.56	95.78	3.60	77.67	55.22	1106.7	84.44	9.33
Arizona State	42.56	147.67	3.29	76.22	52.11	1096.7	86.78	11.67
Arkansas	32.67	144.78	2.76	80.78	50.22	1255.6	81.44	21.11
Auburn	25.11	92.11	3.04	83.00	65.56	1191.7	79.67	22.11
Boston College	34.89	38.11	3.53	94.89	88.33	1316.7	31.44	24.89
BYU	49.00	83.22	3.03	91.33	71.89	1355.6	71.22	20.33
California	44.11	20.67	4.77	95.89	85.22	1317.2	25.00	15.67
Clemson	35.00	78.44	3.07	87.11	72.89	1200.0	58.67	24.56
Colorado	40.11	82.11	3.56	83.22	65.89	1224.0	83.67	11.00
Florida	13.11	62.22	3.59	92.44	75.22	1243.3	54.67	17.89
Florida	11.44	103.22	3.07	86.22	64.56	1159.0	60.67	16.44

State								
Georgia	18.22	68.89	3.44	91.33	71.56	1213.3	62.89	17.67
Georgia								
Tech	28.22	38.22	4.02	89.56	71.78	1333.1	63.56	32.56
Illinois	72.89	39.89	4.07	92.00	79.67	1383.3	66.56	12.78
Iowa	42.22	71.00	3.64	83.11	65.11	1230.6	83.33	14.11
Kansas								
State	26.00	145.11	2.88	78.78	55.44	1172.2	66.00	22.00
Louisville	35.00	184.33	2.61	74.11	35.44	1152.8	77.00	13.00
LSU	25.00	153.00	2.82	84.33	57.22	1213.9	77.22	17.67
Maryland	41.11	65.78	3.69	91.22	71.00	1263.9	48.67	14.89
Miami-								
Florida	13.00	66.67	3.19	86.33	67.67	1226.1	45.33	15.00
Miami-								
Ohio	71.11	72.67	3.32	90.00	79.78	1322.2	73.67	18.11
Michigan	12.78	25.00	4.52	95.67	84.89	1411.1	54.33	14.67
Michigan								
State	46.33	78.00	3.52	89.11	69.89	1216.8	71.67	14.78
Minnesota	40.33	74.44	3.77	84.56	55.67	1263.9	70.33	11.67
Mississippi	55.11	156.89	2.69	77.00	52.89	1158.3	76.78	15.00
Mississippi								
St.	71.11	156.89	2.40	80.00	54.89	1166.7	72.33	14.67
Missouri	53.63	87.63	3.34	84.25	65.25	1300.0	87.75	10.25
Nebraska	22.89	101.78	3.17	80.33	57.00	1225.0	75.89	23.00
N. C. State	41.11	85.56	3.14	89.22	65.67	1183.9	62.22	23.33
Ohio State	13.78	69.33	3.70	86.00	62.22	1280.6	71.33	16.33
Oklahoma	13.22	112.56	2.99	82.78	54.33	1261.1	87.44	20.00
Oregon	28.22	114.11	3.34	82.89	62.00	1110.1	88.44	13.67
Oregon								
State	32.89	156.89	2.96	80.00	59.22	1077.2	87.33	15.22
Penn State	33.44	47.56	3.82	92.67	82.22	1191.1	54.11	20.89
Purdue	31.67	71.67	3.80	86.78	65.44	1136.7	80.33	17.56
South								
Carolina	53.67	105.00	2.97	82.56	61.00	1136.1	66.33	22.78
Southern								
Miss	50.78	191.56	2.19	73.11	46.67	1052.8	57.33	14.44
Stanford	53.44	5.67	4.90	98.00	93.33	1450.6	12.56	38.11
Syracuse	54.22	64.22	3.38	91.44	77.89	1213.9	59.78	20.11
TCU	58.11	99.67	2.71	82.22	65.78	1157.2	66.89	26.89
Tennessee	18.89	93.44	3.16	78.22	58.11	1211.1	68.89	15.22

Table 4 (continued)
Spearman correlation of mean football ranks with mean values of academic performance (n=55)

	Mean Results from 1998-2006 (Football Rank) and 2001-2009 (*U.S. News and World Report* Data)							
University	Football Rank	Academic Rank	Peer Reputation	Retention %	Graduation %	SAT Midpoint	Acceptance %	Alumni Giving
Texas	10.56	49.00	4.08	91.00	72.33	1221.1	55.44	12.89
Texas A&M	34.44	67.56	3.56	89.33	74.67	1185.0	71.00	19.89
Texas Tech	31.44	156.89	2.71	80.78	52.44	1101.1	70.89	22.78
Toledo	65.78	218.89	2.26	70.78	42.78	1086.1	94.67	8.78
Tulane	97.11	45.89	3.44	86.00	73.33	1335.1	55.00	22.89
UCLA	31.56	25.44	4.28	96.67	85.22	1287.2	25.89	13.89
USC	18.11	30.44	3.87	94.44	78.56	1332.2	29.67	32.67
Utah	44.67	115.33	3.11	76.89	53.67	1191.7	88.67	11.56
Virginia	14.67	80.00	3.41	88.00	74.44	1190.6	68.67	18.89
Washington	48.00	45.00	3.94	91.00	71.89	1181.1	73.00	15.33
Washington St.	45.89	107.33	3.03	83.78	60.44	1072.2	78.44	19.44
West Virginia	37.00	156.89	2.70	78.67	56.00	1079.7	92.22	10.44
Wisconsin	23.33	34.78	4.22	92.00	77.67	1383.3	65.11	13.89
Spearman Correlation		.150	-.186	-.190	-.082	-.128	.191	-.130
p-value		.2645	.1651	.1572	.5419	.3421	.1544	.3340

Table 5
Cross-sectional mean of time-series Spearman correlations between football rank and measures of academic quality (n=55)

Spearman Correlation	Academic Rank	Peer Reputation	Retention %	Graduation %	SAT Midpoint	Acceptance %	Alumni Giving
Mean	-0.001	0.068	0.056	0.070	.081	0.149	0.080
t-value	-0.003	1.489	0.892	1.156	1.281	3.012	1.247
p-value	0.998	0.142	0.376	0.253	0.205	0.004	0.218

Student satisfaction and persistence: factors vital to student retention

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ABSTRACT

The purpose of this study was to investigate students' perceptions of services, interactions, and experiences in the College of Education and Psychology at a research-intensive university located in the southern region of the United States. Data were collected relative to participants' perceptions for university experiences and services. The constructs included academic advising, social connectedness, involvement and engagement, faculty and staff approachability, business procedures, learning experiences, and student support services. The results of the study indicated that students who did not return for the Fall 2008 semester or changed majors to another area had statistically significant lower perceptions of social connectedness and satisfaction with faculty approachability than students who returned.

Keywords: retention, persistence, student, satisfaction, involvement, experiences

INTRODUCTION

Many students who endeavor to earn a college degree fail to persist until graduation. Although institutions have responded to student retention issues by implementing programs and services, retention rates have not improved (Seidman, 2005a). The typical six-year graduation rate for most public institutions in the United States ranges between 50 – 56% (Berkner, He & Cataldi, 2002; Crosling, Thomas, & Heagney, 2008; Mortenson, 2005). Low retention rates not only impact students and institutions that must bear the economic burden connected to premature departures, but also the ability of a nation to "compete in a global economy" (Friedman, 2005; Seidman, p. xi, 2005a). Now more than ever, higher education administrators must be cognizant of the reasons why students depart from institutions of higher learning prematurely and what can be done to help students overcome these barriers so they can achieve their academic and career goals. Additional research is required to determine strategies to address this issue (Tinto, 2005).

RELATED LITERATURE

Ways of Measuring Retention

Many methods and formulas assume a dichotomous, institution-based retention—either students stay at an institution or they do not. However, retention can be viewed from multiple perspectives and is not always measured by whether or not a student remains at a particular institution. Hagedorn (2005) has delineated four types of retention: institutional, system, academic discipline, and by course. Institutional retention is the most widely used method employed by colleges and universities. It is a calculation of the percentage of students who return

to the same institution year after year. System retention consists of tracking students and not the institution in which the student is enrolled. This means a student who leaves one college but enrolls at another and completes his studies there is considered retained in the "system" of higher education. This method of retention is very difficult to measure because it requires students to be tracked and is also costly. Retention within an academic major is focused on in retention within a specific academic discipline. Under this method, a student who begins college as an English major and changes his major to mathematics would not be considered retained. While this type of retention is not uncommon among institutions or colleges within those institutions, these measures are not nationally tracked. Retention may also be measured at the individual course level. Measuring retention for individual courses informs college officials of those classes with low levels of student retention even though students who had left the course may still be enrolled at the institution. This method of measuring retention is more complicated than one would assume because one must decide the number of class sessions necessary to constitute retention.

Simply put, it is difficult to define all student enrollment actions as either retained or not retained. Current retention formulas usually exclude part-time students, transfer students, and returning students. Furthermore, universities can be somewhat flexible in determining which students can be counted in current retention measures and results can be somewhat inflated (Hagedorn, 2005).

Academic Advising

Perhaps the most crucial aspect of a student's interaction and engagement with an institution of higher learning is the relationship with his/her advisor. Academic advising should be a process in which faculty and staff interact with students as they develop, allowing and helping them realize what decisions should be made and subsequent actions taken to achieve their educational and career goals. Pascarella and Terenzini (2005) purport that academic advising plays a role in students' decisions to persist and also affects their chances of graduating. Many students who depart prematurely from college often state a poor academic advising experience, and one of the main components of any retention program is an excellent advising program (Tuttle, 2000). Academic advising is much more than just scheduling courses and registering students for classes. Consequently, students take their relationships with their academic advisors very seriously, as they should. Furthermore, academic advising might possibly be, as Hunter and White (2004) suggest, the only organized and structured attempts in which university faculty or staff have sustained interactions with students.

When one considers the mentoring and counseling aspect of academic advising, it becomes obvious that helping students realize their purpose in higher education and why they are pursuing their current educational goals do not simply occur in one or two visits; hence, academic advising is a process that occurs over time with students building relationships with their advisors. Williams, Glenn, and Wider (2008) elaborate on the benefits of these types of relationships stating "This relationship can improve the student matriculation processes and provides students with a sense of security. The relationship also provides a sense of connectedness where students feel that they belong to the school and that the school belongs to them" (p.1).

Social Connectedness

One important factor which affects college students' persistence is that of being socially integrated and connected with others, especially other students. College, for most students, is not only a time of academic pursuits but also an opportunity to explore or enhance themselves as social beings. Colleges should not present a barrier to this process. In fact, while some students desire to finish college, they do not consider themselves to be ultra-academic beings and instead want to partake in endeavors that develop them socially (Moxley, Najor-Durack, & Dumbrigue, 2001). While there is no doubt that the degree of social integration varies from student to student, Bean (2005) states, "Few would deny that the social lives of students in college and their exchanges with others inside and outside the institution are important in retention decisions" (p. 227). Indeed, like most other challenges in life, a person is more likely to accomplish difficult tasks when he/she is in the company of others who are like-minded and facing similar challenges. Since a major part of the college experience is how well the student adapts to unfamiliar surroundings and new people, the same holds true when a student attends college. In fact, Kuh and Love (2000) claim that social integration consists of students' social and psychological comfort with their institutions' surroundings, associations with common groups of students, and a sense of belonging to the institution. These factors provide security which is needed to help students bond with other students to achieve common goals, one of the most important being to persist until graduation.

Involvement and Engagement

Students feel marginalized when they believe they do not fit it in, which leads to negative outcomes such as "self-consciousness, irritability, and depression" (Evans, Forney & Guido-DiBrito, 1998, p. 27). This feeling of marginalization causes students to wonder if they matter. Addressing this issue is important to student retention as it is an antecedent to student involvement in college activities and programs (Schlossberg, 1989).

The most important step to becoming engaged and involved is for students to interact with their peers. According to Schlossberg, students interacting with their peers is a requirement that must occur in order to make participation in campus activities and student organizations meaningful. However, the most important interactions with peers seem to reinforce the academic learning that takes place in the classrooms, and then the benefits of those interactions permeate into other areas of college life (Pascarella & Terenzini, 2005).

Whereas students must experience academic success to remain in college, it is also vital that they become involved and engaged in other areas of college life. Students who do not become socially integrated may or may not suffer from persistence issues, as it largely depends on the individual. Therefore, failing to become involved in campus activities, organizations, and extracurricular activities, which promote involvement and integration of college life, can lead to higher chances of attrition for some students. Consequently, it is imperative for higher education administrators to work diligently to provide students with opportunities to get involved with campus organizations and activities (Tinto, 1993).

Faculty and Staff Approachability

Most scholars agree that the relationships between students and faculty are vital to student success in college (Kuh, Kinzie, Schuh, Whitt, & Associates, 2005) and one of the principal aspects of facilitating these relationships includes faculty approachability. Approachability involves faculty making themselves available and accessible both inside and outside class, especially at key junctures when students need them (Kuh et al., 2005). Many schools and their faculty members attain adequate levels of approachability by keeping regular office hours and promptly answering students' e-mails. However, approachability also means that faculty are easily reached outside of class by doing things such as giving students their home phone and cell numbers, personal email addresses, etc. Furthermore, Kuh et al. contend that faculty approachability and interaction can consist of many facets, including working with a faculty member on a research project, working with a faculty member on activities other than coursework (committees, program activities, etc.), discussing assignments and grades, and receiving prompt academic feedback on performance. In short, the more contact a student has with a faculty member, the better chance he/she has in persisting until graduation (Pascarella and Terenzini, 2005).

Business Procedures

Another factor that impacts persistence is what is known as business procedures or bureaucratic factors. It can best be defined as the interaction that occurs between the student and the service providers at the institution (Bean, 2005). For instance, common patterns of exchanges occur between the student and various offices such as the business office, residence life, financial aid, departmental offices that define major requirements, social/athletic events, parking management, etc. Usually, students bring the appropriate forms and/or money and exchange them for access to resources and services. However, many students become discouraged when they perceive bureaucracy as more important to college staff than student service. As Bean (2005) asserts, "The bureaucratic aspects of the academy are soulless, deadening students whose spirits should be lifted by their academic experiences" (p. 230). Students can become equally disenfranchised with an institution when they feel they have been given the run-around or misled. All of these types of unhelpful experiences cause students to develop negative attitudes toward their institutions and, thus, less likely to graduate from those institutions (Bean, 2005).

Learning Experiences

One of the most important missions for institutions of higher learning is to provide meaningful learning experiences for their students. These learning experiences are determined by the collective effort of faculty, staff and students. At the same time, students enter higher education with their own expectations of learning experiences. These expectations impact how students respond to their environments and also act as precursors as students make academic decisions, such as choice of major (Pike, 2006). Expectations can also influence how students respond to their academic surroundings and impact their decisions of whether or not to remain in certain fields of study, or college in general (Bosch, Hester, MacEntee, MacKenzie, Morey & Nichols, 2008; Kuh, Gonyea & Williams, 2005; Pike, 2006).

Meaningful learning experiences are an essential key to student retention, and it is imperative for institutions of higher learning to create valuable and enriching learning experiences within their academic programs. Enriching learning experiences are also necessary to produce an economically independent enlightened citizenry who possesses civic responsibility. When meaningful learning experiences are missing from the curriculum, students often become disengaged and dissatisfied because they see no relevance in what they are learning. Moreover, students with few chances to participate in meaningful learning experiences are denied the opportunity to integrate and apply the knowledge they have obtained in their classes (Kuh, G. D., Schuh, J., Whitt, E., Andreas, R., Lyons, J., Strange, C., et al. (1991); Kuh et al., 2005; Moxley et al, 2001).

Student Support Services

A number of colleges and universities offer students a wide variety of services and resources intended to promote persistence by providing academic assistance (Pascarella & Terenzini, 2005). Both Miller (2005) and Seidman (2005b) contend that if students are admitted to a college, then they should have expectations for that college to provide services that will help them succeed. It is important for institutions of higher learning to implement and maintain various academic resources that promote student success and increase student persistence because these resources are needed by a significant number of students who are not adequately prepared for the academic challenges they will face at the university.

Schools that truly desire to increase student persistence should implement and advocate the usage of "responsive, learner-centered support services, such as peer tutoring and special labs for writing and mathematics" (Kuh et al., 2005). Most of the academic support services are tutoring centers which offer academic assistance in a variety of areas, such as speaking, writing, and mathematics. Usually, students are able to schedule appointments with the centers, discuss the academic challenges they experience, and the staff at theses centers are able to provide assistance to them. Adelman (1999) and Pascarella and Terenzini (2005) reported that academic resources such as these produced statistically significant positive impacts on student persistence.

METHODOLOGY

Based on the four previous types of retention defined by Hagedorn (2005), this study focused on one of those areas—investigating the persistence of students within certain academic disciplines. Of specific concern were disciplines within the university's College of Education and Psychology (hereafter referred to as "CoEP"). During the latter half of the spring 2008 semester, students were asked to complete a survey instrument which quantified data measuring their perceptions of academic advising, social connectedness with other students, involvement/engagement, departmental business procedures, faculty approachability, and learning experiences. Then, approximately one month into the fall 2008 semester, enrollment status data on students who completed the questionnaire in spring 2008 were collected. Scores from both groups (those students who did return and those who did not return or changed majors to another major outside of the university's CoEP) were compared to determine if statistically significant differences existed between the two groups for the six constructs measured by the questionnaire.

Participants

Participants included students who had declared majors in a program of study within the university's CoEP. These students were enrolled in courses that were required for all programs of study in the university's CoEP, which allowed for a large sampling of students from various academic majors within the college. All of the courses were offered in traditional face-to-face format and met three times a week for fifty minutes or twice a week for seventy-five minutes. Participants were selected for this study through convenience sampling, and students' participation was voluntary. The sample obtained for this study was similar to the overall student population for the university.

Respondents ranged in age from 18 to 52 years, with a mean age of 23.4 years. The majority of the respondents were females, while the two most reported ethnicities were Caucasian and African American. Students represented all levels of academic classifications, but the majority reported themselves as Juniors. Table 1 contains detailed information regarding the Gender, Ethnicity, and classification of participants.

Participants were sorted into two groups. One group consisted of the of the 93 students who did not enroll for classes during the Fall 2008 semester or changed academic majors to another area outside of CoEP. The other group consisted of the 172 students who enrolled for classes during the Fall 2008 semester for the same academic major they declared during the Spring 2008 semester. It should also be noted that 27 students surveyed graduated at the conclusion of the Spring 2008 semester and those students were not included in this analysis.

Instrumentation

The instrument used in this study consisted of 51 items, 13 of which pertained to demographic and status, and 32 of which pertained to the measurement of attitudes and perceptions of academic advising, social connectedness with other students, on-campus involvement/engagement, university business procedures, faculty approachability, and learning experiences. Six items were used to determine students' utilization of various campus resources. A five-point Likert scale ranging from Strongly Agree to Strongly Disagree was utilized. Respondents had to answer at least three items for each of the constructs measured to be included in the analysis.

In addition to reviewing relevant literature, the researchers worked with the university's CoEP retention committee to decide which variables to measure in this study and how to design the questionnaire to ensure the survey questions were accurately measuring the variables of interest. This committee consisted of professors from each department within the College, the accreditation officer, and the Associate Dean, and was charged with identifying and implementing strategies to improve student retention.

A group of 40 students, all who were enrolled in a tests and measurement or teacher foundations course in the Teacher Education program in the university's CoEP, participated in a pilot study prior to the commencement of this project to test the reliability of the survey instrument. The data collected from the pilot study were entered into a SPSS data file to calculate the reliability of the survey instrument. The reliability statistics for Cronbach's alpha was .73 for students' perceptions of their social connectedness with other students, .80 for students' perceptions of their on-campus involvement/engagement, .87 for students' perceptions of faculty approachability, .78 for students' perceptions of academic advising, .83 for students' perceptions

of university business procedures, and .80 for students' perceptions of their learning experiences. The internal consistency statistic for the entire survey instrument was .932.

ANALYSIS

The results indicated that the Learning Experiences construct had the highest overall mean while Social Connectedness and Involvement and Engagement had the lowest. The means and standard deviations are reported in Table 2. Frequencies were calculated indicating whether or not a student had used a particular service or resource. The frequencies for these items are presented in Table 3.

Multivariate analysis of variance (MANOVA) was used to determine if statistically significant differences existed between any of the dependent variables (Social Connectedness, Involvement/Engagement, Faculty Approachability, Academic Advising, Business Procedures, and Learning Experiences) based on the two groups—students who returned to school during the Fall 2008 semester and those who did not. During the analysis, Box's and Bartlett's tests indicated no issues regarding the homogeneity of variances for the two groups.

A discriminant function analysis was conducted to confirm the findings of the MANOVA test and predict group membership (those who returned in Fall 2008 semester in the same academic discipline and those who did not return or changed majors to another area outside of the university's CoEP) by how the respondents answered the questions for each construct (Academic Advising, Social Connectedness, Involvement/Engagement, Business Procedures, Faculty Approachability, and Learning Experiences). All assumptions for homogeneity of variances were acceptable.

FINDINGS

The results of the MANOVA indicated that there was a statistically significant difference between the two groups, *Hotelling's Trace* = .07, $F = 3.03$, $p = .007$. Pairwise comparisons revealed that two of the dependent variables were significantly different for the two groups, which were Social Connectedness and Faculty Approachability. Pairwise comparisons are given in Table 4. Of the six variables measured, two were statistically significant and four were not. The constructs for which the two groups significantly differed were Social Connectedness, $F(1, 263) = 4.19$, $p = .042$ and Faculty Approachability, $F(1, 263) = 4.10$, $p = .044$. The other constructs of Involvement and Engagement, Academic Advising, Business Procedures, and Learning Experiences failed to show any statistically significant differences between the two groups.

The discriminant function analysis yielded statistically significant results, *Wilk's Lambda* = .934, $\chi^2(6) = 17.682$, $p = .007$. Using these variables as predictors, 58.9% of students were correctly classified as to whether or not they returned to the university during the Fall 2008 semester. As indicated in the structure matrix, Social Connectedness had the highest loading (.476) and was the best predictor of group membership, while Faculty Approachability had the second highest loading (.471) and was the second best predictor. These two variables had much higher loadings than the other variables, confirming the results of the MANOVA. The rest of the variables had the following loadings: Involvement and Engagement (-.344), Academic Advising (.236), Learning Experiences (.218), and Business Procedures (.198).

DISCUSSION

Based upon the findings of this study, the researchers have developed specific recommendations appropriate for those who are currently involved in student retention projects or plan to be in the near future. Although not statistically significant, one of the interesting findings in this study was the strong negative loading for involvement and engagement. According to Evans et al. (1998), college students must be actively involved and engaged in their surroundings if they are expected to learn and grow while attending college. While it is important for students to be academically involved and engaged, Tinto (1993) contends that is also important for students to become involved and engaged in other areas of college life, such as campus organizations, activities, athletic events, etc. However, the results of this study do not support the literature. As a matter of fact, students who did not return during the Fall 2008 semester reported higher levels of involvement and engagement than students who did return. These findings do concur with Tinto (1993), who asserts that students can sometimes become too involved and engaged with events on campus, which can sometimes counterbalance their academic efforts. However, when considering these results, it should be kept in mind that the reliability of this construct was found to be questionable for this study and one item measuring this construct was discarded from analysis.

Since students who did not persist to the Fall 2008 semester had statistically significant lower perceptions of social connectedness than students who did, students in the university's CoEP should be grouped together into cohorts so they take their classes together as a learning community. Learning communities may be established in many areas of study to effectively address the learning needs for a wide variety of students while providing both faculty and students with an academic structure that promotes collaboration. Learning communities also help to develop a strong sense of student identity as they traditionally have smaller enrollment numbers. Grouping students into cohorts should not only be done for students who initially declare majors, but also for students transferring in from other universities (Tinto, 2005).

However, planning and implementing cohort models not only requires an investment of faculty time for collaboration and planning, but may also contribute to substantial budget shortfalls (The National Center for Public Policy and Higher Education, 2008). Financial considerations have become crucial decision-making factors in determining programming as state and federal funding have been progressively decreasing in recent years, especially for institutions of higher learning in the South (Bradley, 2002; Caruthers & Marks, 1988). It is also likely that this trend will only worsen relative to the nation's current economic conditions. During these difficult economic times, it might be more financially feasible to schedule the same group of students in one or two courses each semester, called clusters, instead of locking students into traditional cohort models, commonly referred to as blocks. Creating clusters around fewer courses may still facilitate the process of student connection and 'friend-making' while requiring fewer financial resources, as clustering does not typically result in class size reductions as is typical found with block scheduling formats (Bean, 2005; Kuh et al., 2005).

CoEP administrators should also explore the use of existing technologies that are readily available for creating and managing student cohorts. Professors often manage cohorts and communities in traditional classroom settings, but they should be more concerned with "how to use technology to leverage resources and group dynamics in new ways to make fundamental changes in every part of the learning process" (Kimball, 2001, p. 38). In other words, faculty can

use existing technologies to create learning communities while also providing quality academic and social experiences for their students.

According to Towner and VanHorn (2007), there are many technologies readily available to students and faculty, such as social networking tools such as Facebook and MySpace. Tools such as these are communal necessities for college students today. Moreover, Facebook has become a mainstay for helping students to connect with one another. With Facebook's popularity among college students, "it is a potentially valuable resource for college professors to build a classroom network among their students by tapping into the existing social framework already established by Facebook" (p. 4). Professors using Facebook to create cohorts and conduct lessons within online courses is certainly feasible because network infrastructure is already successfully functioning, and most college students already use this technology on a daily basis.

In some educational settings, professors use online networking tools to obtain ideas and feedback regarding their classes (Humphries, 2005). This is particularly useful for online classes because traditional methods for gathering this type of data is impossible. These networking tools can also be used by professors to create student groups, which helps to foster the student learning communities as previously discussed in this study. When professors are able to effectively create cohorts using these existing technologies, it helps to "stimulate and nurture the complex network of interpersonal relationships and interactions that are part of an effective communications and decision-making process" in the world of virtual learning environments (Kimball, 2001, p.38).

Students who did not persist to the Fall 2008 semester also had statistically significant lower perceptions of faculty/staff approachability than those students who did persist. As a result, the university's CoEP should improve efforts to promote student-faculty contact. For example, CoEP could designate days where faculty eat free at campus dining facilities when accompanied by a student, or paying for food and materials when faculty hold class meetings (Kuh et al., 2005). Practices such as this would not create any financial burdens upon faculty or students and in the case of lunch meetings, would invert the normal power relationship between professors and students since the professor has to be invited by the student. These types of initiatives would also help increase student interaction with faculty members. Other ideas to stimulate faculty-student interactions, as suggested by Kuh et al. (2005), include situating spaces for students near faculty offices and implementing programs where a small number of students (usually between two and five) are assigned to a professor who helps those students become acclimated with campus culture. When initiatives such as these are consistently employed, a culture where student and faculty interaction (both inside and outside the classroom) will become commonplace. More importantly, effective faculty-student interaction will help establish an environment where students feel that faculty members truly care about them as individuals, which will facilitate the attainment of academic success.

Adelman (1999), along with Pascarella and Terenzini (2005) reported that students in their studies who regularly utilized support services had statistically significant persistence results. In this study, over 90% of students indicated they had utilized the university's library and computing resources, but only approximately half of the respondents indicated they used CoEP support services and associated resources such as the speaking and writing center, the Math Zone (math tutoring) and the student support center. While there was no conclusive data regarding student support services from this study, Ardaiolo, Bender, & Roberts, G. (2005) found it important to monitor the utilization of student support services and resources because of the connection between their usage and persistence. Additionally, Jones (2001) suggested constant collaborative activities between professors and student support services, such as the

incorporation of support services or other supportive resources into class curriculum, class visits to support centers, or simply encouragement to take advantage of support services, promoted student involvement and subsequent connectivity.

Limitations

This study was conducted at only one college within a university, so results may not be generalizable to broader university populations. Some would consider this a limitation. However, retention is a campus-based phenomenon, and different types of campuses tend to attract different types of students (Berger & Lyon, 2005). According to Astin (1990), retention rates vary by campus and due to the differences in the types of students attracted and recruited by certain schools, and it is imperative that institutions provide an environment and climate that fit well with their particular student populations. Therefore, it is not only the responsibility of institutions, but also individual colleges to help students persist who are enrolled in their programs. Furthermore, "each institution must tailor retention to fit the specific needs of its students and the context of that particular institutional environment" (Berger & Lyon, 2005, p. 3).

A second limitation found was that students who did not return for Fall 2008 semester were considered a dropout although they may have merely 'stopped out' for a while and will return at a future date to conclude their studies. Also, the findings of this study could have been found confusing to the reader as students who changed academic majors to another area were considered retained at the university level, but not at the college (CoEP) level.

Recommendations for Future Research

Recommendations for future research include follow-up studies with students who did not enroll for classes during the Fall 2008 semester or changed majors to another college within the university. Additionally, future research should include retention factors beyond the six included in this research and the scope be broadened beyond traditional, face-to-face classes.

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Tables

Table 1
Gender, Ethnicity, and Classification

	n	*Percentage*
Gender		
Male	70	24.0%
Female	222	76.0%
Ethnicity		
Asian American/ Pacific Islander	3	1.0%
Caucasian	182	62.3%
African American	93	31.8%
Native American	1	0.3%
Hispanic/Latino	7	2.4%
Other	6	2.1%
Classification		
Freshman	24	8.2%
Sophomore	54	18.5%
Junior	127	43.5%
Senior	82	28.1%
Did not report	5	1.7%

Table 2

Descriptive Statistics for Returning and Non-Returning Students

Dependent Variable	Returned	n	Mean	SD
Academic Advising	Yes	172	3.71	0.82
	No	93	3.60	0.79
Social Connectedness	Yes	172	3.60	0.75
	No	93	3.39	0.82
Involvement/Engagement	Yes	172	3.55	0.79
	No	93	3.70	0.72
Business Procedures	Yes	172	3.75	0.65
	No	93	3.68	0.73
Faculty Approachability	Yes	172	3.86	0.68
	No	93	3.68	0.74
Learning Experiences	Yes	172	4.17	0.57
	No	93	4.10	0.60

Scale: 1 = Strongly Disagree…5 = Strongly Agree

Table 3

Item Frequencies for Student Support Services

Item	Yes	No	Percentage Yes
Library Services	282	10	96.6%
Computing Resources	274	18	93.8%
Speaking Center	139	153	47.6%
Writing Center	159	133	54.5%
Math Zone	130	162	44.5%
Student Support Services	176	116	60.3%

Table 4
Pairwise Comparisons

Dependent Variable	Returned	Means	Mean Diff.	Sig.
Academic Advising	Yes	3.71	0.11	.312
	No	3.60		
Social Connectedness	Yes	3.60	0.21	.042*
	No	3.39		
Involvement/Engagement	Yes	3.55	-0.15	.140
	No	3.70		
Business Procedures	Yes	3.75	0.07	.396
	No	3.68		
Faculty Approachability	Yes	3.86	0.18	.044*
	No	3.68		
Learning Experiences	Yes	4.17	0.07	.349
	No	4.10		

Note: * indicates a statistically significant difference at the .05 level.

Designing and marketing a global business travel course

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Abstract

This paper's objectives are to present and identify successful strategies for planning, designing and implementing a global business travel trip with a pre- and post-academic class schedule. The courses' destination changes annually. The information gathered and presented is from four regional business trips.

The discussion will center on strategies in building a successful travel program at a small university, course content, business visit selection, recruiting, and selecting a flexible mix of students and alumni. Travel programs require additional resources in terms of commitment, funding, and assistance from various departments. The key to a successful Global Business Course with a travel trip component is commitment by the faculty team leader and enthusiasm.

Keywords: study-abroad, business, curriculum, design, planning

Introduction

Many universities are offering study abroad programs which center on spending a full semester at an international university. This is a wonderful opportunity and requires the university to be actively involved in an alliance relationship outside the US. For many smaller universities, this is not a realistic scenario in terms of exchange students, economies of scale and possible accreditation issues. Allan E. Goodman, President and CEO of the Institute of International Education, noted that the experiences afforded through study abroad provide American students with the skills needed to live in today's world. Dr. Goodman in an article published in Open Doors (2008) states the following "International experience needs to be a component of every student's education, equipping them for 21st century careers and for global citizenship."

International knowledge and experience are essential for students as they prepare for the global business economy (Open Doors, 2006). International educators must continue reminding campus leaders about the value of gaining a global perspective (Fischer, 2009). Martha Johnson (2009) discusses the need for graduates to develop a competitive edge by expanding their knowledge of global cultures and multinational businesses through participation in study abroad programs.

Some universities have accelerated efforts to expose students to the global environment by requiring an international focus on the business curriculum. This stronger focus on integrating the international business component into the business courses is a direct result of the Association to Advance Collegiate Schools of Business (AACSB) requirements and accreditation standards (Marklein, 1999).

This paper's focus is on designing a quality international business course which incorporates a travel component during the 15 or 8 week semester and can be customized for smaller universities. Discussion and recommendations for assessing academic credits, course design, curriculum development, trip destination choice, promotion, and pricing from travel trip arranged by the Rinker School of Business will be discussed and analyzed. A well-designed program is an invaluable experience for both undergraduate and graduate students, as well as for the faculty.

The paper's second objective is to identify a simplified model that professors in smaller universities and colleges may use as a guideline to design a quality global business trip in their respective business schools. Private universities and colleges which are not ranked in the same manner as the state universities sometimes are at a disadvantage in offering global business trips. The primary reason is that without a fully devoted multicultural administrative organization at the university, the planning and trip implementation may become overwhelming for faculty.

Literature Review

Researchers Gordon and Smith (1992) and Schuster (1993), discuss strategies to create and administer a short-term exposure trip. The pedagogical orientation is in the course's multiple destinations in a short time span. Both programs maximize the location and cultural opportunities. The program designed by Gordon and Smith takes into consideration that students have limited resources. One of the primary goals of the short-term educational trips, according to Gordon and Smith, is to instill confidence in a student's ability to internalize to a new environment. Gordon and Smith (1992) present a detailed itinerary of tour activities but little identification or recommendations on the logistical preparation involved in planning and organizing the trip.

Cateora (1993) points out in his research the difference between the "factual" and the interpretive forms of knowledge. The factual cultural knowledge of a country requires a series of steps beyond the textbook readings. Understanding a culture requires students to participate in more hands on approach which goes beyond the country discussion and research. Global mindsets are developed by experiencing the culture first hand, by visiting and participating in the norms, rituals and communications in the country. This is established by extending country visits which highlight cultural and business visits.

Koernig (2007), provides specific recommendations and strategies towards managing student pre-trip anxiety, internalizing the student to the new culture to minimize cultural and/or language barriers, designing and selecting learning activities. Koenig's research and discussions are based on feedback from previous global trips, as well as his experience, and may serve as a roadmap for the first time professor planning a global trip. Koernig's second goal is to address the gap left by Gordon and Smith (1992) in responding to on-the-ground crisis and challenges a faculty leader encounters during the trip.

While studying international programs in Mexico, Tobenkin (2009) concluded that many university administrators in the United States are expanding their study-abroad options as the research reinforces an increased awareness that global experience plays an important role in higher education.

There is little disagreement that meaningful international travel experiences lead to a less ethnocentric mindset (Douglas and Jones-Rikkers, 2001; Saghafi 2001). However, there is little research focusing on the pedagogy as compared to the abundance of literature and research

available on logistical program design. Kashlak, Jones and Cotner (1999) and Ornstein and Nelson (2001) address the issue of pedagogical design in the MBA courses. Low tolerance of other cultures is typically not associated with intellectual and business growth. Kedia, Harveston and Bhagat (2001) addressed the framework design for global curriculum development. Developing a global mindset through academic programs and global business trips will produce a higher quality global manager. Students who develop cross-cultural business skill are more favorably positioned for success in the business world.

Beyond simply going abroad, Uracca, Ledoux and Harris (2009) have sought to immerse the students on their field trip into an environment which would force them to step out of their comfort zones. In the process, the students learned that some of the most important components of preparation for the trip are intercultural communication training, language proficiency, and reflection. The authors used a multifaceted reflection program, with time set aside each day for reflective activities and journaling. This particular trip also revealed that the higher the language proficiency of the students, the more self-sufficient they are in interacting with the local people and the more they will participate in some of the decisions being made on the trip.

Destination

Open Doors (2008) discuss the fact that American students are more frequently choosing non-traditional study abroad destinations. The number of U.S. students studying in China, Argentina, South Africa, Ecuador and India each increased by more than 20 percent over the previous year. This increase is fueled in part by an increase in new program opportunities, partnerships between higher education institutions in the United States and abroad, and a range of fields and program durations to accommodate the needs of an increasingly diverse study abroad population.

Destinations for the university's global business trips were to the Czech Republic, China, Vienna, Austria, and, most recently, Egypt. Guidelines for destination selection are based on emerging market potential, safety, economic conditions and current political environment. Many students and their families are reluctant to travel to Asia, the Middle East or South America. However, security, language barriers, and political and legal structures are concerns which make university group travel appealing.

Students traveling with family and friends are not exposed to business visits. The corporate and governmental business visits offer unique opportunities for students and alumni to network and inquire about internships. Changing the destination choice annually further promotes student loyalty and increases the number of students participating in a second or third trip.

Faculty Selection Process and Qualities

Global business trip destinations change yearly. The destination change requires faculty to prepare new materials annually. There are many excellent books describing a country's business and social environments. The country research books written by distinguished authors are excellent texts but they rarely are supported by ancillary instructor materials. New faculty members teaching a course with a global business trip component are faced with new preparation annually combined with administrative and logistical responsibility.

Faculty team leaders assume the responsibility for the group on a 24/7 basis during the business trip. Gordon and Smith (1992) recommend elements of selection and self-selection of faculty leaders to accompany and/or accept the primary leader role. The primary faculty leader and support team work well together if all members exhibit commitment, organizational ability and the required skills in relating to students.

Successful faculty exhibit high degrees of enthusiasm and interest in learning about new countries from a business and cultural perspective, (Fischer, 2009). The recommendation is for a faculty member teaching a global business course with the travel component to consider a two-year commitment to the course and travel.

Pricing and Contract Negotiations

Trip locations are many times based on the best price and the state of the economy. Some best practices identified in the global business trip courses are: work with the reputable travel or education agency to establish a suitable cancellation policy based on course dates and airline rules. One must also understand the fine print in the contract. Ensure the travel agent has appropriate student information for billing. The agency's role is critical in mitigating university risk associated with contracts and country negotiations. Careful agency selection will ensure that payments are processed immediately and that both the cultural and business trip objectives are met. Faculty are best suited to serve as group leaders and liaisons. Their best role is not in serving as a tourist agency.

A trip's final price increases as you build in more dinners and lunches. It is recommended that breakfast be included in the hotel pricing. Breakfast ensures that students have a higher level of concentration throughout the morning.

In addition to meals, check to ensure all costs are quoted, including any security-related expenses (Middle East destinations may require additional security if the US deems this a necessity). On the most recent trip to Egypt, a Canadian tour operator was selected. The Canadian tour operator was proficient in Egyptian culture, business protocol and logistics. The only unfortunate issue was the fact that the Canadian agency was not familiar with the US government requirements when hosting US Citizens who tour Egypt. The US government, although on friendly terms with Egypt through aid and political agreements, requires that all large groups have an armed security guard traveling on the bus at all times during the trip. The result was a last minute fee prior to the trip departure, resulting in concerns over the agent's expertise.

Students prefer cultural visits/tours tours included in the package. This allows students and their families to better plan their travel budgets. Tours may be cultural, interactive, sightseeing visits and/or walking tours. It is best to schedule a business visit in the morning, followed by a cultural tour in the afternoon.

If you are including meals - which is a good idea while traveling for a full day - negotiate with the agent on three or four menu selections. Students become bored with the same food and, including lunches during the business day's events, sometimes you risk repeating the same menu items. In many cases, students are full from a hearty breakfast and don't need a break until after 2:00. Scheduled lunches sometimes take a long time and require good organization. By allowing students to select their own restaurant, many will select a fast food establishment. In many ways, this might work out well, due to fewer group logistics issues and delays.

Dinner arrangements usually don't work with a large group. The participants are tired after being up early and traveling. You may consider an opening dinner and a closing dinner for the entire group. Include pricing for tips, luggage handling, and tips for drivers and tour operators. Check on the policies for each country.

Currency Rate Fluctuations

Currency fluctuations are an issue that will impact the cost of the trip adversely. If the country destination is subject to escalating currency valuations, this must be factored into the final trip price as a "reserve." Students can then be given the unused, reserve monies during the trip, which is a pleasant surprise. An example of currency escalation was a trip planned in 2007 to the Czech Republic and a subsequent trip to Vienna in summer 2008. The designated country's currency exchange is an important issue to negotiate. If this is not negotiable, then build a minimum of 5% into the preliminary budget to account for currency rate increases. Researching the country's exchange rates will assist you in determining the most realistic percentage increase to consider in the budget preparation. This is an important monetary item as the negotiation of exchange rates between the U.S. and the country of interest can be a source of hidden costs.

A word of caution: *Be very conservative in your estimates*. It is much easier to give students a rebate (extra meal, theater tickets, etc.) than to underestimate costs and have to go back to them for extra money prior to departure. A low trip price probably means you made a mistake somewhere. Check, double-check, and check again. Have an experienced trip leader go over your budget to make sure you are not forgetting anything.

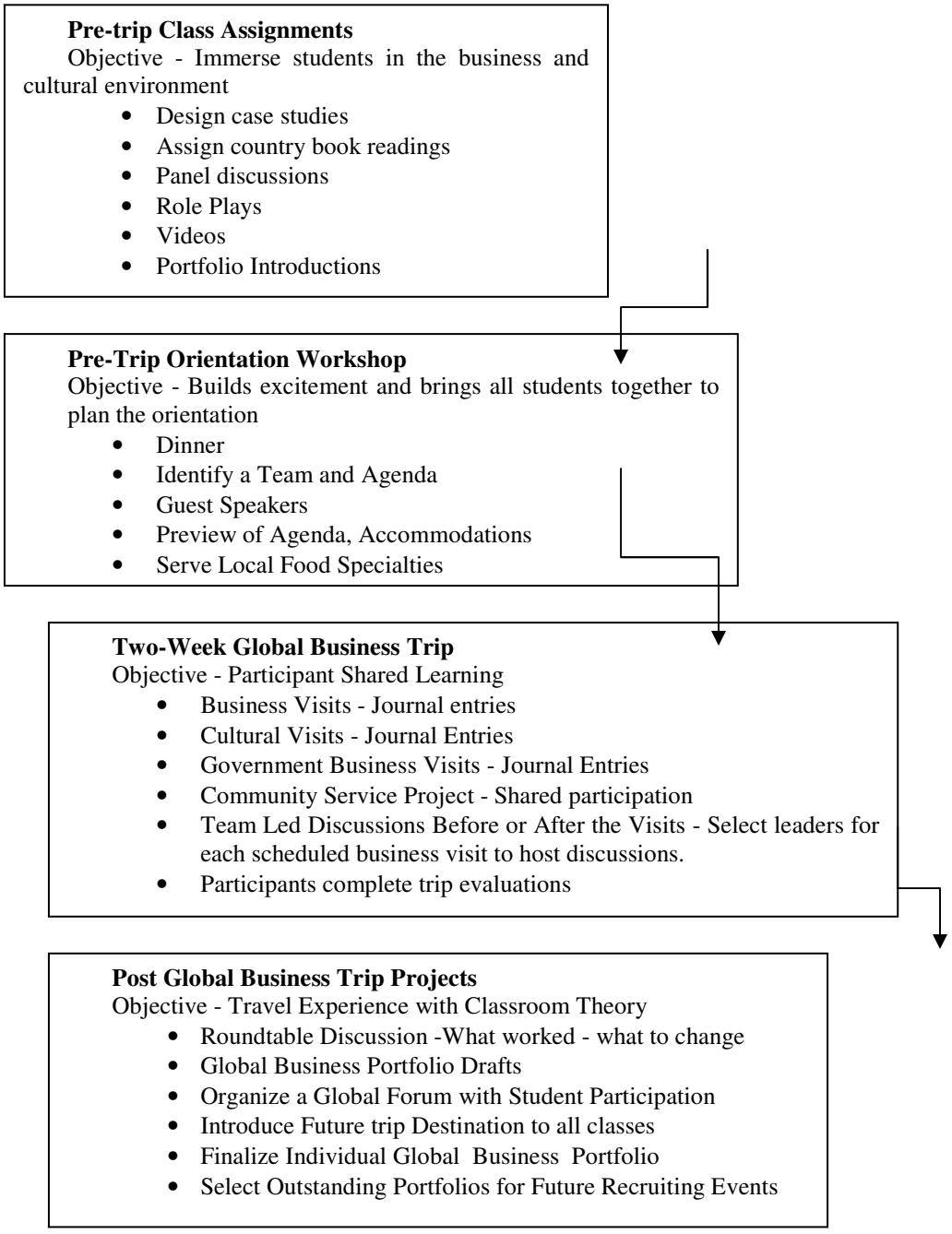
Promotion

Once the trip destinations are finalized, develop the promotional flier. Assign students participating in the trip to this project. In addition to promotional flyers, consider having students design poster boards for display in your business classrooms. Include an itinerary and label it "Tentative."

Another successful information tool is designing a website. Then, determine the best group responsible for website updates.

Previous student participants are excellent promoters for the upcoming business trip. Another suggestion is to visit the junior and senior business classes prior to the official promotion date.

Global Business Trip Course Design Model
Table 1



Assignment of Academic Credits

The undergraduate business trip is a three-credit hour course. Students must be in their junior or senior year, and have completed the Principles of International Business pre-requisite course in order to qualify. Students must secure the travel monies in addition to the course tuition. Eligible students may be considered as candidates for a one-credit internship course.

Determining academic credits for a short-term program varies. The Institute of International Education (2008) reports significant variations in institutions' calculation of credits. The variations potentially point to differing perceptions of short-term study abroad's academic rigor and the degree to which a need is felt to reward out-of-class learning experiences. Some colleges say, for instance, that if a student is in class 30 hours per week, they can earn two credits in that week abroad. Meanwhile, others say that, for every hour of class time, another two hours of outside-of-class work is expected, and so they essentially grant one credit for every 45 hours, 15 in the classroom and 30 outside it.

In accordance with a more formalized set of Study Abroad Guidelines, the course content was specified and learning outcomes must achieve the same expectations as regular on-campus courses. The academic assignments require a pre-travel, travel and post-travel assignment. The goal is to connect the academic with the experiential content. Each academic credit hour requires a minimum of 5 location days, excluding travel.

Most recently, Palm Beach Atlantic University's Study Abroad Committee (2008) formalized the course guidelines to ensure the travel component in a course is academically justified. For academic credits, the course must demonstrate academic rigor, learning outcomes, trip length, materials and a course schedule.

Course Design

The course design centers on the global destinations' business, political, economic and cultural environment. The spring semester at Palm Beach Atlantic University is the designated semester for the regional business travel course. The course is offered to the undergraduate and MBA students under the course titles of "Regional Business Environments" (undergraduate) and "Global Business Environments" (MBA). The undergraduate course may be taken as an upper level business elective. The course is required for all students taking the international business degree concentration.

Porth (1997) suggests a three-phase academic approach to a global business curriculum, where the course content in the first half of the semester is designed to rapidly build students' awareness of the country's culture, business, political and economic climate. Students are required to research specific aspects of the country, complete readings and present findings prior to the trip. All academic readings, business periodicals, videos, and examinations focus on the pre-trip learning outcomes.

Teaching Materials for Course Content

Course destinations change annually. In many global business courses, there are few instructor notes available for instructors. New faculty team leaders teaching the global business trip courses are sometimes challenged by the lack of instructor resources and by the length of time required to design the course content. There are multiple resources available to assist the faculty leader; however, the resources are not centralized in one data bank. Recommendations are to start early in gathering reference articles through newsprint, Internet access and business journals.

Course Cancellations

Security, riots, and terrorism are a reality that must be considered in planning any trip. You are not able to predict the political environment of the country (in particular that of emerging countries) a year in advance. Any uprising can result in instability and reconsideration of the destination. According to Nelson & Ornstein (2002), the likelihood of disruption for an institution is not great, but it appears that the number of events that had signaled legal, political and/or medical concerns has recently been growing. Institutions are sponsoring more travel abroad programs outside of the Western geographic boundaries, creating higher levels of uncertainty and complexity in managing global trips. Having a policy in place and designated faculty members, to include the Dean, will ensure that an objective decision is rendered if a trip must be cancelled.

The faculty team leader's role is to identify and build information networks in the countries that the students will be visiting. Examples of reliable networks in foreign destinations include the US Consulate and Embassy, the American Chamber of Commerce, and business organizations that are scheduled for trip visits. The important issue is the safety of the students and the faculty. If there is any doubt as to the safety of the destination in the initial stages of planning, consider alternate locations. Many times, according to experiences discussed by Nelson & Ornstein (2002), heightened uncertainly about safety represents a moral issue vis-a-vis liability. As a professor, you are responsible for the safety of the students and, although the potential for learning in another environment may exceed learning experiences in a traditional class setting, the potential risk will not outweigh the benefits. Models such as as Kohberg (1979) on moral development can be used to facilitate the decision making process.

If a trip is cancelled, the professor must have a second course of action. The direction for the contingency plan is based on the timing of the cancellation. If a course must be cancelled prior to the start of the semester, the institution must be ready to place the student in an alternate course. The second recommendation is to consider offering the course as a directed study for students who still have an interest in learning about the country. This directed study alternative may create additional hardships for the team leader.

The final decision to cancel an international business travel course from pre-registration to class trip requires effective and professional communications. In times of uncertainly, followers turn to leaders for support and guidance. It is important to call each student and explain the decision. The personal phone calls require time and, during a crisis, the luxury of time is sometimes not considered an option. The costs and time commitment may appear unrealistic; however, the time spent speaking with the students will ensure they receive accurate information rather than information pulled from the school's website.

Pre-Trip Assignments

The trip's pre-trip assignments are developed with the objective of internalizing the students to the country. This is accomplished through a variety of learning formats. Successful projects involve both individual and team assignments.

A useful and practical research assignment is portraying the business trip's cultural, legal, and political and business environment in a group PowerPoint presentation with interactive exercises designed by the students. Each student team is assigned a specific country topic to research and present. Regardless of the business trip duration, studies show that successful global

business programs need to involve students in immersion learning activities (Doyle, Helms and Westrup, (2004).

Homework assignments and class discussions may include panel discussions with role-plays as government officials, business representatives and NGOs. The role-play assignments require students to quickly integrate all facets of the economy as the first step in preparing for the role-play. The instructor may select an industry that is slowly developing and script out the issues and challenges this industry encounters in the country.

Another successful assignment is the case study method. The goal here is to assign cases with environmental, legal and/or managerial issues. These business issues in the cases should relate directly to the country's regulations or operation rules. The cases can involve team presentations to include identifying the current operating challenges the company is facing and/or the progress from the date of the case.

Class meetings and exercises work best with supplemental readings from required book excerpts and videos. If time allows, the pre-trip class meetings, role-plays, panel discussion on critical country issues and business cases provide an interactive forum and require students to research the country beyond just using travel sites or tourist links.

It is essential that the instructor design an integrated syllabus and not deviate from the business aspects of the course. It is sometimes very easy to become caught up in the students' excitement and direct greater time and attention to the cultural issues.

Pre-Trip Orientation Workshop

The business trips at PBAU are unique in their level of student participation. Since the university is small (annual enrollment of 3,000 students) and the Rinker School of Business student enrollment is 350, the annual trip includes undergraduates, MBAs and alumni. Many of the alumni are repeat students who participated in a trip as an undergraduate and or MBA. In some cases, the alumni bring their spouses, and some alumni have attended 3 of the 4 global business trips. This type of repeat attendance results in loyal support and favorable student/alumni promotional support. The Global Business Dinner serves to unite the three groups and it provides a forum for communicating a unified trip message. A well-orchestrated and timed agenda is important for this meeting. Inviting guest speakers familiar with the host country combined with a question/answer session allows students to learn and reflect on the country. The Global Business Dinner is a good time to present the final agenda and the business visits. It is also a good opportunity to preview the agenda, the accommodations, and the country activities.

Global Business Trip Visits

Assessment objectives during the course's business trip should encourage and motivate students to participate in group activities, provide an opportunity to develop group leadership skills, understand the theory and reflect on their experiences. Journaling the day's event assists students to bring together theory and experience. Journaling, according to Connor-Greene (2000), requires students to make a connection between course content and materials outside the class. The journals prepare the student for the portfolio by serving as reflective review.

Involving the students in a community service project increases students' understanding of global poverty, builds a spirit of self-giving, teamwork and improved understanding of the

world of social agencies. Team-led discussions in the form of debriefing sessions after the visits encourages students to share personal thoughts, ask questions in a smaller group environment and develop critical thinking skills.

Post-Global Trip Projects

The third section of the business trip course design is linking the travel and business experience with the classroom theory discussed during the pre-trip assignments. A roundtable discussion kicks off the first meeting session. This discussion allows students to verbally express the highlights and make recommendations for future business trips. Once students share their concerns or dislikes about the trip, they are less inclined to talk about the small negative items and more emphasis is placed on the experiences and sites.

The second class after the return trip is the time to begin the acceptance of portfolio drafts (Table 2). A review of each draft for language, content and format results in well-structured and professional business portfolios. Students are encouraged to design the business trip portfolio with the objective of using this document during job interviews. Establishing a realistic professional work goal motivates students to take personal pride in the design and final project.

Sharing the business trip experience builds greater awareness for future business trip courses and improves overall university appreciation of the internalization of the business environment. These forums can be hosted by the lead faculty member and Faculty Development. Students may play an active role by participating in panel discussions, leading a group discussion in a roundtable format and presenting learning outcomes.

The last item in the course is selecting the outstanding portfolios. This can be accomplished by a committee made up of two or three faculty members. The rubric used for grading the student's portfolio may serve as a guideline for the faculty participating in selecting the outstanding portfolios (Table 3).

Portfolio Criteria

Table 2

Executive Overview

- Summary of the trip - Books required for the course
- Agenda
- Map

Cairo- Personal Reflections

A. Pre - Perceptions of Egypt
B. How your perceptions changed after reading the Book
C. How did the actual experience mirror the author's visual description of Egypt?

Political / Religious Perspective of the Middle East

- Timeline of the Middle East
- What are the issues from a historical to a current state of affairs?
- Relate the impact of the Islamic religion on the Middle East and why there are many cross-cultural views of the Muslim faith.

Business Visits

- Company name / date / Executives presenting
- Company Background
- Content Material Covered
- Personal Reflection of the Visit
- Reference-Contact List and Pre-Egypt Visits

Business and Economic Climate

- Progress of the country
- Changes in the country from a business perspective (reforms)
- Challenges of doing business in Egypt
- World Bank rankings - Doing Business in Egypt
- Economic Indicators
- World Freedom Index indicator
- Transparency Index indicator

Cultural Reflections

- Cultural differences - gender differences-
- Dress differences- food differences- negotiations -
- Experiences from the trip relative to a cultural experience
- Cultural Visits

Case Analysis

- Attach case
- Case question Responses
- Summary of learning points from the case or your personal opinion of Middle East Challenges

Marketing in Egypt

- Visit a location of your choice - consumer oriented
- Select a product or portfolio of products
- Identify the differences in marketing in an Islamic country vs. the Western approach to marketing
- Lessons to learn in marketing to a Middle East Region
- Pictures of the products

Newspaper Clippings / Summaries of Articles

- Summarize the issues in the article and their relevance to politics and economics. Discuss this summary from an international global perspective by using a compare / contrast perspective.
- Include your personal perspective on each article with a recommendation for change or justification for the issue's written perspective.

Personal Reflection

- When asked "how can you describe your business trip to Egypt," how will you respond? Consider this question from the current perspective time frame and this question in 20 years. What has this business trip instilled in you personally, globally and from a business perspective?

Sample Rubric and Portfolio Assignment

Table 3
Final Project - Egypt and Middle East Business Portfolio
Criteria for Portfolio Grading- Represents 50% Grade Average

% OF POINT ALLOCATIONS	Outstanding	Very Good	Good	Fair	Point Value
Executive Overview (5 points)					
Reflection – Cairo: The Mother of the World (10 points)					
Political and Religious Perspective of Middle East (10 points)					
Business /Cultural					

Visit Reflections (20 points)					
Business Climate (10 points)					
Cultural Reflections on Egypt (10 points)					
Case Analysis - Globalization and the Middle East (5 points)					
Marketing in Egypt (20 points)					
Newspaper Clippings and (5 points)					
Personal Conclusions: Reflections - (5 points)					

Conclusion

As more universities are exploring shorter term study programs, the integration of a course and business trip component adds value to a student's education. The shorter term trips cost less than a semester abroad. Studies are inconclusive on the best learning and cultural immersion time frame needed for a student to become culturally competent in another country.

Company visits are a selling point with students and parents. The business trips bring the business world to the students and provide a great learning experience. Students can prepare in advance for the business visits and develop useful questions for use during the question and answer program.

Designing the course content structure and integral project assignments assists the students in preparation and in the understanding of the learning objectives for the course. Students realize at the course's conclusion that they participated in an once-in-a-lifetime learning experience and developed long lasting peer and in some cases business friendships.

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The struggle for strategic planning in European higher education: the case of Portugal

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Abstract

A number of significant factors are changing the strategic management landscape in higher education. Market forces are exerting significant impacts on higher education institutions (HEIs) that are fundamentally changing the ways they conduct and manage their affairs. As institutional autonomy grows, so do institutional responsibilities and accountability. Outcomes then determine the future level of autonomy for an institution. These major shifts are forcing HEIs to approach their operations more proactively and from a business perspective in order to be strategically positioned to seize opportunities and confront threats in an increasingly competitive environment. Strategic planning is a tool for assisting an HEI manage itself with foresight and an external focus. Strategic planning is moving more and more into the forefront of higher education discussions in many European countries. As interest in and appreciation of the need for this process grow internationally, higher education planners are confronted with many issues of limited market-driven management experience, as well as trans-national governance and cultural complexities. As higher education leaders in other countries, and especially Europe, turn to the United States for best practices and guidance, planning consultants (many from the business and non-profit sectors) must be equipped with a broader perspective that transcends national boundaries and also grasps the nuances of the higher education culture in Europe. This critical examination of problems in the Portuguese higher education system resulting from a lack of strategic planning and the authors' recommendations for change will offer a better understanding of the European context and how it differs from traditional models. Planners who want to expand their reach and share their expertise with this growing higher education market need to have this perspective. Thus, this paper summarizes a comparative analysis of the extent to which public and private HEIs in Portugal are engaging in a strategic planning process, what aspects of the process are being utilized in each sector and what their perceptions are regarding this involvement.

Keywords: Strategic Planning, Higher Education, Portuguese Higher Education, Strategic Management, European Higher Education

Introduction

Education in general, and higher education in particular, is a factor of great importance to the development of a dynamic transnational economy (Johnstone & Teferra, 2004). Higher education is a mainstay in the development and support of economic, social and cultural development for the world (Castells, 2001a; Dill & Sporn, 1995; Newman, 2001). Also, the academy's contribution to scientific and technological advancements is premier and unparalleled

in all of recorded history (Gibbons, 1994; Guruz, 2003; Scott, 1995). These advancements have been the cornerstone for the development of specialized human resources (Castells, 2001b; Johnstone & Teferra, 2004). Higher education institutions represent the most meaningful symbol of intellectual, economical, cultural and social life of the community in general. These institutions are the object of great public and private investment and therefore have great expectations thrust upon them (Kerr, 1983). Therefore, the institutions of higher education need to interpret the vital needs of contemporary society (Johnstone & Teferra, 2004), "to live in the market" (Clark, 1995, 165), to be "innovative" (van Vught, 2000, 350) as well as to develop the internal structures to meet their new missions (Detomasi, 1995). Finally higher education institutions "[…] are important symbols of national identity and repositories of the histories, languages, and cultures of the people(s) (Johnstone & Teferra, 2004, 1).

Emphasis is often placed on the changes, environment and the challenges that higher education institutions are facing today (Clark, 1998; File & Goedegebuure, 2003). The current changes and challenges are numerous and complex. Recent challenges for higher education institutions include changing demographics, reduced per capita funding, increased scrutiny from the public, internationalization (Altbach, 2001; Johnstone, 2004; van Vught *et al.*, 2002). Additional challenges include the Bologna Declaration and the European Higher Education area (van der Wende, 2003); a mixed profile in the student population (OECD, 2004); the emergence of new post-secondary institutions (Peterson & Dill, 1997); new competitors (Newman, 2001); the invasion of market forces in higher education (Dill, 2003; Kwiek, 2003); the global knowledge economy (Altbach & Teichler, 2001); a technology-driven society (Guruz, 2003); turbulent environments (Trowler, 2002); E-colleges (Werry, 2001) and increasing external demands (Clark, 1998). As stated by Johnstone (2004, 12):

> Higher education at the beginning of the 21st century has never been in greater demand, both from individual students and their families, for the occupational and social status and greater earnings it is presumed to convey, as well as from governments for the public benefits it is presumed to bring to the social, cultural, political, and economic well-being of countries.

Moreover from the perspective of Europe, Taylor, Amaral and Machado (2004, 12) point out the commonalities that surround higher education systems:

1. The inadequate funding of public higher education through the protective cloak of the existing welfare state,
2. The inability to adequately manage emerging massification,
3. The lack of experience and expertise to confront the current and projected demographic decline in students.

The increasing volatility of the environment has forced institutions to adapt to ever changing external forces. The prescriptive literature strongly advocates strategic planning as the key to superior performance. Strategic planning is a management tool, and has evolved in higher education through adaptation of practices in the business world (Rowley, Lujan & Dolence, 1997). This is a process that focuses on strategic and operational goals, objectives and strategies based on organizational policies, programs and actions designed to achieve the institution's aims and desirable results. It is argued that it is an extremely important tool for organizational

effectiveness (Armacost, Pet-Armacost & Wilson, 2004; Austin, 2002; Bryson, 1988; Bryson & Alston, 1996; Keller, 1983; Hahn & Powers, 1999; Peterson, 1980, 1993, 1995, 1999a,b; van Vught, 1988).

Some educators have suggested that perhaps the values of the academic culture should not encompass such a concept as strategic planning (Birnbaum, 2000). One cannot forget the uniqueness of a higher education institution as stressed by Keller (1997). Academic institutions are perceived as having ambiguous goals (Cohen & March, 1974), loosely coupled structures (Weick, 1976), different traditions as well as structures (Clark, 1983) and contradictory functions (Castells, 2001). While it is recognized that higher education institutions are historically collegial organizations, it is also recognized that the collegial system needs to support accountability and institutional responsibility, or even be more managerial in order to face the challenges of the future (Gibbons, 1994).

Literature on planning, organizational culture, high involvement management and organizational effectiveness provides a setting to examine why planning offers higher education a strategic tool when it functions as an integrated process for identifying, explicating, and mediating values that address specifically the higher education decision-making culture (Morril, 1988).

What holds true for the European systems of higher education? According to Zaharia (2002, 302):

> European universities are currently experiencing a period of turmoil caused by the need to reconcile the characteristics of traditional higher education and the new educational requirements that are being defined by the society of the Third Millennium.

Facing this scenario, it appears the solution for meeting the continuous demands on higher education institutions is the essential need for them to embrace a greater management capacity. Authors such as Amaral, Magalhães and Santiago (2003, 131) argue for "[…] the need to provide institutions with management instruments and processes allowing for a more flexible and effective administration", but they add "in the latter case, the management tools and processes will remain instruments at the service of the institution and its leadership, without assuming a dominant role as determinants of the institution's objectives and strategies." But even this may not be sufficient to avoid changes of the academic's basic loyalties, as Amaral, Fulton and Larsen (2003, 291) caution: "As universities increase their penetration of the marketplace, academics will increasingly be seen as 'intellectual workers', forced to direct their loyalty, not to their academic peers in their department or discipline, but to the institutions that pay their salaries and demand the lion's share of the economic value they produce."

Higher Education in Europe

Higher education institutions are among the world's oldest organizations. The historical origins go back to the Medieval Ages in Europe (van Vught, 1991). According to Altbach (2004, 4), "all the universities in the world today, with the exception of the Al-Azhar in Cairo, stem from the same historical roots – the Medieval European university." Even though the historical roots of the university lay in the Medieval Ages, according to Bowden and Marton (1998, 3), the foundation of the modern university was established in Berlin in 1809, when Wilheim von

Humboldt proclaimed the guiding principles to be the "independent status of staff" and the "free choice of subjects." Also according to Amaral (2002), the modern university has its origins in the reforms of von Humboldt in Prussia and Napoleon in France. Enders (2002, 3), points out "the contemporary university was born of the nation state, not of medieval civilization, and it was only in the nineteenth and twentieth centuries, following the establishment of clear national economic interests, that universities acquired their identification with science and technology." Scott (1999, 123) states that "three quarters of the existent universities, even the universities in Europe, have been established since 1900; half since 1945."

Today there are some differences within the European higher education systems. In the origins of the systems we know today, there are three models: the Humboldtian model characterized by freedom for professors and students with respect to study and teaching, the Anglo-Saxon approach characterized by a very high level of autonomy and low state intervention, and the Napoleonic model characterized by a centralized approach. In the last thirty years, the European systems experienced a diversification. Alongside universities, more vocational institutions appeared in the form of Fachhochschulen in Germany and more recently in Austria, Hogescholen in the Netherlands and Flanders (Belgium), Technology Institutes in Ireland and Polytechnic Institutes in the UK and Portugal. In Spain, vocational studies were developed inside the universities. In fact, Barnett stated (1994, 7), "higher education is now offered by a diverse range of institutions with their own ethos and mission."

With respect to the organization of the European higher education systems, Zaharia (2002, 304-305) points out:

> Generally speaking, in all countries higher education activity is structured at three levels: that of the ministry (department), that of consultive bodies, and that of the higher education institutions themselves (universities, "higher schools", institutes for studies of short duration, etc). …All measures regarding higher education are presented for consultation to a large number of bodies….In all the countries of the European Union, universities are administered democratically in ways that include participation of the academic staff, of students and of lay representatives. Universities are usually directed by an elected president or rector.

The previous statement on organization assumes particular relevance to the autonomy of institutions. The concept of autonomy assumes particular relevance when discussing the governance and management of higher education institutions within Europe. According to Buchbinder (1998, 100), "the achievement of autonomy is tied to both internal and external forces, the influence of political economy, and the internal structures and dynamics of governance within the university." There are two approaches to defining autonomy – political and contextual (Neave, 1988c). Bleiklie (2004, 4) stressed, "the essence of institutional autonomy is not to be found in specific administrative or organizational arrangements, but in its actual functioning with regard to the protection of values." It is interesting to note that autonomy is intrinsically connected with values. Also Bleiklie differentiates several forms of autonomy operating together, sometimes in conflict within a higher education institution. According to the author, there is the autonomy of the institution and individual autonomy of the members of the professional communities within the institution. A motivation for autonomy was noted by Gornitzka and Maassen (2000, 270) who stressed, "autonomy of universities and colleges is based on the idea that

government is overloaded and therefore 'technical' decisions can be left to the universities and colleges themselves". Other authors like Sporn (2003) emphasize de-regulatory convergence based on greater institutional autonomy, entrepreneurialism and external evaluation.

Magalhães (2001, 112) finds that autonomy does not have exactly the same meaning for the American system and the Western European systems. According to the author, autonomy to the American system "[…] is more than a claim, but a reality. On the contrary, the Western European systems – either continental or British, either Jacobian or Humboldtian […] have taken 'autonomy' to mean mainly academic freedom (freedom to teach, freedom to learn, freedom to search for the truth wherever it takes one) the state being not a menace to that exercise but its main guarantee".

Another perspective is articulated by van Vught (1988), who describes authority in continental Europe as having strong bureaucracy at the top, guild-like authority at the bottom and minimal authority in the middle levels of the hierarchy. The problem in European systems surfaces when decisions are needed. Loosely coupled institutions with strong authority at the bottom find it difficult to reach decisions. Clark (1983, 134) suggests decisions in European HEIs are "produced more by senatorial courtesy than by rectorial muscle."

The vast majority of the European systems are public and therefore dependent on public financing from their governments. Thus, their autonomy can be compromised. Burton Clark (1995) called attention to the fact that autonomy can be exploited from the financial dimension. Some authors suggest that the sources of funding should be diversified in order to protect institutional autonomy (Goedegebuure *et al.*, 1994b).

It may, perhaps, be time to discuss the alternative of equipping the academic administrators, before they assume office, with the strategic planning support and leadership skills that will allow them to manage effectively.

Higher Education Issues within the European Context

Two important trends that have impacted higher education within the European Union are enrollment rates and spending patterns. Data from the OECD (2000) show dramatic enrollment increases through the first half of the 1990's throughout the EU and accession countries. These data also show that, with the lone exception of France, private expenditures have outpaced public expenditures for higher education. However, it must be noted that future demographic forecasts would suggest a point of natural saturation is on the horizon for European higher education (Kwiek, 2003).

Within the European context, several important issues surrounding higher education can be identified (Kaiser *et al.,* 2003). First, the majority of institutions and systems within European higher education are public, and thus receive their powers and authority from the State. According to Scott (1999, 110), "the expansion of HE in almost every country has been intimately linked with the explosive extension of the power and influence of the State since 1945."

Second, the Bologna Declaration committed the 40+ signing countries (initially signed by 29) to converge their educational systems. The Bologna Declaration (1999) is a bold attempt to create a viable European Higher Education Area by the year 2010 in an effort to position Europe as a leading worldwide economy. This is the first of several key trends and developments identified by UNESCO-CEPES (2003) as vital to the advancement of European higher

education. Essentially, the Declaration of Bologna hopes to create greater compatibility and transparency between degrees and diplomas from participating countries, establish a two-cycle degree structure, secure the stability of the European Credit Transfer System (ECTS), implement a standardized quality assessment strategy across countries, eliminate impediments to mobility between countries and develop a European higher education dimension (http://www.bolognabergen2005.no/PDF/00Main_doc/0105Lourtie_report.pdf; http://www.bologna-bergen2005.no/; UNESCO-CEPES, 2003).

The Bologna Declaration has three general goals: employability, competitiveness and mobility (Nóvoa, 2002). However for now, as stressed by van der Wende (2003, 3), "the resistance to harmonization and standardization […] seems to remain, at least at the political level." She further states "European actions in higher education have expanded over the last decades in terms of their reach across policy levels and geographical borders. Increased international competition urged national governments to enhance cooperation in order to achieve greater cohesion between higher education systems, Europe being an obvious level for joint action."

The Bologna Declaration also raises some concerns. In fact, despite the known aspirations of the Bologna Declaration that deserve serious consideration as a vehicle to consolidate European citizenship, to promote social and human development, and European competitiveness, it would appear that behind the public agenda of Bologna there is more than an effort to build a competitive area of higher education, and that the process might be dominated by the economic agenda (Amaral, 2004). Therefore the national systems need to be attentive to the future directions that the process is going to take.

Third is the issue of quality. The European countries have created a great many national quality assurance systems, but few adequately address the growing internationalization of higher education. The European Network for Quality Assurance in Higher Education – ENQA, with the support of the European Union, has been establishing comparative indicators in order to increase the exchange of information and experiences between the member countries (http://www.enqa.net/). UNESCO-CEPES (2003) has called for a pan-European framework that will address the issues of quality assurance, accreditation and recognition of qualifications on the national, regional and international levels.

Fourth, student mobility and the transfer of credits between countries may have become somewhat diluted over the past 20 years or so. Originally, credit transfer was based on "equivalency." This was reduced to "recognition," and has now been replaced with "acceptance." The ECTS (European Credit Transfer System) aims at creating a transparent system whereby student learning achievements can be uniformly analyzed and accepted across participating countries. A six-year pilot study involving 145 HEIs has validated the process. As of 1997, all European institutions were able to participate in the program.

Fifth, new technologies and particularly the growth of the Internet are putting an emphasis on one increasingly commercial educational market. For example in Europe, the UK, German and French open universities are significant providers of online programs. Outside of Europe and particularly in the USA, Canada and Australia, the degrees offered by Internet are growing as well (Taylor & Machado, 2000). The rapid growth of alternative, trans-national educational providers (TNEs) presents a formidable and increasing challenge for traditional European HEIs. As long as HEIs hesitate to engage this lifelong learning market, these alternative providers will continue to expand, often with lesser quality, but a growing market-share (UNESCO-CEPES, 2003).

Sixth, as emphasized by Psacharopoulos (1998) and Johnstone (2003), financing is a major issue all around the world. European HE systems are also under financing pressure. According to Scott (1999, 110), "today universities are more dependent than ever on national governments for their budgets. As HE has expanded and its aggregate budget has increased, the pressure has grown for greater productivity and efficiency." Stakeholders, particularly students, are expressing expectations regarding State responsibility as a provider of public services toward higher education (UNESCO-CEPES, 2003). The advent of plural funding strategies involves the encouragement of HEIs to raise additional private income to supplement normal budgets.

Seventh, the relative stability that higher education enjoyed over the past five decades has ended. Today, transforming change is occurring that the academy must cope with. Led perhaps by the USA, more and more of the systems of higher education throughout the world are being influenced by powerful market forces. Increasing autonomy and competition for students is putting more responsibility on HEIs to maintain a distinctive advantage. With this responsibility are also growing demands for accountability. Market forces have their own momentum and are here to stay (Kwiek, 2003). The benefits and costs of markets in higher education are emphasized by Dill, Teixeira, Jongbloed and Amaral (2004, 349) in the Conclusions of the volume on *Markets in Higher Education: Rhetoric or Reality?* It is stated:

> Overall, there are good reasons to believe that a dogmatic and ideologically rooted approach to markets is unwise. Markets are neither the magic potion that will solve all problems in higher education, nor the personification of evil. If market forces have created serious imbalances and tensions in the systems that wholeheartedly embraced them, attempts to avoid market competition have led several systems to something of a dead end. Markets are one important and viable instrument of steering higher education systems in the twenty-first century, especially in order to complement government's function [….] Both markets and governments have a contribution to make to higher education regulation and both have costs and benefits. The appropriate balance between these two modes of conduct has to be continually reassessed, based on the purposes that society wishes higher education to fulfill.

There are clear signals of the influence of the market in the higher education sector (Dill, 2003; Kwiek, 2003; McGuiness, 1997). McGuiness (1997, 341), in a comparison study between Europe and the USA, defends that there are clear trends for the "[…] increased reliance on market forces to direct the system." This holds true in the USA, as well as Europe. Other authors consider that, at least in Europe, the situation is still a far cry from a real higher education market. For instance, Trow (1996, 310) declares, "[...] an element of market links can be found in most American institutions, though concealed or obscured by other kinds of linkages. Markets are still a relatively minor factor in Europe, which on the whole does not provide a market for higher education, and whose governments rather dislike the idea of a market for higher education and its potential effects on quality and status." Even in the case of the UK where Margaret Thatcher has introduced ingredients of "market" rhetoric – value for money, efficiency gains, students as customers – Trow (*ibid*) considers that: "[...] government in the UK employs the rhetoric of the market in connection with higher education, but since government controls the price universities can place on their services, and the amount and variety of services they can sell, universities currently operate not in a market but in something like a command economy."

A more reasonable position is to consider that despite the fact that no true higher education markets have been implemented governments are increasingly using "market-type" mechanisms as instruments of public policy, which have strong effect over the higher education institutions. In the words of Dill (1997, 178), "[...] while the superiority of these instruments (market mechanisms) to traditional forms of government regulation are yet to be clearly demonstrated, the adoption of these new types of market policies will likely have significant impact upon academic systems."

Some authors are clearly pro-market, demanding that higher education institutions need to focus their management needs in a more entrepreneurial manner (Sporn, 1999b). According to Sporn (1999, 30), "In Europe, entrepreneurial behavior will increasingly be the response to this new environment. Management structures and more adaptive capacity are designed to deal with these complex challenges." Others authors like Meek (2003, 197) are rather skeptical about the advantages of these new policies: "While market considerations are driving governance and management reforms in Australian higher education, the long-term efficiency of such an approach can be questioned."

Finally as a consequence of globalization, some other issues relating to higher education around the world are surfacing in European higher education as well. UNESCO-CEPES (2003) has called for increased recognition of the need for proactive efforts to develop a new generation of policies and laws on higher education. Among the issues are massification, internationalization and globalization (Scott, 1999). As stated by Gibbons (1998, 30), "the globalisation of the economy and the pressures of international competition are dissolving boundaries between nations, institutions and disciplines, creating a distributed knowledge production system that is becoming increasingly global […] [and] universities are part of this system."

The knowledge society (or economy) is characterized by the belief that wealth is more properly defined in terms of knowledge development and dissemination than by human and physical capital. According to Altbach and Teichler (2001, 24), "[…] higher education is a central element in the knowledge based global economy." The European Union recognizes the increasing importance of the knowledge society. The Lisbon Declaration developed by the European Council (2000), set the goal "[…] to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth" (http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/ec/00100-r1.en0.htm).

The European higher education system cannot avoid the reality of international competition and the myriad challenges that will pose in the future. Another challenge comes under the General Agreement on Trade in Services-GATS (GATS, 2001). The general goal of GATS is the liberalization of trade through a reduction of government interference and an increase in international competition. One of the 12 sectors identified in the agreement is educational services. Considerable discussion and consternation are being evidenced within the higher education community with respect to the impact this agreement might have on them (http://www.wto.org/english/tratop_e/serv_e/serv_e.htm). The inclusion of higher education as a part of GATS and its implications is an ongoing discussion. According to Altbach (2004, 22), "GATS seeks to establish 'open markets' for knowledge products of all kinds – including higher education. […] GATS and related arrangements also seek to provide a legally binding framework for the circulation of educational services and for the protection of intellectual property." Some authors emphasize the benefits while others perceive GATS as a threat to education (Larsen & Vincent-Lancrin, 2002).

Additionally, traditional-aged males from upper middle and professional classes no longer dominate the typical student cohort. Today, the social base is much broader, the proportion of women has increased dramatically and the graduates of HEIs tend more often to enter the mid-level work force rather than the elite stratus of leadership (Blackmore, 2002; Gibbons, 1998).

In these circumstances, several authors state the need for the European systems to give more attention to their management. Rhoades and Sporn (2002, 3) point out that "…there has been growing interest in Europe in more 'professionalized' models of management." Also Cowburn (2005, 103) stressed: "Traditional European universities have long exhibited a notoriously weak capacity to steer themselves. As their complexity has increased and the pace of change accelerated, that weakness has become more debilitating, deepening the need for greater managerial capacity."

Strategic Planning in Higher Education

The demands on higher education are putting a big responsibility on governance and management at the institutional level (van Vught, 2003). According to Rasmussen (1998, 38), "much has been said about the necessity of using strategic management in the steering of the universities today. Words like 'entrepreneurial' (Davis, 1995), 'innovative' (Clark, 1996), 'corporate style' and 'managerialism' (de Boer, 1996), 'business-like' (Geurts & Maassen, 1996), and 'external orientation' have been used to stress the importance of managing universities in accordance with the very dynamic societies of which they are indeed a part." These are times of rapid change. It is precisely in times of transformation that formal planning strategies are most needed in the higher education system. The increased environmental ambiguity requires educational institutions and other public entities to think and to act strategically as never before (Bryson, 1988).

As organizations, institutions of higher education differ substantially from business organizations where strategic planning has flourished more than diminished. Much has been written in recent years about the unique organizational features of higher education. Of particular note, expectations of collegiality and shared governance provoke a distinctly different picture of institutions of higher education than for the business sector. Perhaps most noteworthy is the fact that a bottom line mentality, as found in the sphere of competitive business, is replaced in higher education with a culture that can best (perhaps idealistically) be defined as a collegial, academic community of scholars. While this may not always define the reality of institutions, philosophically it still guides attitudes and expectations. Higher education has been able to use strategic planning successfully by combining the basic elements of planning with the unique characteristics of HEIs. By clearly understanding the key differences, institutions of higher education appear to have been able to find adaptive strategic planning approaches (Schmidtlein, 1990).

Keller's book is considered the Bible of strategic planning in higher education and he is referred to as the Father of the process in higher education. George Keller's vision in his classic book, Academic Strategy: The Management Revolution represents an appealing scenario:

> The dogma of colleges as amiable, anarchic, self correcting collectives of scholars with a small contingent of dignified caretakers at the

> unavoidable business edge is crumbling. A new era of conscious academic strategy is being born. The modern college and university scene is one that is no longer so fiercely disdainful of sound economic and financial planning or so derisive of strategic management. Professors and campus administrators are now uniting to design plans, programs, priorities, and expenditures in order to insure their futures.
>
> Keller (1983, viii-ix)

Planning literature acknowledges the positive role of the process in higher education. The literature suggests that effective planning provides a process for dealing with value conflicts, leads to identifiable results, makes a difference and offers great enrichment and direction to higher education (Bryson, 1988). Planning is perceived as a vehicle for change, the assumption being that an institution will be strengthened, or achieve organizational success as a result of its planning initiative. Strategic planning is a specific method of moving an institution forward in which strategies are formulated and implemented in consideration of the organization's environmental context, enabling the institution to acquire sufficient resources to attain its goals (Rose, 2003; Taylor & Miroiu, 2002).

The concept of strategic planning emerged in the business sector in the late 1950's (Mintzberg, 1994). Its popularity grew rapidly as companies used this new management tool to achieve comparative advantages. Public and non-profit organizations recognized the usefulness of strategy formulation during the 1980's. Most well known models of public and non-profit strategic planning have their roots in the Harvard policy model developed at the Harvard Business School (Bryson, 1988). In the late 1970's, it began to dominate higher education literature on planning. In the 1980's, it became popular in higher education in the USA (Chaffee, 1985a). According to Watson (2000, 14):

> Managing strategy is arguably the most important thing a college or university does, enabling all of its core activities of teaching, research and a wider social and economic service to be optimally achieved. It involves a thorough knowledge of the institution's present strengths and weaknesses and the making of choices about the future. … A sound, well expressed strategy will encapsulate the institution's self-identity, gather business and win friends.

George Keller, with his book, Academic Strategy: The Management Revolution (1983), brought the concept of strategic planning to the attention of higher education. Before that, there were only discussions of the applicability of strategic planning to higher education (Steiner, 1979b; Young, 1981). Keller (1983, 151) says that strategic planning places the fate of the institution above all else:

> Strategic planning places the long-term vitality and excellence of the college or university first. It cares about traditions, faculty salaries, and programs in Greek, agriculture, and astrophysics. But it cares about institutional survival more, so that there will be places for scholars of Greek, agriculture, and astrophysics to teach and do their research. Scholars cannot easily hang their shingle out like physicians or architects […]. Professors still need to unite as a universitas.

Authors like Austin (2002); Keller (1983); Meredith (1985); Peterson (1999b); Rowley Lujan and Dolence (1997) stressed why it is advantageous for higher education institutions to engage in strategic planning as a process by which campuses can strengthen their competitive advantage. According to Tan (1990), strategic planning may encourage the clarification of existing goals and serve to develop the institution's mission, and thus reduce ambiguity. The author emphasizes the sense of positivism that is spawned and nurtured when major institutional matters are clarified, confidence and security are strengthened and internal and external images are enhanced. According to Shirley (1988), strategic planning describes a type of process that focuses on a melding of external opportunities and trends, internal strengths and weaknesses, and personal values of staff and community. The strategic concept presumes an ongoing substantive and purposeful moment whereby an organization seizes its strategic opportunity through design, rather than chance (Mintzberg, 1994; Peterson, 1989). Mintzberg (1994) has said that strategic planning can play roles such as providing analysis to managers, helping translate intended strategies into realized ones, and providing a control device, but that it is not effective for the development of strategy.

Planning embodies the concept that the institution will be strengthened to achieve organizational success as a result. Strategic planning is often characterized as proactive with a precept that emphasizes the need for proactive movement and the strengthening of the organization (Peterson, 1989). An effective strategic planning process provides a framework within which quality tools and processes can be utilized (Gibson, 2002). Many theorists believe that the adoption of the planning process is imperative for the survival of higher education institutions (Keller, 1983; Rowley, Lujan & Dolence, 1997; Shirley, 1988; Schmidtlein, 1990).

The factors that influence the adoption of planning were outlined by numerous authors: organizational complexities and external constraints; scarce financial resources, a process that improves the quality of decisions made as well as the quality of the decision-making process; new technologies; developing cross-industry relationships; globalization of higher education; a conduit that keeps the units working in harmony toward the same end; and finally the post-industrial environment's turbulence, competitiveness, lean resources and unpredictability.

Several benefits from involvement in planning appear consistently in the literature. These include clarification of the institution's mission; improved ability for the institution to face challenges, to be proactive and to actively shape its own destiny; the capability to manage change and innovation; the capacity to support decision-making; the strengthening of leadership; help with the allocation of resources; the improvement of institutional quality assurance measures; and overall enhancement of the ability of the institution to think and act strategically (Rowley, Lujan & Dolence, 1997).

Institution-wide planning processes were implemented in higher education during the 1980's in the USA as a means of addressing growing demographic, economic and social pressure, and as a result of an increasingly complex internal environment coupled with growing constraints in the external environment. Bryson (1988) cautioned that because strategic planning was developed in the business sector, careful attention must be given to any attempts at the application of those models in public and non-profit sectors. Accordingly, each planning process should reflect the individual organization's environment. Bryson has developed an eight step strategic planning model designed specifically for public and non-profit organizations. The Bryson strategic planning model can provide a mechanism for the identification of important internal and external issues. It can facilitate recognition of organizational strengths and weaknesses and help to identify major opportunities.

There are a number of criticisms levelled at the use of strategic planning in higher education, many of which are similar to those mentioned by practitioners and researchers in the business sector (Birnbaum, 2000). Authors like Meredith (1985) and Schmidtlein (1990) refer to and argue against some of those criticisms. Peterson, Dill, Mets and Associates (1997) were warning that strategic planning was not always working as well for higher education as had been hoped. In higher education, much of the criticism of strategic planning derives from the belief that a model arising from military roots and grounded in organizational success as defined by profitability could not translate into higher education, where goals may be ambiguous and not easily measured, where the organization is loosely coupled, institutional leaders lack control over major processes, internal and external constraints exist, and where resources are inflexible (Schmildtlein, 1990).

Despite the criticism arising about strategic planning within HEIs, scholars claim that effective strategic planning is what separates the average from the above average, and makes planning institutions emerge as leading institutions (Keller, 1997). Hunt *et al.* (1997, 11-12) refer to several reasons why strategic planning should be considered for a higher education institution:

1 "To improve performance toward meeting the mission statement;
2 To improve performance toward increasing the academic standing of the institution;
3 To increase accomplishments with the same or lower level of resources;
4 To clarify the future direction of the institution;
5 To meet the requirements of accreditation or of a government agency;
6 To solve major problems (threats) or address significant opportunities facing the institution;
7 To provide an opportunity for leadership such as the time of the appointment of a new president; and
8 To bring the university community together in a cooperative effort."

As noted by Cowburn (2005), one of the main reasons strategic planning does not succeed as often as it might is that idealized thinking tends to get in the way of reality. Reality is telling HEIs that government support is and will continue to be insufficient to support the full array of goals and objectives within an institutional plan. It is also telling them they can no longer hope to be all things to all people; that HEIs need more differentiation through focused missions.

The concepts of strategic thinking, management and planning permeate discussions about how HEIs should be led and managed. During the 1980's, according to Salter and Tapper (2000, 69-70), "A new discourse of governance began to emerge where the language of economics and management sought to replace that of 'professionalism', 'administration' and the 'public interest'. In large part the discourse was borrowed from the private sector […]. The effect of the discourse and the values it embodied was to discredit the established model of centralized bureaucratic welfare delivery and to promote what became known as New Public Management characterized by a system of devolved management, responsive to consumer pressures and capable of utilizing market mechanisms within an overall structure of contractual accountability." Therefore in higher education institutions, New Public Management (also known as managerialism) has surfaced as a new issue with the transformation of institutions (particularly in the Anglo-Saxon countries) from a bureaucratic and professional orientation to

one more focused on market demands and an entrepreneurial spirit (Amaral, Meek & Larsen, 2003).

New managerialism facilitates the deconstruction of bureaucratic hierarchies (Reed, 2002) that invariably produce roadblocks to effective planning. This new and quite divergent orientation suggests the *status quo* where academics are elevated to managerial and leadership positions within the institution, must give way to the introduction of more productive and flexible administrative practices. It may well be that academics, buttressed with a comprehensive institutional strategic plan, could generate the effective and adaptive forms of leadership that the New Managerialism advocates are suggesting. Clearly, any form of leadership is better guided with a plan, a road map, or a navigational compass. Given this advantage, it is quite conceivable that managerialism is really a matter of providing the academic leadership with the strategic direction they need through a planning process. The dialogue seems endless about the dichotomy between academic leadership and a new managerialism.

The managerial revolution is a reality and a need. Interestingly, while HEIs have moved closer to the industrial pattern of organization with senior management teams, strategic plans, line managers and cost centers, corporations have become more collegial in their approach to management. This revolution has created an institutional and managerial energy that both competes with and compliments the academic community. This movement in concert with traditional institutional bureaucracy has fabricated a more complex modern institutional structure that has not been seen before (Gibbons, 1998). Perhaps this apparent divergence between managerial coherence and intellectual incoherence conceals a possibility for promise. Could it be that a strengthened institutional management component will buttress the waning coherence of scientific inquiry? As stated by Magalhães (2001b, 380), "[…] the world is becoming post-modern, uncertainty of what counts as knowledge and what counts as science is undermining higher education which is being forced consequently to deal with the re-definition of its social role and its institutional mission." Institutions of higher education need the clarity and focus of systematic and strategic planning initiatives in order to chart their direction in these evolving times. There seems to be no viable alternative.

The Case of Portugal

The origin of Portuguese universities traces back to the middle of the 13th Century. Portuguese higher education today is organized into public and non-public HEIs. Under public higher education, there are universities, polytechnic institutes, and military and police schools. Private and cooperative higher education includes universities and other establishments. There is also a multi-campus Catholic university with a unique status.

Portuguese higher education is no exception to what was stressed in the *World Declaration on Higher Education for the Twenty-First Century*: *Vision and Action* (1998),"Everywhere higher education is faced with great challenges and difficulties related to financing, equity of conditions of access into and during the course of studies, improved staff development, skills-based training, enhancement and preservation of quality in teaching, research and services, relevance of programs, employability of graduates, establishment of efficient cooperative agreements and equitable access to the benefits of internal cooperation." (*ibid*, 1). In these circumstances, the need for strategic planning in Portuguese higher education is emphasised by Marçal Grilo (2003, 11), who states "only with strong leadership and strategic planning is it possible to increase the role of the universities in our modern society."

In Portugal, according to the Decree-Law 183/96 and Law 113/97, public HEIs are required to submit a Development Plan that is, essentially, a rudimentary framework for a strategic plan. The guidelines, or VADEMECUM, for the development of this document are clear and constructive. Amaral, as reported in *Politécnica do Instituto Politécnico de Leiria* in an article summarizing the seminar on "Development and Quality of Higher Education-Rethinking Higher Education" (2002), indicated that to his knowledge development plans done as requested and following the guidelines of the VADEMECUM and presented to the Ministry have so far produced no results at all. Later evidence obtained from HEIs in the course of our earlier research (Machado, Taylor & Farhangmehr, 2004a,b; Machado, et .al, 2005) would suggest these guidelines are not always being properly adhered to. Perhaps more importantly, the Ministry is ignoring these procedural transgressions, and inappropriate submissions are being accepted without comment. Personal communication with senior leaders of HEIs suggests these documents are not given serious consideration, if read at all, and nothing of importance results from their submission. Furthermore, there is no such law concerning private higher education institutions.

Until this research by the authors, no studies on institutional planning had been conducted in the setting or unique context of the Portuguese higher education system (Machado, Farhangmehr & Taylor, 2004a). The study by the authors involved interviews and surveys of HEIs across Portugal with respect to their understanding of and involvement in the process of institutional planning. Some of the findings are related below. For a more detailed analysis of the research, the reader is referred to Machado, Farhangmehr and Taylor, 2004a,b; Machado, Taylor and Farhangmehr, 2004; Machado, Farhangmehr and Taylor, 2005; and Machado, Taylor, Farhangmehr and Wilkinson, 2005.

Most institutions in Portugal included in this study indicated their process started at the top of the organizational structure and worked its way down, with some mixture of feedback and input coming up from the bottom. A plausible explanation for this might be that public institutions are responding to a directive (the VADEMECUM) from the Ministry in charge of higher education that would suggest the need for a response orchestrated from the leadership of the public HEIs. Most of the Development Plan documents examined did not meet the criteria of a strategic plan, however.

An examination of the strategic planning institutions reveals a top-down process where the leadership was clearly in charge of the process. The mission statement was routinely documented; however, many institutions made reference to the published statements in the statutes regarding duties and responsibilities. It is the researchers' opinion these do not constitute mission statements, and therefore many HEIs were, in reality, without one.

With respect to variables that affect planning, the HEIs surveyed suggested the most often noted was the lack of financial resources. This was especially emphasized by the public HEIs. Between institutional types, lack of financial resources along with human and technological resources were statistically significant. Another variable noted as having a very large influence on what institutions can and cannot do was governmental regulations.

In the broadest sense, it is believed that the concept of strategic planning within the Portuguese higher education enterprise is only beginning to evolve. While some sincere efforts were found, they were accompanied by naive misunderstandings, inflated self-reporting and fragmented implementation in many cases. While a minority of HEIs was actually pursuing a strategic planning process, many expressed a respect for it and a desire to begin. One must wonder if it is a preferred activity, why it is not being pursued by more HEIs. Two thoughts

come to mind. First, it may simply be "trendy" to be pro-planning and responses were no more than efforts to be mainstream. Second, a full understanding of how to proceed may have been absent and HEIs simply did not know how to proceed with the process.

Conclusions

Institutional planning has evolved and matured in the United States over recent decades. In fact, the progress that has been made is so significant compared with many higher education systems throughout the world that a disconnect has materialized. Internationalization has brought students, scholars, institutions and other partners together throughout the world in meaningful ways. This must also occur within the arena of planning. It is important for those in the United States who are fully engaged in advancing institutional planning to recognize the enormous chasm that separates their progress with the neophyte aspirations of some other countries. European countries are at different stages of development, but virtually all of them recognize the merits of properly executed institutional planning. Many are struggling to find ways to turn their aspirations into realities. This does not mean that those well-versed in the process can simply parachute into other countries and transform them through lock-step consulting approaches. It's not that simple. In fact, a few failed attempts to introduce planning in other countries can change optimism into pessimism very quickly and curtail further interest.

First and perhaps most important, as a general rule, European higher education is a bit distrustful of the American system. Many Europeans view U.S. involvement abroad in higher education not as an effort toward "internationalization," but rather "Americanization." They consider U.S. higher education clearly the strongest in the world, but also excessively homogenized so that it is hard to differentiate the majority of institutions one from the other. Mission drift and an overzealous affinity for a market-driven mentality are seen as driving forces Europeans are not sure they want introduced into their systems (Machado, et .al, 2005). It should be pointed out that the market is becoming a force in Europe, but it is confronting obstacles from the lingering welfare state that are impeding its progress.

Second, the planning expertise from the business sector is more established and mature than that found within higher education. The business sector could probably make meaningful contributions to planning in European higher education institutions with a little additional effort. That effort would involve learning the obvious and subtle differences between the cultures of business and higher education. This should start with a grasp of the nuances found within the States, then be followed by an examination of Europe. Ultimately, and before networking with Europe, one would be advised to examine the higher education culture within the specific country they will engage. The diversity between countries in Europe is far greater than that between states in the U.S. With this preparation would come a cultural sensitivity that would be well-received abroad.

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Management Information Systems curricula:a comparison between China and the USA

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Abstract

This article compares a Management Information Systems program offered at a university in the United States with a similar program offered at a university in China. The 2 universities involved in the study are Northern State University (NSU) in Aberdeen, SD, and Capital Normal University (CNU) in Beijing, China. The MIS program was chosen because of the technology component and the importance of being able to communicate globally in today's world. However, the findings offer insights into other programs, as well. For instance, there is an emphasis on general education courses, as well as a core set of courses, at both universities. At the same time, there are noticeable differences, such as the CNU requirement that students participate in military training. The CNU program also has a stronger emphasis on the major field of study than the Information Systems program offered at NSU, whereas the NSU curriculum has a stronger emphasis on general education.

Keywords: Management, Curricula, MIS, Higher education, Comparison.

Management Information Systems Curricula: A Comparison between China and the USA

Northern State University is a small, multipurpose public university of approximately 2,500 students, most of whom are undergraduate students, with approximately 200 students enrolled in the masters program (Northern State University [NSU] website, 2007). In contrast, Capital Normal University, funded by the Beijing Municipal Government, has approximately 27,500 students, of which approximately 10,000 are undergraduate students, approximately 15,000 are students of adult education, and the rest are primarily graduate students (Capital Normal University [CNU] website, 2007). As shown in Table 1, CNU has 2,465 faculty members, with 1,156 of those serving as fulltime faculty. There are 685 professors and associate professors, 256 with doctorates and 406 with master's degrees. Conversely, NSU has 93 fulltime faculty members, 76 of which have terminal degrees. Of the 93 faculty members, 21 are full professors, 25 are associate professors, 34 are assistant professors, and 13 are instructors.

Although CNU is a much larger university than NSU, several similarities exist between the two universities. As a university approved by the Ministry of Education to receive foreign students and students from Hong Kong, Macao and Taiwan, CNU is engaged in activities of international cultural exchange and has established cooperative relations with 68 overseas colleges and educational institutes. Over 300 international students are enrolled at CNU (CNU website, 2007). Similarly, NSU is home to the Center of Excellence in International Business.

NSU's Center of Excellence supports the International Business Studies major and a variety of international activities. Over 100 students from other countries attended NSU in 2006-07. NSU has cooperative relationships with 19 exchange partner universities from eight different countries, with additional partnerships in the development stage (NSU website, 2007).

Capital Normal University's goal is to grow into an education-oriented and research-based first-class comprehensive normal university. Similarly, Northern State University has recently significantly increased its focus on research, supported by the South Dakota Board of Regents' efforts to increase research activities throughout the state.

CNU had 40 students majoring in Information Systems in 2006 (35 from the local area and 5 from other providences) (Capital Normal University [CNU], 2006c), likewise NSU had 39 students in 2006 (Northern State University [NSU], 2006); hence the number of majors in each program is very comparable. The biggest difference between the two universities is their size in terms of total enrollment, which is obviously quite dramatic. On the other hand, CNU serves as an important base for the development of qualified teachers in primary and secondary education in Beijing. Similarly, NSU has had a strong history of producing quality educators. In fact, at one time, NSU was referred to as "Northern Normal," indicative of its role in the development of qualified teachers for primary and secondary education throughout the state of South Dakota. As will be shown, there are a number of similarities between the Information Management and Information Systems program at CNU and the Management Information Systems program at NSU, some of which will be indicative of similarities between other programs. At the same time, several differences will be noted, as well, highlighting some of the dissimilarities, in general, between higher education in the United States and higher education in China.

Institutional Size Comparisons

It was noted earlier in this paper that there is a considerable difference in the size of the two institutions, NSU and CNU. However, when the city populations are compared, the proportional size difference brings a new perspective to the size comparisons. Beijing has a population of 16,330,000 (China Data Online, 2007) compared to an Aberdeen population of approximately 25,000 people. The size of the student population of NSU is approximately 9.09% of the size of the student population at CNU, whereas the size of the population of Aberdeen is approximately 0.17% of the size of the population of Beijing. Similar comparisons can be made between the size of the two countries, the USA and China. In other words, it would be expected that there would be significant differences in the sizes of the institutions, because of the differences in the populations of the two cities, as well as the countries.

General Education Requirements

There is a focus on general education, or a liberal arts education, at both CNU and NSU. At CNU, the development of comprehensive quality is an integral part of the mission of the university. Apart from specialized skills, great importance has also been given to education of general knowledge. Over the years, backed up by the advantage of multi-discipline strength, 200 general elective courses of four major categories have been offered, including social science, art and sports, natural science and educational science. Meanwhile, dozens of supplemental courses are also available to the students, including music, fine art, computerized art design, sexual health education, English and computer skills, etc. (CNU, 2006a)

Similarly, NSU's programs include courses that meet requirements in several categories: system general education, institutional graduation, degree, and major. The general education component consists of courses in speech and composition, mathematics and natural sciences, arts and humanities, and social sciences. (NSU, 2006)

Degree Requirements

Both universities, NSU and CNU, offer 4-year programs. However, the requirements in China appear to be somewhat more rigorous than in the United States. As shown in Table 2, the total "credit points" required for completion of the 4-year degree at CNU is 196, compared to the typical requirement of 128 credit hours (120 at some universities in the USA) to complete a 4-year degree at NSU. At CNU, a typical 3-credit class meets for 40 minutes per day, three days per week, over an 18 week period, whereas a typical 3-credit class at NSU meets for 50 minutes per day, three days per week, over a 15 week period (plus finals week). The total contact hours for a 3-credit CNU class are 36 hours, while the total contact hours for a 3-credit NSU class are 37.5 hours. However, in order to complete the degree in four years, CNU students must average 24.5 credit points (just slightly more than eight 3-credit classes) per semester. NSU students, on the other hand, must average 16 credit hours (slightly more than five 3-credit courses) per semester. (CNU, 2006a; CNU, 2006b; NSU 2006)

Curricula

Table 2 provides comparative data between the curricula at CNU and that at NSU. The biggest difference between the curricula at CNU and at NSU appears to be in the major. CNU requires 123 credits in the core and major combined, compared to 70 credits in the core and major combined at NSU. It is even more noticeable when the credits in the major are compared. CNU requires that students complete 92 credits in Information Management / Information Systems courses, compared to 24 credits in the Management Information Systems courses at NSU (NSU, 2006). This would seem to indicate that the CNU Information Management and Information Systems program is considerably more rigorous than the Management Information Systems program at NSU. Students who complete the degree requirements at CNU are exposed to many information systems courses that are not available at Northern, which one would assume would better prepare them for information systems positions in business, industry, and government, as well as for advanced degrees. Conversely, the general education requirements are higher at NSU, which would seem to indicate that NSU students receive a more well-rounded education, outside their major area of study.

The other notable difference between the CNU and the NSU curricula is in the area of "other requirements." For instance, military training is required at CNU, whereas it is neither a requirement nor an option at NSU. In addition, CNU requires several internship-related courses, but many of these appear to be similar to the shadowing programs offered in many high schools in the United States. Upon completion of the "shadowing" experience, it appears that CNU students are required to complete an internship in their field. Although students in the MIS program at NSU are strongly encouraged to participate in internships, it is not a requirement. (CNU, 2006b)

CNU students are required to complete an integrated curriculum design course, which involves a comprehensive project and a final paper, somewhat like the theses that are required in

most master's programs in the United States. The course is designed to allow students to participate in comprehensive training by performing actual project work, which includes project management, programming, information systems design, project organization, team work, etc. A group of four to six students make up a team and each team is assigned to a different project. This project is started during the second semester of the junior year and completed during the first semester of the senior year. The students meet one day per week to discuss and research this project as a team. If the project is creative and can be implemented in business or commercialized, there is funding available to the students. At the end of the project, each team must write a report and defend the project. CNU students do not receive credit for the project and paper, but successful completion is a requirement for graduation. (CNU, 2006c)

Correspondingly, MIS majors at NSU are required to complete a capstone business course called Business Policy and Strategy, designed to help students "develop an understanding of strategy formulation, implementation, and evaluation. It involves integrating all functional areas of business, analyzing the environment in which the firm operates, and choosing strategies than enable the firm to meet its objectives." (NSU, 2006). A notable difference in the two courses is that the IMIS project is more specific to the major, whereas the Business Policy and Strategy course ties the various areas of business together into a culminating experience. Additionally, NSU students receive credit for the Policy and Strategy capstone course. NSU students must also complete an exit exam, which is a requirement for graduation. However, low scores do not (at least at the present time) prevent students from graduating; rather, the exam scores are used to assess the effectiveness of the program. Also, the comprehensive course taken by the CNU students as a requirement for graduation is specific to the major, whereas both the capstone course and the exit exam taken by the NSU students as a requirement for graduation cover a broad spectrum of business subjects (applicable to the business core, not just the MIS major). (Northern State University Office of Instructional Research website, 2007)

Course Offering Comparisons

As shown in Table 3, only 12 of the courses offered as part of the Management Information Systems program at NSU are comparable to the courses offered in the Information Management and Information Systems program at CNU. Table 4 shows the courses necessary for completion of the Management Information Systems program at NSU, grouped into a sample schedule for completing the program in a four-year period (NSU, 2006); Table 5 provides a four-year schedule that indicates the range of courses from which CNU students can select each semester over the same four-year period; and Table 6 lists the entire set of course offerings for the Information Management and Information Systems program at CNU. Table 4 and Table 5 are somewhat different in that the NSU schedule (Table 4) is a sample schedule of which courses could be taken each semester in order to accumulate 128 credit hours and complete the MIS program in four years, whereas the CNU schedule (Table 5) lists *all* possible courses that are offered for IMIS majors each semester over the same four-year period (CNU, 2006b).

At NSU, MIS 205 (Advanced Information Systems) and MIS 325 (Management Information Systems) are part of the business core and as such are required of all business majors. In addition to these two courses, the other courses available in the Management Information Systems program at NSU are listed in Table 7. (NSU, 2006) A review of the Major Courses section of the CNU courses listed in Table 5 reveals that there are over 40 courses available in the area of Information Management and Information Systems at CNU (CNU,

2006b), whereas only 15 MIS-related courses are available in NSU's Management Information Systems program. However, the size of the student and faculty populations at each institution must be taken into consideration. The College of Information Technology at CNU has more than 90 staff members and over 1,000 undergraduates and post-graduates. The Information Management and Information System major is one of six majors within the College. The other majors are 1) Computer Science and Technology (education); 2) Computer Science and Technology, 3) Electronic Information Engineering, 4) Software Engineering, and 5) Information Engineering, which includes concentrations in a) intelligent information engineering and b) network and communication engineering. (CNU, 2006c)

The MIS Department is one of four departments in the School of Business at NSU, and the only department in the School that offers Information Systems / Technology courses (other than the Accounting Systems course) (Northern State University website, 2007). On the other hand, the IMIS program is one of six majors (listed above) in the College of Information Technology (CNU website, 2007), so the number of Information Systems / Technology courses available at CNU is much larger, as would be expected with an entire college providing systems / technology type courses, compared to the offerings of a small MIS Department in the School of Business at NSU.

At CNU, a large number of faculty must be employed in the program in order to accommodate classes for the large number of students taking courses in the College of Information Technology. Furthermore, because the other five majors in the College are interrelated with the Information Management and Information Systems major, it is possible to offer the same course as an elective in multiple majors. As a result, it is possible to have a large number of course offerings available for students in the Information Management and Information System program. In contract, not only is NSU's size quite small in comparison to CNU's, but moreover the size of the MIS Department at NSU is extremely small, as mentioned above, consisting of one part-time faculty member (he is fulltime, but teaches part-time in another area and part-time in MIS) and three fulltime faculty members. Similarly, the number of MIS majors at NSU is quite small, with 39 students majoring in MIS in 2006-07 (NSU website, 2007). The South Dakota Board of Regents requires a minimum enrollment of 10 students; course offerings with fewer than 10 students are cancelled. The typical class size in the School of Business is much larger than this, with most classes having 20 to 30 students enrolled. Thus, it would not be feasible to offer the number of courses at NSU that are available at CNU; there would not be a sufficient number of students to fill the courses, nor would there be a sufficient number of faculty to teach the courses. As it is, most MIS courses at Northern are only offered once a year and several of the electives are only offered every other year.

Student Comparisons

Before comparing the student populations at the college level, it might be helpful to note some differences at the high school level. In China, high school is mandated for all students. (Special schools are provided for those students with learning disabilities.) Conversely, in South Dakota, high school students can drop out of school at the age of 16, so not all students have a high school diploma.

Also, it should be noted that there are probably differences between the student populations at the two institutions in terms of student preparedness. CNU applicants must pass the National College Entrance Examination before they are admitted into the university. The use

of the National examination to select students for higher education (and positions of leadership) has been an important part of Chinese culture (Wikipedia, 2007). The examination continues to be used as the basis for recruiting academically able students. China has a very competitive labor market, which is highly dependent on a college degree, so the competition for acceptance into universities in China is very fierce. Only a relatively small percentage of the people are allowed to go to college in China and the entrance examination serves as an effective tool in filtering out those people less likely to succeed.

Students in the United States are also required to complete a college entrance exam, typically either the SAT (Scholastic Aptitude Test) or the ACT (American College Testing). However, unlike the universities in China, students who have a low ACT score are typically conditionally accepted at NSU and are required to complete a series of remedial courses to help prepare them for college courses. In other words, in effect, NSU has what might be considered an open-enrollment policy, as opposed to the very selective and competitive process utilized in China.

Conclusions and Implications

From our comparisons of the curriculum of the two schools, we found several similarities between the two Information Systems programs. For example, both universities offer general education courses, core course, and courses in the major. On the other hand, we also found several differences between the two universities in terms of the Information Systems major. One explanation for the differences might be due to the dissimilarities in the sizes of each institution, as well as the sizes of each department. Another explanation might be the cultural differences of the regions and the different environments in which the students live.

For example, it was noted in the curriculum section, above, that the CNU IMIS program appears to be much more rigorous than the MIS program at NSU. CNU students must earn a total of 192 credits in order to graduate, compared to 128 credits at NSU, and over 40 courses are available as part of the IMIS program at CNU, whereas the MIS program at NSU is limited to 15 courses. Similarly, the comprehensive training that is completed by the IMIS students at CNU is more specific to the major than the broader capstone course that is taken by MIS majors at NSU. The implication would be that CNU graduates are much better prepared in their major area of study. On the other hand, American students complete more General Education courses, as well as a core set of business courses, which might imply that they are receiving a more well-rounded education, and as a result might be better prepared for the transition from a college life to a professional life.

Another difference is the emphasis on military training in China, whereas the USA uses a “volunteer army” to help protect its borders. Military training, while mandatory at CNU, is not an option at NSU. This difference is a result of cultural differences between the two countries, but has little overall impact on the rest of the curriculum.

In terms of other cultural differences, Chinese students do not work prior to graduating from college. Conversely, most American students work to put themselves through school. A large percentage of the NSU students work part time and many work fulltime while working toward their degrees. Then again, the project training that is completed by IMIS students helps provide the experiences needed to transition from an educational setting to a work environment. It would appear that Chinese students might be better prepared for specialized careers in information systems, whereas American students might be better prepared to take on a bigger

variety of roles in business and industry, due to the broader nature of the curriculum. However, regardless of the size or cultural differences of the two institutions, or the overall preparedness of either group of graduates for future career opportunities, the authors have determined that there are certainly aspects of the curriculum at each university in which we can learn from each other.

Further Study

This has been a preliminary descriptive comparison of the Information Systems major at two different schools, one in American and one in China. There are several dimensions in which this study could be expanded. One direction is a further examination of the curriculum at the course level at each institution, which would compare textbook selection, lecture styles, form of testing and examination, and most importantly, assessment of learning outcomes, as well as teaching performance. Another direction might be to compare faculty qualifications, including their degrees, educational backgrounds, and experience in industry. A third direction might be to compare job opportunities for graduates by comparing the types of jobs available to Information Systems graduates and the competitiveness of the job market in each region or country. A fourth dimension would be to include further comparisons among additional universities within these two regions or countries, as well as further expansion into other countries.

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Table 1
Institutional Comparisons

	CNU	NSU
Number of students	27,500 students (approx. 10,000 undergraduate students; 15,000 adult education students; 2,500 graduate students)	Approx. 2,500 students (approx. 200 graduate students, the rest undergraduate students)
Number of faculty	2,465 faculty members (1,156 fulltime; 685 professors and associate professors, 256 with doctorates and 406 with master's degrees.	93 fulltime faculty members (76 with terminal degrees; 21 full professors, 25 associate professors, 34 assistant professors, and 13 instructors)
International students	300	100
Local population	Approx. 15,000,000	Approx. 25,000
Degree requirement	4-year, 196 credits (252 available)	4-year, 128 credits
Semester term	18-week	15-week
Typical class hour	40 minutes (3 times / week)	50 minutes (3 times / week)

Table 2
Curriculum Comparisons

CNU Credits		NSU Credits	
		System Gen Ed	32
General education	34	NSU Gen Ed	11
Other requirements	27	BS Gen Ed	8-9
Program core	31	Business core	46
IM/IS major	92	MIS major	24
General electives	12	General electives	6-7
Total	196	Total	128

Table 3:
Course Offering Comparisons

CNU			
Course No.	Course Name	Credits	Category
3103337	MIS (Integrated Curriculum Design)	2	OR
3100103	Major Internship	6	OR
3050306	Probability & Statistics	3	MR
3103334	Principles of Economics	4	MER
103342	Accounting Principles / Accounting Information System	4	MER
3103025	VB Programming	2	ME
3103049	Web Programming	3	ME
3103313	Decision-making Support System	3	ME
3103343	Webpage Design	2	ME
OR = Other Required; MR = Major Required; MER = Required Major Elective; ME = Major Elective			
NSU			
Course No.	Course Name	Credits	Category
MIS 325	Management Information Systems	3	BC
BADM 494	Internship	3	O
BADM 220	Statistics	3	BC/GE
ECON 201	Principles of Microeconomics	3	BC/GE
ECON 202	Principles of Macroeconomics	3	BC/GE
ACCT 201	Principles of Accounting I	3	BC
ACCT 202	Principles of Accounting II	3	BC
ACCT 360	Accounting Systems	3	M*
CSC 130	Visual Basic Programming	3	M
CSC 140	Web Programming	3	M*
MIS 384	Decision Support Systems	3	M*
MIS 210	Web Authoring	3	M*
GE = Gen Ed requirement; BC = Business Core; M = Major; O = General Elective			

Table 4
Sample NSU Undergraduate Schedule

Management Information Systems, NSU GE = Gen Ed requirement; BC = Business Core; M = Major; O = General Elective			
Course No.	**Course Name**	**Credits**	**Category**
2006-2007 Fall		Year:	FR
MIS 205	Advanced Computer Applications	3	BC
ENGL 101	English Composition I	3	GE
	Laboratory Science	3	GE
	Social Science	3	GE
	Humanities & Fine Arts	3	GE
	Subtatal	15	
2006-2007 Spring		Year:	FR
English 201	English Composition II	3	GE
	Humanities & Fine Arts	3	GE
SPCM 101	Fundamentals of Speech	3	GE
	Laboratory Science	3	GE
	MATH 102 or above	3	GE
	Wellness	2	GE
	Subtatal	17	
2007-2008 Fall		Year:	SO
ECON 201	Principles of Microeconomics	3	BC/GE
ACCT 201	Principles of Accounting I	3	BC
BADM 220	Statistics	3	BC/GE
	Humanities & Fine Arts	3	GE
BADM 244	Business Communications	3	BC/GE
BADM 284	Career Planning	1	BC
	Subtatal	16	
2007-2008 Spring		Year:	SO
ECON 202	Principles of Macroeconomics	3	BC/GE
ACCT 202	Principles of Accounting II	3	BC
CSC 130	Visual Basic Programming	3	M
MIS 325	Management Information Systems	3	BC
BADM 360	Organization & Management	3	BC
	General Elective	2	O
	Subtatal	17	
2008-2009 Fall		Year:	JR
CSC 273	Computer Math w/Excel/VB	3	M/GE**
BADM 370	Marketing	3	BC
BADM 310	Business Finance	3	BC
	MIS/CSC Elective	3	M*
	Humanities & Fine Arts	3	GE
BADM 350	Legal Environment of Business	3	BC
	Subtatal	18	

2008-2009 Spring		Year:	JR
	MIS/CSC Elective	3	M*
	Social Science	3	GE
MIS 335	Telecommunications & Networks	3	M
	General Elective	3	O
	Econ 301 or 302 or 304 or 441	3	BC
	Subtatal	15	
2009-2010 Fall		Year:	SR
MIS 332	Structured Systems Analysis & Design	3	M
BADM 457	Business Ethics	3	BC/GE
	Internship	3	O
	General Elective	3	O
	MIS/CSC Elective	3	M*
	Subtatal	15	
2009-2010 Spring		Year:	SR
MIS 484	Database Management Systems	3	M
BADM 482	Business Policy & Strategy	3	BC
	General Elective	3	O
	General Elective	3	O
	General Elective	3	O
	Subtatal	15	
	Grand Total	128	

** CSC 273, Computer Math, Satisfies MIS elective & "Math Above 102/104" GE requirement

* The 12-credits of MIS electives can be selected from any 4 of the following courses:

ACCT 360	Accounting Systems	3
CSC 140	Web Programming	3
CSC 273	Computer Mathematics with Excel & VBA	3
MIS 150	Computer Science I	3
MIS 210	Web Authoring	3
MIS 250	Computer Science II	3
MIS 371	Survey of Data Structures	3
MIS 384	Decision Support Systems	3
MIS 461	Programming Languages	3

Summary of Credits	
GE	56
BC	46
M	24
O***	20
Subtotal	146
Dbl BC/GE	15
Dbl M/GE	3
Total	128

*** Some courses can be applied to both the Business Core and to the Gen Ed requirements
Therefore, the "other" category must be enough to bring the total credits to 128

Table 5
Sample CNU Undergraduate Teaching Plan

Information Management and Information System					
Course No.	Course Name	Credit Points	Weekly Hours	Evaluation	Category
2006-2007 Fall					
2055001	Military Training	2	0	Exam	Required
3700006	Ideal, Moral, and Indrocution to Law	3	3	Exam	Required
3720001	Physical Education 1	1	2		Required
3730001	College English Band 1	4	4	Exam	Required
3050301	Advanced Mathematics (A-1)	6	6	Exam	Required
3050305	Linear Algebra	3	3	Exam	Required
3103075	C Language Programming	3	3	Exam	Required
3103001	An Introduction to Information Science	2	2		Elective
	Subtotal	24	23		
2006-2007 Spring					
3700007	China's Modern History	2	2	Exam	Required
3720002	Physical Education 2	1	1		Required
3730002	College English Band 2	4	4	Exam	Required
3050302	Advanced Mathematics (A-2)	6	6	Exam	Required
3065001	College Physics (A-1)	4	4	Exam	Required
2050013	College Chinese	2	2	Exam	Elective
3085074	An Introduction to Modern Bioscience	3	3	Exam	Elective
3090801	Foundation of Geosciences (1)	2	2	Exam	Elective
3103076	C Language Programming Practice	3	3	Exam	Required
3103059	Discrete Mathematics	3	0		Required
3103301	Introduction to Information Management	3	3		Required
3103303	Basis of Management	3	3	Exam	Required
	Subtotal	36	33		
2007-2008 Fall					
3103334	Principles of Economics	4	4	Exam	Elective
3700008	Marxist Philosophy Principle	3	3	Exam	Required
3720003	Physical Education 3	1	2		Required
3730003	College English Band 3	4	4	Exam	Required
3065002	College Physics (A-2)	4	4	Exam	Required
3065004	Fundamental Physical Experiment B	1	2	Exam	Required
3070150	General Chemistry	3	3	Exam	Elective
3090802	Foundation of Geosciences (2)	2	2	Exam	Elective
3103142	Data Structure	4	0		Required
3103143	Data Structure Lab	1	0		Required
3103146	Digital Logic Circuit	3	0		Required
3103147	Digital Logic Circuit Lab	1	0		Required
3050306	Probability & Statistics	3	3	Exam	Required
3103034	Numerical Analysis	2	2		Elective
3103343	Webpage Design	2	0		Elective
	Subtotal	38	29		

2007-2008 Spring					
3103344	Production Operation and Management	3	0		Elective
3700009	Introduction to Mao Zedong, Deng Xiaoping and Three Representative Important Ideas I	3	3	Eaxm	Requried
3720004	Physical Education 4	1	2		Requried
3730004	College English Band 4	4	4	Exam	Requried
3103135	Object-Oriented Programming (Java)	3	0		Requried
3103136	Object-Oriented Programming Lab (Java)	1	0		Requried
3103128	Computer Network	3	0		Requried
3103129	Computer Network Lab	1	0		Requried
3103130	Principle of Computer Composition	3	0		Requried
3103131	Principle of Computer Composition Lab	1	0		Requried
3103302	Operational Research of Management	4	4	Exam	Requried
3103028	Principles of Database	2	2		Requried
3103121	Program Design , Integrated Curriculum Design and Practice (Java)	2	0		Elective
	Subtotal	31	15		
2008-2009 Fall					
3103342	Accounting Princiles and Accounting Information System	4	0		Elective
3700010	Introduction to Mao Zedong, Deng Xiaoping and Three Representative Important Ideas II	3	3	Exam	Requried
3103033	Network Engineering	3	2		Elective
3103144	Fundamentala of Database Applications	2	0		Elective
3103149	Network Programming (Java)	3	0		Elective
3103305	Indroduction to E-Commerce	3	3		Elective
3103079	Operating System	3	3		Requried
3103025	VB Programming	2	2		Elective
3103056	An Introduction to Software Engineering	3	3		Elective
3103327	Modern Multi-media Making Technology	3	3		Elective
3103145	Database Applications System Design	2	0		Elective
3103324	Information Retrieval	3	3		Elective
	Subtotal	34	22		

2008-2009 Spring					
3103333	Analysis of Cases in Information Management Systems	3	3	Eaxm	Elective
3103337	MIS (Integrated Curriculum Design)	2	0		Required
3103312	Project Management	3	3		Elective
3103049	Web Programming	3	3		Elective
3103053	Network and Information Security	2	2		Elective
3103119	Operating System Analysis and Practice (UNIX)	2	0		Elective
3103139	Software Testing Technique	2	0		Elective
3103140	Software Testing Practice	2	0		Elective
3103313	Decision-making Support System	3	3		Elective
3103315	Logistic Management of E-business	3	3		Elective
3103316	Network Marketing	3	3		Elective
3103318	Management of Human Resource	3	3		Elective
3103335	Securities Investment Analysis	3	3	Eaxm	Elective
3103114	Network Design and Management Practice	3	2		Elective
3103120	Operationg System Analysis and Practice (Windows)	2	0		Elective
3103141	Software Engineering Design Practice	2	0		Elective
	Subtotal	41	28		
2009-2010 Fall					
3103338	Information System Analysis and Design (Integrated Curriculum Design)	2	0		Required
3100103	Major Internship	6	0		Required
3103310	Information System Analysis and Design	5	5		Elective
3103104	Higher Mathematics Research	2	0		Elective
3103105	Advanced Date Structure	2	0		Elective
3103106	Advanced Operating System	2	0		Elective
3103325	E-government	3	3		Elective
3103328	Information Economics	3	3		Elective
3103331	Intellectual Property and Information Law	3	3		Elective
3103336	Online Banking	3	0		Elective
	Subtotal	31	14		
2009-2010 Spring					
3100065	Graduation Design	12	0		Required
	Subtotal	12	0		
Other Courses					
3100101	Creative Credit	2	0		Elective
3103071	Electronic Process Internship	2	0		Required
3104072	Understanding Intership	1	0		Required
	Subtotal	5	0		
	Grand Total	252	164		

Table 6
CNU Information Management and Information Systems Curriculum

College:	College of Information Engineering, CNU										
Major:	Information Management and Information System										
Category		**Course No.**	**Course Name**	**Hour**	**Credit**	**Lec**	**Lab**	**Exp**	**Exam**	**Sem**	**CR**
Other required courses	R	2055001	Military Training	160	2			0		1	27
	R	3103337	MIS (Integrated Curriculum Design)	0	2			0		6	
	R	3103338	Information System Analysis and Design (Integrated Curriculum Design)	0	2			0		7	
	R	3100101	Creative Credit	0	2			0		1	
	R	3100103	Major Internship	0	6			0		7	
	R	3100065	Graduation Design	540	12			0		8	
	R	3103071	Electronic Process Internship	36	2			0		1	
	R	3104072	Understanding Intership	0	1			0		1	
General Education											34
Required	R	3700006	Ideal, Moral, and Indrocution to Law	54	3	3		0	Exam	1	34
	R	3700007	China's Modern History	36	2	2		0	Exam	2	
	R	3720001	Physical Education 1	36	1	2		0		1	
	R	3720002	Physical Education 2	36	1	2		0		2	
	R	3730001	College English Band 1	72	4	4		0	Exam	1	
	R	3730002	College English Band 2	72	4	4		0	Exam	2	
	R	3700008	Marxist Philosophy Principle	54	3	3	54	0	Exam	3	
	R	3700009	Introduction to Mao Zedong, Deng Xiaoping and Three Representative Important Ideas I	54	3	3		0	Exam	4	
	R	3720003	Physical Education 3	36	1	2		0		3	
	R	3720004	Physical Education 4	36	1	2		0		4	
	R	3730003	College English Band 3	72	4	4		0	Exam	3	
	R	3730004	College English Band 4	72	4	4		0	Exam	4	
	R	3700010	Introduction to Mao Zedong, Deng Xiaoping and Three Representative Important Ideas II	54	3	3		0	Exam	5	
Elective											12
Major Courses											92
Major Required	R	3103076	C Language Programming Practice	54	3	3	18	0	Pass	2	45
	R	3103135	Object-Oriented Programming (Java)	54	3			0		4	
	R	3103136	Object-Oriented Programming Lab (Java)	36	1			0		4	
	R	3103142	Data Structure	72	4			0		3	
	R	3103143	Data Structure Lab	36	1			0		3	
	R	3103059	Discrete Mathematics	54	3			0		2	
	R	3103079	Operating System	54	3	3		0		5	
	R	3103128	Computer Network	54	3			0		4	
	R	3103129	Computer Network Lab	18	1			0		4	
	R	3103130	Principle of Computer Composition	54	3			0		4	
	R	3103131	Principle of Computer Composition Lab	18	1			0		4	
	R	3103146	Digital Logic Circuit	54	3			0		3	
	R	3103147	Digital Logic Circuit Lab	18	1			0		3	
	R	3103301	Introduction to Information Management	54	3	3		0		2	
	R	3103302	Operational Research of Management	72	4	4		0	Exam	4	
	R	3103303	Basis of Management	54	3	3		0	Exam	2	
	R	3050306	Probability & Statistics	54	3	3		0	Exam	3	
	R	3103028	Principles of Database	36	2	2		0		4	

Major Elective										47
	E	3103333	Analysis of Cases in Information Management Systems	54	3	3	0	Exam	6	
	E	3103334	Principles of Economics	72	4	4	0	Exam	3	
	E	3103342	Accounting Princiles and Accounting Information System	72	4		0		5	
Required	E	3103344	Production Operation and Management	54	3		0		4	
Major	E	3103033	Network Engineering	54	3	2	0		5	28
Elective	E	3103144	Fundamentala of Database Applications	36	2		0		5	
	E	3103149	Network Programming (Java)	54	3		0		5	
	E	3103305	Indroduction to E-Commerce	54	3	3	0		5	
	E	3103310	Information System Analysis and Design	90	5	5	0		7	
	E	3103312	Project Management	54	3	3	0		6	
	E	3103324	Information Retrieval	54	3	3	0		5	
	E	3103025	VB Programming	36	2	2	0		5	
	E	3103034	Numerical Analysis	36	2	2	0		3	
	E	3103049	Web Programming	54	3	3	0		6	
	E	3103053	Network and Information Security	36	2	2	0		6	
	E	3103056	An Introduction to Software Engineering	54	3	3	0		5	
	E	3103104	Higher Mathematics Research	36	2		0		7	
	E	3103105	Advanced Date Structure	36	2		0		7	
	E	3103106	Advanced Operating System	36	2		0		7	
	E	3103119	Operating System Analysis and Practice (UNIX)	36	2		0		6	
	E	3103121	Program Design , Integrated Curriculum Design and Practice (Java)	36	2		0		4	
	E	3103139	Software Testing Technique	36	2		0		6	
	E	3103140	Software Testing Practice	36	2		0		6	
Major	E	3103313	Decision-making Support System	54	3	3	0		6	19
Elective	E	3103315	Logistic Management of E-business	54	3	3	0		6	
	E	3103316	Network Marketing	54	3	3	0		6	
	E	3103318	Management of Human Resource	54	3	3	0		6	
	E	3103325	E-government	54	3	3	0		7	
	E	3103327	Modern Multi-media Making Technology	54	3	3	0		5	
	E	3103328	Information Economics	54	3	3	0		7	
	E	3103331	Intellectual Property and Information Law	54	3	3	0		7	
	E	3103335	Securities Investment Analysis	54	3	3	0	Exam	6	
	E	3103336	Online Banking	54	3		0		7	
	E	3103343	Webpage Design	36	2		0		3	
	E	3103114	Network Design and Management Practice	54	3	2	36		6	
	E	3103120	Operationg System Analysis and Practice (Windows)	36	2		0		6	
	E	3103141	Software Engineering Design Practice	36	2		0		6	
	E	3103145	Database Applications System Design	36	2		0		5	

			Fundamental Courses for Engineering Majors								
											31
	R	3050301	Advanced Mathematics (A-1)	108	6	6		0	Exam	1	
	R	3050302	Advanced Mathematics (A-2)	108	6	6		0	Exam	2	
Fundamental	R	3050305	Linear Algebra	54	3	3		0	Exam	1	
Courses	R	3065001	College Physics (A-1)	72	4	4		0	Exam	2	27
Required	R	3103075	C Language Programming	54	3	3	18	0	Exam	1	
	R	3065002	College Physics (A-2)	72	4	4		0	Exam	3	
	R	3065004	Fundamental Physical Experiment B	18	1	2		18	Exam	3	
Fundamental Courses Elective											4
	E	2050013	College Chinese	36	2	2		0	Exam	2	
	E	3085074	An Introduction to Modern Bioscience	54	3	3		0	Exam	2	
Elective	E	3090801	Foundation of Geosciences (1)	36	2	2		0	Exam	2	2
	E	3070150	General Chemistry	54	3	3		0	Exam	3	
	E	3090802	Foundation of Geosciences (2)	36	2	2		0	Exam	3	
Required Elective	E	3103001	An Introduction to Information Science	36	2	2		18		1	2
			Grand Total		252						

R = Required
E = Elective
Lec = Lecture
Exp = Experiment
Lab = Lab (In-class)
Sem = Semester
CR = Credit Requirement

Table 7
Management Information Systems Curriculum

Management Information Systems		
CSC 130	Visual Basic Programming	3
MIS 335	Telecommunications and Networks for Business	3
MIS 332	Structured Systems Analysis and Design	3
MIS 484	Database Management Systems	3
12-credits of MIS electives can be selected from any 4 of the following courses:		
ACCT 360	Accounting Systems	3
CSC 140	Web Programming	3
CSC 273	Computer Mathematics with Excel & VBA	3
MIS 150	Computer Science I	3
MIS 210	Web Authoring	3
MIS 250	Computer Science II	3
MIS 371	Survey of Data Structures	3
MIS 384	Decision Support Systems	3
MIS 461	Programming Languages	3

Indirect cost rate variation determinants in university research, an empirical investigation

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The U.S. government funds approximately $15 billion in primary research each year, conducted mainly at colleges and universities. Since universities are charged with the dual purpose of conducting research and educating students, many facilities and functions support both purposes. In recognition of the need to reimburse for the full cost of research, U.S. agencies have developed a complex set of guidelines for developing individual reimbursement rates designed to capture the differences in cost and reimburse universities accordingly. Currently, universities that do research have no choice except to participate in the very costly process of individual rate setting. However, there has long been doubt whether the rate-setting process resulted in a rate that adequately reflected the actual cost of research. This study empirically examines individual characteristics of 163 individual universities and the relationship between these characteristics and the applicable rate. These results suggest that the process of determining the rates may be failing to capture the actual cost of providing these services. Since the entire cumbersome, costly process is justified on the basis that these costs of inputs are different for different institutions and thus should be negotiated individually, we must consider the possibility that the variability in rates is not actually due to difference to cost but rather can be explained by some other element.

Keywords: F&A Rate, facilities and administrative rate, university overhead rate, research reimbursement

Introduction

The U.S. government funds approximately $15 billion in primary research each year. Unlike Europe where most primary research is performed at independent research laboratories, primary research in the United States is conducted mainly at colleges and universities. Since universities are charged with the dual purpose of conducting research and educating students, many facilities and functions support both purposes. As early as 1947, the Office of Naval Research recognized a responsibility to reimburse universities for overhead expenses that supported both research and other university activities. Primary research funding is now provided by agencies within the Department of Defense and the Department of Health and Human Services. These government agencies, known as cognizant agencies, recognize that research projects benefit from facilities and administration that also support education. Under guidelines from the Office of Management and Budget (OMB Circular A-21), a percentage of each grant awarded goes to cover general facilities and administrative (F&A) costs incurred by the university. Some examples of these costs are: depreciation; maintenance; library costs; interest on debt; general administrative expenses; departmental administrative expenses; sponsored projects administration; and student administration expenses.

Thus, each federal research grant allows for reimbursement of the direct costs that can be specifically identified with the approved research project and the indirect cost of shared facilities and administration. Every university receiving federal grants must individually negotiate to determine an overhead reimbursement percentage (its F&A rate) every three years.

Rates are set based on what the university shows to be actual indirect cost divided by direct costs of research activities. Determining the total of indirect costs is in itself a very time consuming and costly process (Brown & Rosenzweig, 1993). The rate setting process involves the submission of an F&A rate proposal, an audit of that proposal by the cognizant agency, and finalization (negotiation) of the rate for the institution. Currently these rates commonly range from 29.8% to 69% of the direct cost of research.

Accumulating, compiling, and recording the cost, then negotiating the rate is time consuming and disruptive for university financial personnel and the process is often supplemented with the use of highly paid consultants to help obtain the highest possible rate. Although the costs associated with negotiating the rate are a fraction of all grant compliance spending, the costs are high and each dollar and hour spent means that the university has fewer resources to support actual research or instruction.

The term indirect cost was changed to facilities and administrative costs in 1996 under OMB Circular A-21, but for all practical purposes the meanings are identical and the two terms are used interchangeably. Universities must identify these costs and allocate them to cost categories based on the function (i.e., depreciation, library costs, and interest on debt). These costs are also split into two areas: facilities cost (debt interest and depreciation for buildings and equipment, investments in equipment and capital improvements, operation and maintenance expenses, and library expenses) and administrative cost (general administration, departmental administration, sponsored projects administration, and student administration and services).

Many university administrators and funding agency personnel support the current practice of setting individual rates because they recognize that actual costs vary and that differences in accounting policies across universities affect the ability to accurately trace costs to different functions. However, this process of setting individual rates consumes a high level of university resources and is especially onerous for small universities. Fredrick Rogers, Senior Vice-president Emeritus of Cornell and an advocate for simpler rates, said that efforts toward the increasingly detailed calculation of overhead cost had become counter-productive. In his view, a rate setting approach that reduced record-keeping, negotiating costs and audits could save universities significant amounts of money (Cordes, 1995).

Prior Research

Over a decade ago two Stanford University researchers (Massy & Olson, 1994) identified four sources of variation in overhead rates: 1) differences in university structure, including a university's mix of research and teaching and its institutional incentives to recognize and recover indirect cost; 2) differences in the price of elements supporting research activities, such as building space and power; 3) differences in university policy, primarily accounting policies that determine the treatment of particular costs as direct or indirect; and 4) differences in treatment by the various cognizant agencies due to the negotiation process. Their study focused on two of the four broad sources identified: the cost of utilities, building, and interest and university accounting policy differences. Using detailed data obtained from seven major research universities, they simulated a standardization of costs by eliminating the cost effects of these

elements. Results show that, far from explaining differences in rates by decreasing rate variation, the standardization of these elements produced an increase in rate variation. The results suggest that the source of variation in F&A is neither due to differences in the cost of inputs nor differences in accounting treatment. Since the elements in the Massy and Olson (1994) study were designed to capture variability in rates due to actual costs differences or accounting treatment, this research seems to suggest that perhaps university structure, including the mix of research to instruction, difference in treatment by governmental agencies negotiating the rate or perhaps institutional incentives to recover cost are influencing the rate level.

Another analysis of the rates was reported by the Council on Governmental Relations (COGR) in 1998. COGR conducted two studies a decade apart (1987 and 1997) on the same (selected /non-random) fourteen research-intensive universities attempting to explain the reasons for variation in F&A rates. Because a 26% maximum for the administrative portion of the rate was set in 1991, they focused on the facilities component of the rate. The studies identify a number of specific influencing elements (average interest rate, energy costs, age of plant, outstanding debt, investment in plant, investment in equipment, and research square footage). This study reported that rate variations were likely to be attributed to actual cost differences from university to university, but it made no attempt to determine statistical significance or measure what portion of the variability was attributable to actual costs. The researchers went on to recognize that variation might be due to differences in a university's cost recovery approach and the government agency's rate negotiation practice (Council for Governmental Relations, 1998).

The current study seeks to expand the work of Massy and Olson (1994). The four elements they identified are differences in university structure (STRUCTURE), differences in the price of elements supporting research activities (COST), differences in university policy (POLICY), and differences in treatment by the various cognizant agencies. Their study concentrated on differences in the price of elements supporting research activities and differences in university policy using detailed information provided by seven participating major research universities. The current study uses a much larger data set and examines not only differences in university policy (POLICY), and differences in the price of elements supporting research activities (COST), but also differences in university structure (STRUCTURE).The forth item identified by Massy and Olson (1994), difference in treatment by cognizant agency, was not investigated because the majority of universities share the same cognizant agency, the Department of Health and Human Services.

The degree to which universities emphasize research relevant to instruction is one of the elements of university structure (STRUCTURE). Because more research intensive universities devote a different proportion of resources to research, it is reasonable to expect that the mix of research and instruction may have an impact on the F&A cost recovery rate. However, the relationship may be positive or negative. A greater emphasis on research would likely lead to higher F&A costs which would tend to increase the F&A cost recovery rate; however, it would also lead to a higher volume of research projects over which to spread its investment which would tend to decrease the F&A cost recovery rate.

Differences in institutional policy (POLICY) regarding cost recovery should be evident between private and public institutions. Because private universities obtain a much smaller percentage of their support from public sources than to public universities, private universities may have an institutional incentive to be more aggressive in pursuing higher F&A cost recovery rates. Public universities often have less incentive to identify and recover indirect costs because of their relations to state funding sources that require certain recovered costs be forfeited.

Private universities have different sources of financing and benefit more from cost recovery. (Massy & Olson, 1994; Rosenzweig, 1998).

The price of physical inputs (COST) is likely dependent on the local cost of general labor, construction, transportation, energy and other items that are impacted by the regional economy and climate. For these costs, one would expect variation by geographic region, the cost of living in the region around the university, and/or the degree of urbanization of the campus. All three of these variables were used in an attempt to capture variation in element prices.

The F&A rate agreements of individual universities are available under the 1966 Freedom of Information Act, but they must be requested individually for each institution. This process is too costly and time consuming to be appropriate for data collection purposes. Information on rates for institutions is not available from either the Department of Defense or the Department of Health and Human Services in any other form. Individual university sites on the World Wide Web were chosen as the best source of information on the negotiated F&A reimbursement rates. A search of university web sites yielded 163 U.S. colleges and universities with published F&A rate agreement forms from which the rate information was extracted (RATE).

See Table 1: Sample Characteristics.

The Carnegie Foundation for the Advancement of Teaching classifies universities and colleges in the United States as Doctoral/Research Extensive (Doc I, meaning the university awards doctoral degrees in a wide range of disciplines), Doctoral/Research Intensive (Doc II, meaning the university awards doctoral degrees in a narrow range of disciplines), or Master's colleges and universities. Carnegie Foundation makes a distinction between Master I, meaning the university awards master's degrees in a wide range of disciplines and Master II meaning the university awards a narrow range of disciplines, but due to the fact that only one of the sample universities fell into the Master II classification, they were combined. Since these classifications and the types of degrees offered are analogous to the research emphasis of the university, this classification categorization was used to rank the universities based on the structure (STRUCTURE) of the university and the mix of instruction to research. Therefore STRUCTURE was modeled using a discrete variable with three values.

In addition, The Carnegie Foundation reports whether the institution is public, private not-for-profit, or private for-profit. All the universities for which F&A rate information was available for this study were either public or private not-for-profit institutions. This classification provides a surrogate measure of the institution's incentive to recover the full cost of research and reflects university rate negotiation policy (POLICY). Policy was modeled as a discrete variable with two values.

Three different types of measures were chosen as representative of the cost of inputs; geographic Region (COST 1), the Consumer Price Index for the US Postal Zip Code in which the university is located (COST 2), and the degree of urbanization (COST 3). First, the universities were grouped into geographic regions (COST 1) using the regions designated by the Department of Energy. The regions along with their codes are: Pacific (1) *Alaska, California, Hawaii, Oregon, Washington;* Mountain (2) *Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming;* West North Central (3) *Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota;* West South Central (4) *Arkansas, Louisiana, Oklahoma, Texas;* East North Central (5) *Illinois, Indiana, Michigan, Ohio, Wisconsin;* East South Central (6)

Alabama, Kentucky, Mississippi, Tennessee; New England (7) *Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont;* Middle Atlantic (8) *New Jersey, New York, Pennsylvania;* South Atlantic (9) *Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia.* Thus COST 1 is a discrete variable with nine possible values. The cost of living or doing business in the area of each university (COST 2) was measured using the region's Consumer Price Index (CPI) as reported in Sperling's Best Places (http://www.bestplaces.net/zip-code). Sperling's lists characteristics for each Postal Zip Code in the United States. Sperling's data is obtained from U.S. Census Bureau American Community Survey Current Population Survey. This source provided a concise compendium searchable by zip code. The Zip Code of each University is listed on the Rate Agreement. Thus COST 2 is a continuous variable that can assume values from 65.4 for Jackson, Mississippi, to 330.1 for San Francisco, California. Third, the degree of urbanization (COST 3) was based on three measures. The first (COST 3-A) was the classification of the degree of urbanization of the area by Sperling's Best Places (http://www.bestplaces.net/zip-code). The classifications range from Rural (least dense) through Small Town, Suburban, City Neighborhood, and Inner City (most dense). Thus, the variable COST 3-A is discrete and can take on 5 distinct values. Absolute population (COST 3-B) and population density (COST 3-C) of the county or metropolitan area were also used as measures of urbanization. Both the population density per square mile and the absolute population of the metropolitan or county areas represented a continuous variable that for density ranged from 8 people per square mile for Laramie, Wyoming to 25,750 people per square mile for Manhattan and for absolute population ranged from 10,062 for Hanover, New Hampshire, to 9,550,626 for Los Angeles, California.

A total of seven independent variables were examined. The university's Carnegie classification is used to measure its structure (STRUCTURE). Whether the university is public or private is used as a proxy for its rate negotiation policy (POLICY). The effect of differences in the price of the indirect cost inputs were measured using five variables: geographic region (COST 1), cost of living (COST 2), degree of urbanization (COST 3-A), population of the area (COST 3-B), and population density of the surrounding area (COST 3-C).

Analysis

All analysis was performed using SPSS version 14.0. A linear regression model was used to tests the significance of the impact of the seven independent variables – representing a university's structure, rate negotiation policy, and its cost of inputs – on the level of a university's F&A (overhead) rate. Of the seven predictive variables included in this study, three of the predictors are continuous measures, two are ordinal measures, and two are nominal measures. The population density of the surrounding area, the population of the area, and the cost of living index are continuous measures. The urbaneness of the location and the Carnegie classification are ordinal measures. The region of the country and whether the school is public or private are nominal measures.

Results

None of the three regression coefficients for the continuous variables – population density, area population and cost of living index – are significantly different from zero at the 0.05 level. This is also true of urbaneness, the Carnegie level of the university, and the region of

the country. The only significant variable is the public or private status of the university. The average F&A rates for both categories of the significant variable appear in Table 2. The model has an R^2 value of 0.321. After this has been adjusted to account for possible spurious relationships between the independent variables an adjusted R^2 value of 0.291 is the result.

See Table:2 Overview of Rate Averages.

Surprising insignificant variables can sometimes be an indicator of multicollinearity which can also cause a model to be unstable from one data set to another. One measure of multicollinearity is the variance inflation factor. The variance inflation factor of an independent variable is found by regressing it against each of the other independent variables. The smallest possible variance inflation factor is 1, which would be associated with an R^2 of zero. Variance inflation factors in excess of 10 indicate a serious multicollinearity issue (Hair et al, 1998). Condition indices are another measure of multicollinearity. Condition indices are functions of the eigenvalues of the data's covariance matrix and are calculated automatically by SPSS when multicollinearity diagnostics are requested. A condition index greater than 30 indicates that a multicollinearity issue may exist (Hair et al, 1998). The largest variance inflation factor resulting from our analysis is 2.2 and the largest condition index is 18.8.

A second analysis, using only the public-private classification (the single significant categorical variables) as a predictor results in a bias adjusted R^2 of 0.245. Again the effect is significant with higher overhead rates associated with private universities than public which was as expected.

Conclusions

The effect of being a public university versus a private university was found to be significant with private universities having higher average rates. It is possible but unclear whether this difference might be attributable to differences in university incentives to recover costs. Neither region of the country, population density, area population, cost of living index, urbaneness, nor the Carnegie level of the university was significant as a predictor of differences in the overhead rate. The fact that these measures should capture much of the variability in the cost of providing research support makes it puzzling that none were significant. That the cost of building space and energy were not significant is particularly surprising, as building space and energy were specifically identified by Massy and Olson (1984) as elements of costs that should influence the level of F&A rates.

These results suggest that the process of determining the F&A rates may be failing to capture the actual cost of providing these services. Since the entire cumbersome, costly process is justified on the basis that these costs of inputs are different for different institutions and thus should be negotiated individually, we must consider the possibility that the variability in rates is not actually due to difference to cost but rather can be explained by some other element. Is it possible that universities enjoy a high F&A rate not because their costs are high, but because they are better at negotiating a high rate?

There is an obvious need for additional research in the area. All but one of the studies used small samples limited only to research intensive universities with no quantitative analysis, but none of them support the idea that rates reflect differences in input cost. Ideally, actual cost differences should be the source for F&A rate variation; however, it is the determination of

actual cost that consumes inordinate amounts of university resources. This situation justifies another approach that would move away from an actual cost basis, and yet produce a satisfactory proxy for the current F&A rate. Another weakness of the current process is that it offers no incentive to minimize actual costs; quite to the contrary, universities that can document very high costs are awarded higher rates. Given a choice of enduring the arduous and expensive process of negotiating individual rates every three years or accepting a reasonable set rate, many institutions would save money by accepting the set rate even if it were somewhat lower. In addition, the institution would have an incentive to lower the cost of overhead to maximize return at a given rate.

Since the purported purpose of individually negotiating the rates is to reimburse universities for their actual costs, these other elements including the mix of research to instruction, difference in treatment by governmental agencies negotiating the rate or perhaps institutional incentives to recover cost should not be a legitimate basis for rate variation.

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Table 1: Sample Characteristics *N* = 163							
Categorical Variables							
Carnegie Classification		Public or Private University		Campus Environment		Region	
Doctoral/Research Universities—Extensive	87	Public	128	Rural or Small Town	29	Pacific	26
Doctoral/Research Universities—Intensive	31	Private, not-for-profit	35	Suburban	57	Mountain	14
Master's Colleges and Universities	45			City Neighborhood	43	East North Central	15
				Inner City	34	West South Central	13
						East North Central	23
						East South Central	13
						New England	15
						Middle Atlantic	12
						South Atlantic	32

Ranges for Continuous Variables		
Cost of Living	Population of County or Metropolitan Area	Population Density of County or Metropolitan Area
65.4% to 330.1% of National Average	10,062 to 9,550,626 Residents	8 to 24,750 Residents per Square Mile

Table:2 Overview of Rate Averages	
Average of All Schools	0.482
Average for Private Universities	0.544
Average for Public Universities	0.465
Northern Kentucky was the lowest at	0.298
City University of New York Highest at	0.690

Applying multilevel confirmatory factor analysis techniques to perceived homework quality

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Abstract

This research study aimed to propose the multilevel confirmatory factor analysis. The study also focused on the multilevel confirmatory factor analysis of students' perceived homework quality via 4 indicators: 1) homework content, 2) homework explanation, 3) homework check, and 4) homework discussion. The subjects were 1427 students from five campuses of Rajabhat University, drawn from 40 classes. The proposed multilevel confirmatory factory model of homework quality fit well with the empirical data set (χ^2=2.084, df=2, χ^2/df=1.042, p-value=0.3527, CFI=1.000, TLI=1.000, RMSEA=0.005, $SRMR_W$=0.006, $SRMR_B$=0.018). The coefficient of determination of the student-level effects was 0.37-0.53 and the coefficient of determination of the classroom-level effects was 0.56 - 0.90.

Keywords: multilevel confirmatory factor analysis (MCFA), homework

Introduction

The attitude of students at all levels towards their homework assignments has been one of the most popular topics of discussion among teachers, parents, and educators (Simplicio, 2005; Marzano, 2007). The syntheses of research conducted by Cooper (1989), and Cooper, Robinson, & Patall (2006) showed that doing homework helped increase students' learning, and enhance students' self-discipline in managing the completion of their homework before the due date. However, the research studies on homework during the period of 1987 to 2006, regardless of their types, had design flaws. The researchers used homework as a learning and teaching tool, and only assigned the experimental groups homework, while the control groups were not given any homework assignments (Kohn, 2006; Cooper, Robinson, & Patall, 2006). Homework is complex because there are different groups of people, e.g. teachers, students, and parents, involved. Also, it serves a variety of purposes, e.g. achievement, improvement, self-regulation; engages tasks of different quality levels e.g. routine tasks versus complex tasks, and affects lesson organization, e.g. discussing, checking, and grading homework. Therefore, research studies on homework should incorporate new methodologies, such as multilevel modeling so that homework-related research studies will be put on the right track (Trautwein & Koller, 2003).

According to Trautwein et al. (2006a), researchers have provided some guidance of how to conduct research studies on homework by using the Multilevel Homework Model, which combines elements of expectancy-value theory (Eccles & Wigfield, 2002; Wigfield & Eccles,2000), research on learning and instruction (Weinert & Helmke, 1995), and self-determination theory (Deci & Ryan,

2002). Stable personal characteristics, namely basic cognitive abilities and conscientiousness, (Costa & McCrae, 1992) are also included. In many studies, researchers used homework as a basic example of problems between teachers and students that affected students' achievement in their studies. Therefore, it is important for all studies to relate homework to students' success in order to look at its effects at the classroom-level and the student-level (Trautwein et al., 2002; Trautwein & Koller, 2003; Trautwein et al., 2006a; Trautwein et al., 2006b; Trautwein & Ludtke, 2007; Trautwein, 2007; Trautwein & Ludtke 2009).

The multilevel analysis can solve the technical problems of the conventional method in the areas of aggregation bias, misestimated standard error and heterogeneity of regression, but it does not give importance to the causal structural relationship between variables (Raudenbush & Bryk, 2002; Farmer, 2000). The Structural Equation Model (SEM), on the other hand, was created to show the relationship between latent variables, and between latent variables and observed variables (Diamantopoulos & Siguaw, 2000). However, its limitation lies in its lack of focus on the natural structure of hierarchical data (Muthén, 1994). The multilevel analysis and Structural Equation Model have been developed into the Multilevel Structural Equation Model that can analyze the relationship between hierarchical latent variables. This technique is then suitable for the analysis of homework-related variables that are multilevel and complex. This can solve the weaknesses of the traditional techniques.

In this research study, the researchers, then, proposed a Multilevel Confirmatory Factor Analysis Model of students' perceived homework quality in the business statistics course.

1. Methodology

1.1 Sample

The sample group comprised undergraduate students in the business statistics course from the faculty of Business Management, Rajabhat University. The Simple Random Sampling technique was used to select the sample group from the population. five out of nine Rajabhat University's central region campuses were chosen. They included 40 classes with the average of homework effort scores of 35.68. There were more than 18 students enrolling in each class. The total number of the students who participated in the study was 1427. This corresponded with the rule requiring that the number of the students in the sample group be larger than the number of the studied variables (Muthén, 1989) and the number of groups recommended was about 20 to 100 (Hox & Mass, 2001; Hox & Kreft, 1994; Hox, 1993).

1.2 Data collection

The researcher contacted the instructors of the statistics course at each campus and collected the data by distributing a questionnaire to the students to complete. The time allowed to answer the questions on the questionnaire was limited to 20 minutes.

1.3 Instrument

The instrument that was used in this study was a 5-point Likert Scale questionnaire. It tested students' homework quality perceptions in the statistics course There were 4 observed variables incorporated in the questionnaire: 1) homework content, 2) homework explanation, 3) homework

discussion, and 4) homework feedback. Nineteen questions were created and modified based on the work of Trautwein, Ludtke, Schnyder, et al. (2006). The coefficient of determination of the student-level effects was homework content(R2=0.53), Homework explanation (R2=0.53),homework check(R2=0.37) and homework discussion(R2=0.44).The coefficient of determination of the classroom-level effects was homework content
(R2=0.79), homework explanation(R2=0.85), homework check(R2=0.56) and homework discussion(R2=0.90).

1.3 Statistical analyses: Analyzing multilevel confirmatory factor analysis procedures

Multilevel confirmatory factor analysis (MCFA), a multilevel SEM technique, was originally devised to test the factor structure of responses to a measurement instrument used in a study by means of which participants can be categorized into different groups (e.g., Hox, 1998; Zimprich, Perren, & Hornung, 2005; Sun & willson, 2008). Multilevel confirmatory factor analysis model may be described as combining one separate factor analysis model which accounts for the structure of observations on individuals within groups, and another factor analysis model which accounts for the structure of observed group means. Multilevel model thus implies a covariance structure model that is formulated in terms of a conventional factor analysis model on both ‘‘between-group’’ and ‘‘within-group’’ levels. (Muthén 1989, 1994) MCFA should involve five steps: (a) conventional confirmatory factor analysis (CFA), (b) intraclass correlation calculation, (c) within-group factor structure (d) between-group factor structure, and (e) MCFA. (Muthén, 1994)

Muthén (1994 cited in Dyer G. N. et al., 2005) developed the MCFA procedure. Figure 1 illustrates two – level confirmatory model with three observed indicators ($y_{1W} - y_{3W}$) depicted by squares. These indicators are the observed respondent ratings for the three items in a scale. The lower half of figure 1, labeled “within”, is consistent with a traditional confirmatory factor analysis on disaggregate data. As shown in this figure, the three observed variables load onto a single latent factor (η_W) at the “within” level. There are also three random errors (ε_{1W} - ε_{3W}) associated with each item at this level. The upper half of figure 1, labeled “between”, shows three indicators represented by the circled y_{1B} - y_{3B}. These are not observed/raw data, but rather represent the group means for each observed indicator ($y_{1W} - y_{3W}$). These group means load onto the aggregate latent variable (η_B) and are associated with their respective random error terms (ε_{1B} - ε_{1B}). The full model connects the disaggregate and corresponding aggregate indicators. Thus, the observed values of the original indicators ($y_{1W} - y_{3W}$) are considered to be a function of both the within and between-level latent constructs (η_W and η_B, respectively). The two – level confirmatory model consists of a simultaneous analysis of both of the within and between-group covariance matrices.

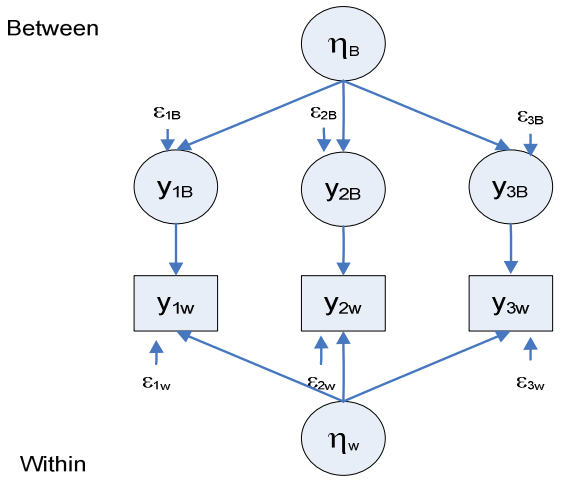

Figure 1 Multilevel confirmatory factor analysis model

In figure 1, the between and within components are explained by a single latent factor, however, this need not be the case. For example, one could test a model that proposes a single factor at the aggregate level and two factors at the disaggregate level, or many other similar non-isomorphic structures. If the hypothesized factor structure proposes more than one factor at a given level, the model may also include covariances among those same-level factors (by definition in this type of model, no covariances are allowed among factors at different levels). Similarly, the model may suggest that some indicators are valid at one level only, indicating a fuzzy composition model. Furthermore, the model may show some important covariates (e.g., age, pretest) that might be included in the model, relate to the focal latent construct at only one level. Estimation of these models yields both indicators of model fit, and parameter estimates of the factor loadings, factor variances, and uniquenesses (residuals). Thus, although our illustration presents only a very simple case, the MCFA technique in general promises some flexibility in the type of model that can be specified and tested. An advantage of the MCFA is that the individual- and class-level factor structures are calculated in one step by separating the total covariance into two parts - one between groups and one within groups (i.e. individuals; e.g. Mathisen et al., 2006; McDonald,1993; Muthén, 1991).

Six indices were used to assess the measurement model's fit to the data with the MCFA. These indices included the χ^2 index, the goodness-of-fit index (GFI), the nonnormed fit index (NNFI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean residual (SRMR). The MCFA models were tested with Muthén's maximum likelihood (MUML), which includes robust standard errors and adjustment to the χ^2 test statistic due to unbalanced group sizes. MUML procedure leads to correct model inference asymptotically when level-2 sample size goes to infinity and the coefficient of variation of the level-1 sample sizes goes to zero (Yuan H. K. & Hayashi K., 2005). The six above-mentioned fit indices were chosen for this study because no single fit index is considered to be the definitive marker of a model with "good" fit; each index serves a different purpose and should be interpreted in combination with the other indices. The χ^2 index is an absolute index that tests for lack of fit resulting from overidentifying restrictions placed on a model. A nonsignificant p value (e.g., $p > 0.05$) is desired, but the χ^2 index is usually inflated by the number of restrictions imposed on a

model and sample size. Values of 1 for the GFI and the NNFI indicate perfect model fit; however, some researchers have suggested cutoff values greater than 0.95 to indicate good model fit. The following fit index cutoff values suggested by Hu and Bentler (1999) were used for determining goodness of fit: CFI > 0.95, RMSEA < 0.06, and SRMR < 0.08.

1.5 Missing values

We analyzed using a special feature of Mplus, has several options for the estimation of models with missing data. Mplus provides maximum likelihood estimation under MCAR (missing completely at random) and MAR (missing at random; Little & Rubin, 2002) for continuous, censored, binary, ordered categorical (ordinal), unordered categorical (nominal), counts, or combinations of these variable types. (Muthén & Muthén, 2007)

2. Results

2.1 Conventional confirmatory factor analysis: Step 1

An a priori one-factor model with paths from the latent construct to all four homework quality items was tested by using the total sample matrix. Model fit indices are χ^2/df=1.06,p<0.01, CFI=1.000, TLI=1.000, RMSEA=0.007, and SRMR=0.024. The result of the confirmatory factor analysis's homework quality (see in Table 1) showed that the multilevel confirmatory factor homework effort model had structural validity, or fit the empirical data but was not extremely, although the values of the CFI, the RMSEA, and the SRMR were in range suggestion adequate fit because this model ignores the nested data structure.

Table 1 Model fit for priori single -and multilevel models

Model	χ^2(df)		CFI		TLI		RMSEA		SRMR	
CFA model	2.133(2)		1.000		1.000		0.007		0.024	
Within model	1.438(1)		1.000		0.999		0.018		0.010	
Between mode	0.171(1)		1.000		1.000		0.000		0.005	
MCFA model	2.084(2)		1.000		1.000		0.005		B:0.006 W:0.01	
variable	Within groups : W				Between groups : B				intercept	ICC
	B	SE	z	R^2	*B*	SE	z	R^2		
content	0.725	0.027	26.489	0.526	0.886	0.050	17.731	0.786	3.86	0.117
explanation	0.727	0.023	31.226	0.528	0.922	0.051	17.978	0.850	3.88	0.129
check	0.612	0.026	23.965	0.374	0.750	0.100	7.509	0.563	3.53	0.091
discussion	0.665	0.029	23.028	0.442	0.949	0.065	14.522	0.900	3.48	0.052

Note. Average cluster size (c) = 35.68, |Z| > 2.58; p < .01, χ^2/ df=1.042 ,p-value=0.3527
All chi-square values are statistically significant at p<0.01. df=degrees of freedom, CFI=comparative fit index, RMSEA=rootmean square error of approximation, SRMR=standardized root mean square residual. W=within-group portion of the model.B=between-group portion of the model.

2.2 Intraclass correlation : Step 2

The analysis of the elements of Multilevel Confirmatory Factor Analysis requires two-level variance. Intraclass correlation (ICC) is used to test whether the variables at the student level show variance only within groups, or also between groups or at the classroom level. If the ICC is more than 0.05, it means there are high correlations among variables, suitable to be tested by means of Multilevel Factor Analysis. However, if the ICC is less than 0.05, this means there is no variance at the classroom level. It is, therefore, not necessary to evaluate the data by using Multilevel Factor Analysis. Snijders and Bosker (1999) suggested that the ICC value should be more than 0.05, and based on Table 1, the ICC value of each observed variable ranged between 0.052 and 0.129. This showed that it was appropriate to use the Multilevel Factor Analysis with this set of data.

2.3 Within-group factor structure and between-group factor structure: Step 3-4

A student-level CFA model was tested by using the covariance matrix (SPW) based on individual-level scored. Model fit indices are χ^2/df=1.438,p<0.01,CFI=1.000, TLI=0.999,RMSEA=0.018 and SRMR=0.010(see in Table 1). A classroom-level CFA model was tested by using the between-group population matrix. Model fit indices are χ^2/df=0.0171 , p<0.01 ,CFI=1.000 ,TLI=1.000 ,RMSEA=0.000 and SRMR=0.005 (see in Table 1).
A classroom-level CFA analysis's homework quality fit the empirical data well at the between – group factor structure, and adequate, but slightly worse fit at a student-level CFA model as indicated by the SRMR of 0.005.

2.4 Multilevel confirmatory factor analysis's homework quality result: Step 5

The result of the multilevel confirmatory factor analysis's homework quality showed that the multilevel confirmatory factor homework quality model had structural validity. Model fit indices are χ^2/df=1.042, p<0.01, CFI=1.000, TLI=1.000, RMSEA=0.005, $SRMR_B$=0.006 and $SRMR_W$=0.018 (see in Table1). The multilevel confirmatory factor analysis's homework quality fit the empirical data well at the between level, and adequate, but slightly worse fit at student level as indicated by the SRMR of 0.006.

The intercepts or the average group mean were between 3.48 to 3.88. This showed that at the classroom level, intercepts of student perceptions of homework quality as shown by each variable ranged from medium to high levels. The variable "explanation" gained the highest intercepts of 3.88, while "discussion" obtained the least intercepts value of 3.48. Parameter estimates from this model included factor loadings at both the within and between level, as can be seen in Table 1. The items load strongly onto the single factor at the between level, ranging from 0.75 (check) to 0.95 (discussion). The factor loadings of the items at the within level, ranging from 0.61 (check) to 0.73 (explanation), are not as strong as the between factor loadings (see Figure 2).

Regarding the variance of students' homework quality perceptions, which was considered the latent variable in this study, the Coefficient of Determination (R^2) at the student level was 0.612-0.727 and at classroom level was 0.750-0.949 (see table 1). This showed that the four observed variables could explain the covariance of homework quality at the student level at the percentage of 61.2-72.7 and at classroom level at the percentage of 75.0-94.9. The Coefficient of Determination (R^2) value implied that homework quality could explain the variance at the classroom level better than that at the student level.

To conclude, the multilevel confirmatory factor homework quality Model that included four observed variables, which were homework content, homework explanation, homework discussion, and homework feedback possessed structural validity at both the student and the classroom levels.

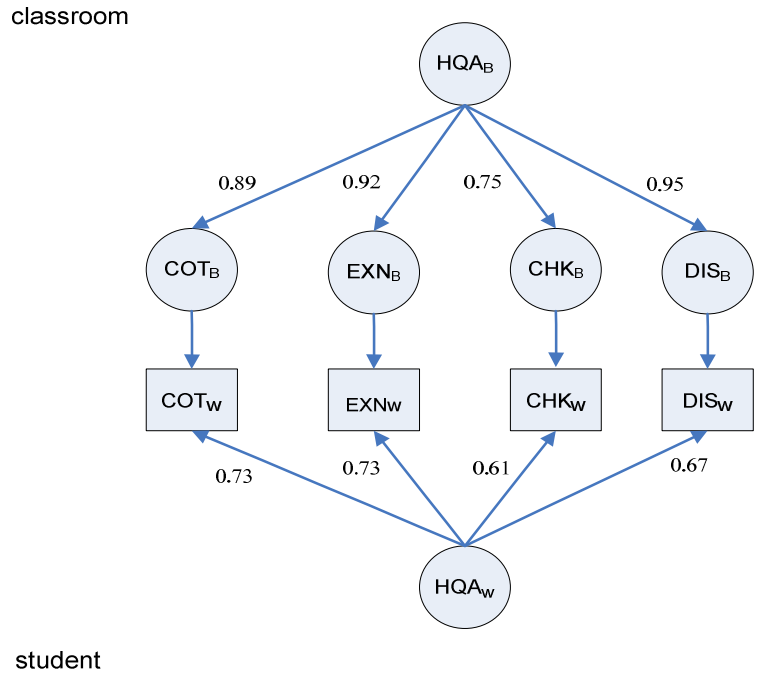

Figure 2 Multilevel confirmatory factor homework quality model

3. Discussion

This research study was to develop and validate the multilevel homework quality model through 4 indicators. The research study revealed that students' homework quality perceptions in the business statistics course showed variance at both the student and the classroom levels. The data appropriate to be analyzed by Multilevel Confirmatory Factor Analysis. This corresponded with students' homework quality perceptions studies that also illustrated variance of homework quality perceptions at both levels (Trauwein et al., 2006; Luedtke et al., 2007; Trautwein & Ludtke, 2007; Trautwein & Ludtke, 2009). Homework-related research studies should pay careful attention to the data with two-level variance to avoid incorrect research conclusions, since the variables related to homework are, by nature, multilevel and hierarchical nested data.

The intercepts or the average group mean were between 3.48 to 3.88. This showed that at the classroom level, intercepts of student perceptions of homework quality as shown by each variable ranged from medium to high levels. The variable “explanation” gained the highest intercepts of 3.88, while “discussion” obtained the least intercepts value of 3.48. Therefore, instructors should have discussed homework within classroom. This would also be beneficial for the students because what they learned from the business statistics course is considered basic knowledge of other courses Multilevel confirmatory factor analysis that was used to validate the multilevel homework quality model revealed that the model possessed structural validity or perfectly fit the empirical data. It was able to confirm that the variable “homework quality” could be used with the multilevel model, and

the factor loading value of the student level was less than that of the classroom level. At the student level, the observed variables that gained the highest value were explanation and content, followed by discussion and check respectively. Regarding the classroom level, the observed variables that gained the highest value were discussion, followed by explanation content and check respectively
As for the variables' ability to explain variance, at the student level the four variables could explain the latent variable "homework quality" at the percentage of 37.4-52.8 whereas the number ranged between 56.3 and 90.0 at the classroom level. This meant that at the student level, the observed variable that could best explain the latent variable "homework quality" was explanation, at the classroom level was discussion. In addition, the observed variables could explain the latent variable "homework quality" better at the classroom level than at the student level.

To conclude, the validation of the multilevel confirmatory factor homework quality model confirmed that the model that incorporated the four observed variables had structural validity and could be analyzed at the two levels. The multilevel confirmatory factor analysis not only tests influence factor structure between group, but also facilitates the testing of theoretical hypotheses at different levels and has substantial potential for helping homework researches. We hope that this paper will lead to a more widespread use the multilevel confirmatory factor model (MCFA) in homework variables.

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An integration of teaching and learning activities on environmental education in the subjects

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Abstract

The purposes of this study were to study the outcomes of a training workshop and to develop participants' capability in integration of teaching and learning activities on environmental education in the subjects. This project was a training project based on the principles of action research. The participants were 5 lecturers of Faculty of Education and 28 primary school teachers from 8 schools in Khon Kaen. Mini-lecture, group activities, exercises and presentation were used in this training project. Participant observations, interviews, tests, questionnaires, journal writings, photographs were employed for data collection. At the end of training sessions, questionnaires and two 10-item tests were administered. A criterion score of passing is 6. At least 75% of participants should pass a test. It was found that 96.43% of participants passed two tests which indicated statistically significant higher than 75% of participants ($\chi 2 = 6.857$, $p < 0.05$) with means scores of 8.357 and 7.536 and standard deviation of 1.394 and 1.319 for learner centered approach and integration of teaching and learning, respectively. In addition, the participant indicated their opinions and satisfactions towards the program at a high level ($\overline{X}$ =4.134, SD=0.652). The results also indicated that through a training project, the researchers and participants had developed team building, sharing, collaborative work and a sense of belonging.

Keywords: Integration, teaching and learning activities, environmental education, training,

Introduction

The balance of nature has been disturbed and natural resources have depleted as well as environmental degradation has been increasing because of our unsustainable patterns of production, uncontrolled population growth, and social and economic inequality (UNESCO-UNEP, 1994). These problems will cause more and more strain on the earth's natural resources and habitats (Asano, 1991).

It is an important that every person develops an informed awareness of the limits of our natural resources. If this is not done, the peoples and societies of earth are subject to distruction (Huckle, 1991; Fien & Trainer, 1993). At present, everyone knows and acknowledges environmental problems but comparatively few people truly understand and are aware of an importance of the environment. It is difficult and time consuming to persuade other people to appreciate the value and worth of the environment. To achieve this, new attitudes, skills, knowledge, awareness and behaviors towards the environments are needed. Hence, environmental education may be an appropriate way to help us face our environmental problems (UNESCO-UNEP, 1994; Fien & Trainer, 1993).

Educational system plays an important role to solve those problems. Therefore, the teacher is a key agency of change or transformation. Education in, about, and for the environment are three categorical approaches of environmental education. Education in and

about the environment are intended to develop knowledge, awareness, attitude, and skills. Education for the environment is intended to enhance values, ethics, problem-solving skills, and action (Spork, 1992). It is education for the environment that seems to have the potential contributing most to the general well being of environment (Sonneborn, 1994). Teaching and learning on environmental education is necessary. It is needed to teach students to act for the environment. In Thailand, there is not an environmental education subject at the basic education level. Environmental education is taught only in science subject but environmental education is related to all subjects, therefore the researchers conducted this study to help the teachers construct the environmental activities and infuse the environmental issues and/or local information in their own assigned subjects. Infusion is one kind of integration of teaching strategies.

Action research emphasizes dissatisfaction in personal practice. It seeks to improve teaching practice by systematically trying alternative strategies in a search for more satisfactory practice. Action research is focussed on the improvement and involvement of its participants (Carr & Kemmis, 1986; Kemmis & McTaggart, 1992). It attempts to involve participants in educational process through studying their own professional work collaboratively (Kemmis, 1988; Kemmis & McTaggart, 1992; Miller, 2002). The primary emphases of action research are action as a fundamental process or the improvement of practice, increasing understanding about practice in a collaborative group, and improving the situation in which the practice takes place (Zuber- Skerritt, 1992). Kemmis and McTaggart (1992) suggest four steps in a self-reflective spiral of action research: planning, acting, observing, and reflecting. These steps provide basis on which participants can formulate new plans, new action, observation, and reflection, and repetition of the whole process until a satisfactory result is achieved.

Purpose of the study

The purposes of this study were to evaluate the outcomes of a training workshop and to develop participants' capability in integration of environmental education in the subjects.

Method

In this study, the researchers employed documentary study and a literature review as well as conducted a participatory workshop. Documentary study was employed to study and understand literature, concepts, and related principles of classroom research. A two day participatory workshop on learner centered approach and an integration of teaching and learning activities on environmental education in the subjects was conducted collaboratively at the Faculty of Education during May 18-19 of 2002. Participants were encouraged to express their opinions and work together. They were required to perform classroom research emphasized on learner centered approach using a content of environmental education. In addition, participants had to meet in a group for once a month to report their progress and ask for suggestions and advice in conducting their research. Mini-lecture will depend on needs and problems in conducting research of participants. The following figure depicted a cycle of action research in conducting the project.

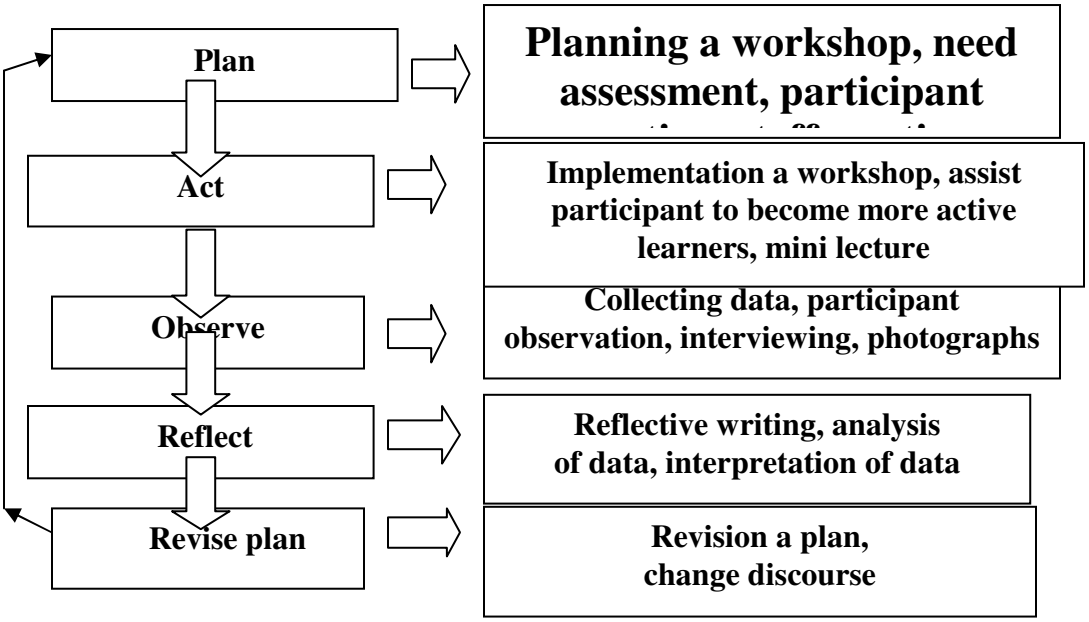

Figure 1 A cycle of action research

The Participants

The participants were 5 lectures (3 males and 2 females) of the Faculty of Education, Khon Kaen University and 28 elementary school teachers from 8 schools in Khon Kaen Province. There were 4 male and 24 female teachers with an average age of 45 years. Their ages ranged from 33 to 55 years. There were 25 teachers who completed B.Ed. and 2 teachers got M.Ed. There was only one teacher who didn't complete a bachelor degree. One participant observer was a graduate student in the Department of Educational Evaluation and Research Design, who observed and used semi-structured interviews with some participants to assist the researchers to reflect on the activities after completion and to validate these reflections.

Techniques for collecting data and monitoring the study

In monitoring the study, the researchers employed various techniques for collecting data such as interviews, participant observations, journal writing, reflective writing, testing, photographs and questionnaires.

Techniques for analyzing of data

Data were analyzed both quantitatively and qualitatively; with the emphasis was place on quantitative approach. The triangulation technique was used to cross-reference a number of participants' perceptions of an event (Grundy & Kemmis, 1981). Data were cross-checked by interviewing participants using three different interviewers to determine the consistency of data. To ensure trustworthiness and confirmability, journal-writing reports were read, verified, and edited by participants for affirmation of statements as authentic ideas or viewpoints.

In analyzing qualitative data, a process of interpretive approach was used to understand the essences of phenomenon under investigation by focusing on meanings of events and phenomena and the social events from every angle and considering it thoughtfully (Jeans, 1997; Comstock, 1982; Newman, 2000). Illuminative, formative, and summative evaluations were used to investigate the effectiveness of the workshop. During the ongoing workshop, participants were asked to reflect their opinions. At the end of a training session, two 10-item tests were administered to assess participants' knowledge about learning process of learner centered approach and integration of teaching and learning. A criterion score of passing is 6. At least 75% of participants should pass a test. Both open-and closed-ended questionnaires were used at the end of the participatory workshop to assess the effectiveness of the workshop in terms of the participants' satisfaction. The participants were asked to indicate their opinions after participating in the workshop using a five-point rating scale questionnaire. In scoring the instrument, numerical values of one through five were also assigned to each level of opinions: lowest (1), low (2), medium (3), high (4), and highest (5). Means and standard deviations were computed for each item of the questionnaires.

Results

Achievement outcomes

As indicated in table 1, it was found that 96.43% of participants passed two tests which indicated statistically significane higher than 75% of participants ($\chi 2$ = 6.857, p <0.05) with means scores of 8.357 and 7.536 and standard deviation of 1.394 and 1.319 for learner centered approach and integration of teaching and learning, respectively.

Table 1 Mean and standard deviation of test score and percentage of passing a criterion score with t-test and chi-square

Activity	scores			Percentage of passing	H_O: p =0.75
		SD	H_O : μ =6		
Learner centered	.357	1.394	t=8.960*	96.43	χ^2 =6.857*
Integration	.536	1.319	T= 6.169*	96.43	χ^2 =6.857*

*p<0.05

Satisfaction outcomes

As illustrated in Table 2, the participants indicated their opinions and satisfactions towards the program at a high level ($\overline{X}$ =4.134, SD=0.652) with the highest levels of opinions were capability of instructors ($\overline{X}$ =4.643, SD=0.731), easy to participate ($\overline{X}$ = 4.643, SD = 0.522) and usefulness of activities ($\overline{X}$ = 4.500, SD = 0.509).

Table 2. The means and standard deviations of participants' opinions towards activities used in the workshop

Items	$\overline{X}$	SD
1. Clarity of content	3.857	0.651
2. An appropriateness of using media	4.000	0.667
3. Climate in a meeting room	4.357	0.622
4. An appropriateness of materials	3.893	0.737
5. Sequence of presentation	4.143	0.705
6. Clarity of presentation	4.000	0.667
7. Interesting of presentation	4.179	0.612
8. An opportunity to ask questions	3.607	0.875
9. Easiness to understand	3.786	0.568
10. Level of satisfied expectation	3.893	0.629
11. Participation in session activities	4.036	0.637
12. Level of gained knowledge	3.786	0.630
13. An appropriateness of activities	*4.393*	*0.497*
14. Interesting of activities	*4.429*	*0.504*
15. Usefulness of activities	*4.500*	*0.509*
16. An appropriateness of time allocation	*4.036*	*0.637*
17. Congruence of content and activities	*4.286*	*0.713*
18. An appropriateness of presentation	*4.214*	*0.787*
19. Easy to participate	*4.643*	*0522*
20. Capability of instructor	*4.643*	*0.731*
total	4.134	0.652

Reflections

At the end of each phase of the participatory workshop, all participants were asked to anonymously write their reflections. Every participant said that the workshop was worthwhile and necessary. They appreciated the friendly and democratic atmosphere of the workshop; the opportunity to develop and acquire skills in conducting classroom research on learner centered approach; the opportunity to develop and enhance skills in collaborative; and some of opportunity to participate in the workshop. They claimed that they also had the opportunity to develop skills in interpersonal relations, collaborative work, and problem-solving. They also developed their ability to discuss, report, speak, and respond to feedback.

I have made a right decision to participate in this project. I have gained knowledge and enjoyed practicing collaborative work. I like activities and applied some activities to my students.
(Extracted from a participant's journal)

I have gained fundamental knowledge in providing learning process and I have acquired confidence in conducting classroom research for improving my teaching because of participating in this project for 2 years
(Extracted from a participant's journal)

I would like to tell this team of instructors that they have to be very patient with participants because some participants have no fundamental knowledge and don't have much time to conduct classroom research
(Extracted from a participant's journal)

It is very worthwhile to participate in this activity because of good instructor and good advice
(Extracted from a participant's journal)

I wish that my colleagues should have this opportunity so they could apply some principle into their teaching
(Extracted from a participant's journal)

All participants enjoyed each provided activity. This could be seen and observed from cooperation and helping in group working with happiness
(Extracted from a participant's journal)

I will apply some games and environmental activities in my teaching.
(Extracted from a participant's journal)

All activity about learner centered approach could be applied in teaching and learning in classroom
(Extracted from a participant's journal)

I will use local information and some environmental issues in my teaching
(Extracted from a participant's journal)

Conclusion

The results of this research show the effectiveness of the workshop in terms of achievement outcome and satisfaction outcome. Networking is also established because they have to work collaboratively. The participants were very satisfied with workshop and research activities. They gained a lot about working as a group. They knew how to work with other people and knew themselves better. They have also developed skills in conducting research on learning centered approach to improve their teaching-learning activities. In addition, the benefit of this training project was not limited to personal development of teachers but also their students as learner centered. In particular, the participants had acquired skills in conducting classroom research about learner centered approach. Moreover, the participants conducted research and presented their papers at the Second Conference in Educational Research on February 7, 2003 at the Faculty of Education.

Significance of the study

This study was designed to develop the capability of the elementary teachers to be research teachers for the benefits of their professional development and their students. This project acted as a mentor and a consultant to give suggestions and advice in conducting research.

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Using scenario analysis to build university faculty & student travel competencies

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ABSTRACT

As the spectrum of University sponsored travel for educational and professional purposes continues to expand, faculty chaperones are faced with the challenge of counseling a diverse group of student travelers, including those with varying levels of travel experience as well as students with medical conditions or special needs. With appropriate planning and advice, most faculty and student travel teams can experience safe and rewarding travel. However, many travelers are unaware or unprepared for travel challenges and avoid considering worst case scenarios ranging from health risks or illness to breaches in cultural or legal protocols. The intent of this paper is to apply scenario planning theory and practice to the development of faculty and student travel competencies. In this paper we propose that scenario analysis can help faculty and students prepare for and manage the travel experience in a way that will build travel competencies and improve travel outcomes.

Keywords: scenario planning/analysis, travel competencies, faculty development

INTRODUCTION

Faculty and students at colleges and universities are intensely pursuing travel opportunities for educational and professional purposes. Study abroad programs, as well as student oriented conferences and competitions are catalysts for increased university travel alongside the traditional array of sports and athletic program related travel (Patterson 2005). Support for the more contemporary venues requiring university faculty and student travel is based on cited benefits of experiential learning, networking opportunities, and an overall broadening and developmental experience for students that augment campus life.

A substantial body of research is available regarding the logistical preparation of faculty and students for their travel experience (Koernig 2007). This literature provides specific recommendations to help faculty members organize, plan, and conduct travel. Included in these recommendations are strategies to help manage student anxiety during the pre-trip sessions, acclimate students to their new environment, balance academic content with cultural activities, select types of learning activities, and facilitate student exchange with the local community. However, a gap exists in the literature regarding how to prepare faculty and students for handling adversity during the travel experience (Staats, Panek, and Cosmar 2006).

The intent of this paper is to apply scenario planning theory and practice to the development of faculty and student travel competencies. In this paper we propose that scenario analysis can help faculty and students prepare for and manage the travel experience in a way that will build travel competencies and improve travel outcomes. This paper proposes to apply the research, theory, and practice of scenario planning (Chermack, 2005; O'Brien 2004) as part of

the instructional design efforts focused on enhancing the skills and competencies of faculty and student travelers.

Every travel experience can be viewed as a story with an ending ranging from the expected, pleasant experience to the surprisingly unpleasant drama. Training and development efforts that prepare faculty and students for a range of travel outcomes are warranted (American Council on Education, 2006). Travel advice prior to departure may help decrease the likelihood of catastrophic events (Coffey 2004) and improve student behavior while representing the university. It is important for a faculty chaperone to know what to communicate and how to communicate to students not only about expectations for travel that unveils according to plan, but also about contingencies for when unplanned, unpleasant travel incidents occur.

Many accidents have occurred during university travel over the years. As reported by the American Council on Education (2006), in 2001, out of six Wheaton College students traveling, one died and three suffered severe injuries when the students decided to start their drive home after their night departure was delayed for several hours. Reports theorize that the student driver either fell asleep or was distracted because there were no signs of the vehicle reducing speed. That same year, six Utah State University students were injured (one critically) as a result of not wearing seat belts in a vehicle occupied by students. Other true stories of students who ended up miles from home in situations beyond their worst nightmares can be readily found in the popular press. For example, National Geographic has created a video called "Locked up Abroad" that tells the extraordinary tales of ordinary people locked up abroad and how they regained their freedom.

Given that unexpected travel adversity can and does happen, we consider the significant pool of university faculty and students that travel on behalf of their institutions to a variety of venues, domestically and abroad, and propose that the scholarship of teaching and learning be applied to university sponsored travel preparation that acknowledges "worst case" scenarios as well as the rewarding outcomes related to travel. We use an interdisciplinary approach, integrating social science literature from medicine, business strategy, tourism management, operational research, and future studies to apply scenario planning methods to the development of faculty and student travel competencies. First we provide a brief overview of the traditional pre-travel briefing. Second, we propose the use of scenario planning as part of the pre-travel process and provide examples of travel scenarios addressing adversity. We conclude with a summary of the steps for facilitating scenario discussions.

TRADITIONAL PRE-TRAVEL BRIEFINGS

A pre-travel briefing informs participants about what to guard against and what to expect during the travel experience. They are important for personal safety as well as to safeguard the reputation of the institution. Disseminating the message that people need to seek council before they travel in a reasonable timescale is crucial to the efficient and effective delivery of travel advice (MacDougall and Gyorkos, 2001). The format of a travel briefing can be a group or individual conversation. In addition, documentation is often necessary to be compliant with university travel policies and procedures.

A pre-travel briefing entails a collection of information regarding the traveler and the nature of the trip. A travel briefing form (Appendix 1) contains three major parts that can be adapted as necessary. Information about the traveler is included such as age, gender, medical history and current health status (i.e., medications or allergies to drugs or food), previous

experience traveling, current knowledge of the area traveling to, relevant comprehensive insurance provision, and any special needs. Today it is essential to make a thorough assessment of the traveler to provide appropriate advice. Suh and Mileno (2005) note that along with a discussion of immunizations, additional advice regarding supplemental health insurance, accidents and injury, motion sickness, jet lag, extremes of temperature and sun exposure, and food and water safety should be provided. Although the demands on a faculty advisor or coach accompanying students increases with the inclusion of a travel briefing, last minute preparations and/or emergency triage can be avoided.

The briefing would include information about the traveler's itinerary such as destination, departure date, length of stay, mode of transportation, quality of accommodations, and health care standards at destination. The pre-travel briefing also covers the purpose of trip, planned activities, and financial ramifications. Pre-travel briefings can be arranged to facilitate student interaction before travel in addition to sharing pertinent trip information.

Traditional pre-travel briefings are held as discussion groups that include watching travel videos, viewing photographs, and listening to lectures about planned activities. Without the aid of pre-travel briefings, most of what students learn about traveling is through trial and error or by traveling with someone more experienced. For example, most experienced travelers will 1) write down all confirmation numbers (hotel, rental car, and/or airline) in at least two places, 2) pack everything into one suitcase to carry on board, and 3) wear and/or pack dark clothes because they do not show spots or dirt and they work for most occasions. These travel tips have been recorded in a plethora of books, are available online, and can be elaborated on during pre-trip meetings.

Travel briefings also provide an opportunity for faculty-to-student bonding as well as student-to-student bonding. Multiple pre-trip sessions are advised to manage rapport and discussion and to gauge student interest in specific activities scheduled for the trip. If modifications to plans are needed, the pre-trip sessions can be used to assess and communicate travel plan changes.

While universities offer policies and procedures for faculty and students to prepare and manage a sponsored travel experience, we have not found in the teaching or travel literature an application of scenario planning and analysis for teaching and learning about travel. In addition, a gap in the literature exists detailing how to communicate to students about adverse travel situations. Thus, we propose that scenario analysis be incorporated in pre-travel briefings as a teaching and learning practice for travel training including contemplating unpleasant or adverse travel situations.

SCENARIO ANALYSIS AS a TRAVEL BRIEFING TOOL

A scenario is a story about how the future might turn out. Among the many tools that one can use to contemplate an uncertain future and improve performance in a dynamic environment, scenario planning and analysis is gaining credibility as an effective tool, providing for a structured process for thinking about and anticipating the unknown future. Bishop, Hines and Collins (2007) aptly notes that scenario analysis is built upon two premises: 1) that it is critical to think about the future or else we run the risk of being surprised and unprepared for it and 2) the future is uncertain so we must prepare for multiple plausible futures and not just the one we expect to happen.

Scenario analysis is a process of analyzing possible future events by considering alternative possible outcomes (Wack 1985; Schoemaker 1995). Using scenario analysis as a preparation strategy forces one to take a good look at the possible futures and ask am I going to be ready for this ending or outcome. Scenario analysis has been cited as exceptional for its ability to capture a range of possibilities in rich detail that allows one to examine possible future developments that could directly impact an individual or an organization (Schwartz, 1991). Scenario analysis has the cited benefits of unmasking and/or identifying factors that contribute to an array of potential outcomes of a situation, while enabling one to anticipate and evaluate outcomes across possible environments (Flowers, 2003).

The process of scenario analysis is widely recognized as a tool for anticipatory learning and decision making (Fahey and Randall, 1997; Millett, 2003). Chermack (2005) presents a model of scenario planning linking the scenario to the final performance or behavior of the scenario analyzer. In a sequential manner the scenario, as the catalyst, influences learning and reflection, which reveals and alters mental models. Subsequently the mental models impact decision making and ultimately influences performance. Thus a correlation stream can be depicted as scenarios → learning → mental models → decisions → performance. Chermack (2005) outlines the underlying propositions of the model as follows:

> Proposition 1: If scenarios are positively associated with learning, then learning will increase as a result of participation in scenario planning.
>
> Proposition 2: If learning is positively associated with the alteration of mental models, then mental models change as a result of learning.
>
> Proposition 3: If a change in the mental models alters decision structure, then a change in mental model implies a change in the approach to decision making
>
> Proposition 4: If changes in decision making are positively associated with performance, then performance will increase as a result of altered decision-making strategies.
>
> Proposition 5**:** If scenarios are positively associated with learning, learning is positively associated with altered mental models, altered mental models are positively associated with change in decision-making and change in decision making positively associated with performance, and then scenarios can be positively associated with performance.

Travelers can learn how to anticipate and prepare for the future through scenario analysis. Travel scenarios can serve as catalysts that ultimately influence behavioral options. The scenarios can be constructed from practical knowledge, previous research, or a preliminary qualitative study to identify relevant factors. For example, Larsen, Brun and Ogaard (2009) developed the Tourism Worry Scale based on general service and tourism literature. The aim of the scale was to examine travelers' worries regarding typical negative outcomes of tourism trips. They collected adverse travel incidents or worries reflected in popular media and academic research. They identified travel hazards such as food poisoning or illness due to water sanitation, infection or infectious diseases, traffic accidents and concerns about travel arrangements such as driving conditions, and petty crimes, violence or victimization through other forms of

criminality. In addition, tourism research included traveler concerns about unanticipated weather conditions or hassles with customs or border security.

Table 1 contains a list of typical travel worries and scenarios that reflect the potential travel hazard (based on the author's personal experience). Scenarios are constructed using a series of sentences with factors relevant to how one would handle the incident. The range of possible conditions for each factor can be represented in angled brackets <> for each factor. As discussed earlier, the pre-travel briefing should contain information about the traveler such as age, gender, medical history and current health status (i.e., medications or allergies to drugs or food), previous experience traveling, current knowledge of the area traveling to, relevant comprehensive insurance provision, and any special needs. Each of these factors can be cited in a travel scenario and used as a basis for a discussion of its importance and consequences.

There are different types of scenarios (Huss and Honton 1987). Scenarios can be predictive and evoke thoughts about what will happen. Scenarios can also be proactive and induce thoughts about what changes need to occur or policies to apply to achieve a certain objective. Two examples of a predictive and a proactive scenario are provided in Table 2.

FACILITATING THE SCENARIO DISCUSSION

Equally important to the development of sound scenarios is the discussion management process (Ven der Heijden, 1996; Godet and Roubelat 1996). The delivery of the scenarios and the fostering of dialogue beyond the set up of the scenario are crucial to the understanding of the importance of the points being emphasized and the comprehension of the key learning lessons. Table 3 lists steps to take when preparing to lead a discussion using scenarios.

The overarching theme for this discussion management process is to take time to plan. Trying to lead a discussion without proper preparation can be disastrous. The entire time allotted for discussion can come and go and without a plan, no knowledge transfer will have occurred. The first step is to start with a clear picture of what goals are to be accomplished in the session. This step is an important step because it sets the stage for what goes on in the remaining steps.

After goals have been established, the second step is to write down the objectives. The objectives are more pointed than the goals and link to the scenarios and the scenarios development process. Objectives play a role in the determination of how many different scenarios are beneficial to the session. Generally speaking, more objectives translate into the formulation of more scenarios. O'Brien (2004) suggests that learning outcomes of using scenarios in developmental processes can include aiding in understanding of the situation, rather than providing a single definitive answer to a problem. In addition, scenarios can help the trainees look at a situation in a new way.

Step three, thinking the scenario(s) through, is a time consuming step; however, when done properly, ensures positive results with regard to discussion stimulation. Think about what participants might say as they process the scenario. Think about what "lessons learned" are important take-a-ways for the scenario. Make sure that ways to lead the dialogue are in mind that will assist with the connection of the conversations to the take-a-way moments. Additionally, after one scenario has been fully processed, have other scenarios with the same basis in mind to cause deeper thought. For example, in one scenario, a student may be used as the person exhibiting improper behavior. In the next scenario, simply change the student to one of the faculty leaders and carry the discussion further. Minor changes such as this one forces participants to remain attentive and open minded to the idea of learning from the scenarios. It is

also helpful to have multiple outcomes prepared. Having multiple outcomes to share allows for smooth transitions and often times transcends the dialogue to another level, a higher level of thinking. How does this translate for the participants? The participants yet again are challenged to think critically. They are given the task of processing multiple outcomes and discovering the key lessons for themselves. Self-discovery makes the learning process easier to retain and more meaningful.

The last step, be ready for unexpected twists, refers to the discussion leader minimizing the number of surprisingly difficult situations he or she may encounter. The discussion management process can be tricky, especially if the potential discussion has not been thoroughly thought through. Proper preparation, especially processing step three, is beneficial to the discussion leader because there is less likelihood that conversations will go in an awkward direction. The preparation process will assist the discussion leader with reading the flow of the discussion and steering the dialogue in another direction if the discussion calls for a direction change. As an individual gains experience with scenario discussion leadership and becomes an astute discussion leader, anticipating situations will become second nature and participants will be oblivious to the near breakdown of the discussion.

CONCLUSION

The goal of this paper was to take the first step toward providing faculty with a new methodology for impacting travel readiness – scenario analysis. This paper explores the use of scenarios to enhance university faculty members and students' travel savvy and address important elements of travel policy, safety, and preparedness.

Any faculty member who has played an integral part of planning or leading a student oriented travel experience knows that it is a lot of work and responsibility. Even as the university seeks to support travel, many of the preparations and risks fall on the shoulders of the faculty. In fact, faculty and students are often unaware of the travel policies and procedures for their institution. The future travel plans of university faculty and students may be influenced by both positive factors such as the results of an enjoyable and exciting learning adventure, or by negative factors such as unpredictable group dynamics or individual crisis. By developing faculty and students to be vigilant with respect to pre-travel orientation and post-travel debriefing, safe and exciting travel experiences can be ensured.

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APPENDIX 1

Sample Pre-Travel Briefing Document

Traveler information:

Name _____ Age _____ Gender _____
Do you have any recent or past medical history that should be noted? (This includes diabetes, heart and/or lung conditions.) If yes, please explain.
List current medications _____
Do you have any food or drug allergies? Yes _____ No _____ If yes, please explain.
Previous travel experience _____
Where traveling _____
Knowledge of area traveling to? Yes _____ No _____
Do you have travel insurance? Yes ____ No _____
Any special needs?

Itinerary information:
Destination: _____
Departure date _____ Length of Stay _____
Mode of transportation _____
Accommodations _____
Health care standards at destination _____

Other information:
Purpose of trip _____
Planned activities _____
Financial ramifications

TABLE 1

Travel Briefing Topic	Scenario
Lost documents or money; hotel reservations, train tickets or other travel documents contain mistakes	Imagine one of the student travelers, a <21 year old> <Caucasian> <male> collapses while the group is visiting a cultural attraction/site. Although students have been told to keep their emergency contact and insurance information with them at all times, upon checking his pockets, it is clear this student did not follow that advice.
Social unrest, terrorism, or war	Imagine arriving at your destination hotel and finding service employees picketing in front of the building.
Getting lost or losing contact with travel companions	Imagine a faculty-led group of students is traveling in a foreign country and they are using the subway. While boarding, <one student> is separated from the group because the doors close before he can get on and he does not speak the native language.
Financial mistakes or mishaps	Imagine there are four days left on your trip and one of the student travelers has spent lavishly on <souvenirs> and does not have money left for food.
Being late for transportation (trains, buses, or airplanes); worry about time or appointments	Imagine it is time to leave the hotel for the first professional visit and <one student from the travel group> is not in the lobby and is not in his room.
Inappropriate attire worn or behavior displayed	Imagine it is the morning of an official program visit and the travel group is meeting in the hotel lobby. The required attire is professional dress and <one of the student travelers> enters the lobby in tattered jeans and tennis shoes.

Table 2		
Travel Briefing Topic	Directions: Ask students to imagine alternative possibilities or solutions for each scenario	
	Predictive Scenario – what can happen?	Proactive Scenario – what should be done?
Medical History	Imagine one of the student travelers, a <20year old> <female> <African> <American>, is a <diabetic>. Her friends tell her that she does not have to share her medical information with the faculty trip leaders. She decides to ignore the section on the medical history form that asks for current health issues. What can happen if she does not disclose this information?	Imagine one of the student travelers, a <20year old> <female> <African> <American>, is a <diabetic>. She did not disclose medical information with the faculty trip leaders. She ignored the section on the medical history form that asks for current health issues. While travelling with the group she faints. What should be done if she faints?
Early or Late Departure	Imagine one of the student travelers is a <22year old> <male> <Hispanic> <American>. He has a grandmother who was admitted to the hospital on the day he leaves for his study abroad tour. The airline tickets are non-transferable and non-refundable. What can be done if he has to return home because of his grandmother's illness?	Imagine one of the student travelers is a <22year old> <male> <Hispanic> <American>. He receives a phone call indicating that here has been a family tragedy and he needs to return home <immediately>. The airline tickets are non-transferable, non-refundable. He receives a message asking him to return home as soon as possible. What should be done if he has to return home early?

Table 3: Steps to take when leading discussions using scenarios	
Step One	Start with a clear picture of what goals are to be accomplished
Step Two	Write down the objectives
Step Three	Think the scenario through
Step Four	Be ready for unexpected twists

Determinants of undergraduate business student satisfaction

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Abstract

An analysis of the determinants of overall student satisfaction of 1,212 business seniors was conducted using the Undergraduate Business Exit Assessment. A factor analysis of the student's responses resulted in the determination of eight factors which are distinct from those proposed by the providers of this standardized instrument: (a) self-confidence, (b) satisfaction with the curriculum, instruction, and classes, (c) satisfaction with quality of teaching of subject matter, (d) satisfaction with extra-curricular activities and career opportunities, (e) satisfaction with student advising, (f) quality of teaching and instructor feedback, (g) satisfaction with computing facilities, and (h) satisfaction with student quality and interaction. Stepwise regression analysis was used to determine the strength of the relationship between those factors and three alternative measures of overall satisfaction: (a) were expectations met?; (b) what is the value of the educational investment made?; and (c) would you recommend the program to a friend? Regression results show that advising and quality of teaching in the subject matter have little or no effect on overall student satisfaction. Self-confidence, extra-curricular activities and career opportunities, and quality of teaching in general are the factors with greater impact on satisfaction. The results of the analysis are discussed and directions for further study are suggested.

Keywords: student satisfaction, assessment, factor analysis, undergraduate business program

Introduction

Institutions of higher education are increasingly realizing that they are part of the service industry and are putting greater emphasis on student satisfaction as they face many competitive pressures. On the one hand, student satisfaction has been related to recruitment and retention and academic success [Athiyaman, 1997; Elliott & Healy, 2001; DeShields et al., 2005; Helgesen & Nesset, 2007] which has lead university administrators to pay great attention to those factors that help them to more effectively attract students and create a supportive learning environment. Given the diversity of students' goals in pursuing a college degree and the variety of institutional missions, the challenge is to attract and retain those students that are best matched to the university's capabilities and to develop competences at the university that will better serve the needs of diverse student populations. Administrators and educators also recognize that understanding the needs and wants of students and meeting their expectations are important to develop environments in which students can learn effectively [Seymour, 1993; Gerdes & Mallinckrodt, 1994]. Furthermore, psychologists have found that student satisfaction helps to build self-confidence, and that self-confidence helps students develop useful skills, acquire knowledge, and become more confident, in what may be described as a virtuous cycle. For

example, Aitken (1982) found that academic performance is one of the most important factors in determining satisfaction, and Pike (1991) concludes that satisfaction exerts greater influence on grades than academic performance on satisfaction. According to Bandura [1977] and Schunk [1991], learners use self-regulatory attributes to control their personal learning processes and self-efficacy influences choice, efforts, and volition. Successful students seem to have an ability to motivate themselves to complete a task, while less successful students have difficulty in developing self-motivation skills (Dembo & Eaton, 2000).

On the other hand, colleges and universities are increasingly involved in "rankings wars", and external ranking instruments invariably include some measure of student satisfaction along with other college and student attributes. College rankings are increasingly disseminated with great detail about the different components of the overall score, and the "stories" that frequently accompany the presentation of the overall position of an institution often refer to the general climate on campus and to the level of satisfaction of the students. In a narrower sense, measures of student satisfaction have long been used to assess the effectiveness of different college services (e.g. housing, student life, financial aid) and programs (e.g., programs dealing with special student populations such as commuters, adult learners and international students). The assessment of the effectiveness of particular academic programs (e.g., engineering, business) is increasingly including measures of student satisfaction.

Many aspects of the total college experience contribute to a student's overall satisfaction as the university's product is the sum of the student's academic, social, physical, and spiritual experiences [Sevier, 1996]. Much of the research in this field has focused on identifying program or student characteristics that impact of satisfaction. For example, whether the student is a commuter or a resident has been shown to impact their evaluations of quality; similarly, finding a compatible college roommate and adapting to a new social environment impact on retention; general factors such as the reputation of the institution or the ability to progress through the academic program also impact on satisfaction (Wetzel et al. 1999). Moro-Egido and Panades (2009) found that part-time students are more likely to report being less satisfied, that women are more satisfied in general, and that students enrolled in more specialized programs are relatively more satisfied with their degree. Umbach and Porter (2002), Grunwald and Peterson (2003), and Thomas and Galambos (2004) focused on faculty and department roles in shaping student satisfaction, concluding that department where faculty focus on research, students report higher levels of satisfaction.

The current study focuses on program-centered determinants of student satisfaction with their business school experience. Rather than asking business students to rate the overall college experience, the satisfaction instrument used in this study measures satisfaction with specific features that are pertinent to the student's business academic program: curriculum, faculty, facilities, advising, and placement. The measures of overall satisfaction are about general satisfaction with the student's business program (Were expectations met?, Is it a good value?, and Would you recommend the program to a friend?) rather than about their overall college experience.

The remainder of the paper is organized as follows. Section 2 provides an overview of the literature on student satisfaction, perceived academic quality, and measurement instruments and models. In section 3, we describe in detail the methods and sample utilized in this case study. In section 4 we present the results of an exploratory factor analysis and of three regression models. A discussion of the findings and suggestions for further study conclude the paper.

Satisfaction, Quality, and Confidence

At first glance, student satisfaction, student perception of quality, and student self-confidence are ideas that are simple to grasp. However, there are hundreds of articles attempting to clarify these concepts, develop measures to quantify them, and determine what their impact is on one another and on other constructs. Concepts that are seemingly clear to everyone suddenly are more difficult to define and isolate.

One of the most often quoted definitions of satisfaction is that offered by Hunt (1977, p. 49): "Consumer satisfaction with a product refers to the favorableness of the individual's subjective evaluation of the various outcomes and experiences associated with buying it or using it". In the context of education, student satisfaction refers to the favorability of a student's subjective evaluations of the various outcomes and experiences associated with education (Oliver & DeSarbo, 1989). Since satisfaction is based on experience, student satisfaction is constantly being influenced by the students' overall experiences (Oliver, 1980) and, as Seymour (1993) noted, what happens to students in the classroom and with their academic choices is not independent of all other experiences on campus life and the combination of all experiences affects the overall satisfaction with the institution.

Parasuraman et al., (1985, 1988) developed an important framework for understanding customer satisfaction in services. Satisfaction is based on the disconfirmation of consumer expectations in what is commonly known as the Gap model or the ServQual model: satisfaction occurs when perceived performance meets or exceeds the student's expectations and dissatisfaction results when there is a negative gap between performance and expectations. These authors propose that satisfaction is based on the gaps alongside five dimensions of experience that are common to all services: assurance (i.e., courtesy, knowledge, trust), empathy (i.e., individual attention and caring), reliability (dependability and accuracy), responsiveness (i.e., promptness and accommodation), and tangibles (i.e., facilities, equipment, personnel). They also suggest that the formation of expectations is based on word of mouth (e.g., recommendations), needs, past experiences, formal communications from the organization to its customers (i.e., printed promises), and price (Zeithaml, 1993, 1996). The proponents of this approach argue that the ServQual model is eminently applicable to higher education and have designed measurement instruments adapted to this sector (e.g., Browne et al., 1998).

Another concept of satisfaction is related to Herzberg's two-factor theory of motivation (Herzberg et al., 1967) which propounds that factors that influence positive satisfaction (satisfiers or motivators) are different from factors that cause dissatisfaction (disssatisfiers or hygiene factors). Dissatisfiers are generally considered as factors that are part of the environment and largely under the control of someone other than the student, while satisfiers are part of the job and under the control of the self.

Kano extended (1984) the dichotomy of satisfaction/dissatisfaction to three types of satisfaction. "Dissatisfiers" or "must-be" factors are those elements of the customer experience that meet the customer basic needs or assumptions and their absence or poor performance quickly causes dissatisfaction; "satisfiers" or "more is better" factors are those components that customers readily equate with satisfaction and with meeting reasonable expectations; "delighters" or "ah-hah" factors address needs that the customer was not conscious about or was not expecting. For example, Petruzzeli et al. (2006) proposed the following classification of satisfaction factors for the Italian higher education environment: a) "must be": tutoring, administrative services, contacts with staff and professors, library, teaching equipment, lecture

halls, and laboratories; b) "more is better": scholarships, counseling, internships, educational offerings, internet access, refectories; and c) "delighters": career placement, leisure time, accommodations, international relations, language courses, online registration.

While student satisfaction is considered a short-term attitude resulting from the student's educational experience, perceived quality is a general perception often affected by objective information and reputation and not necessarily tied to personal experience. For government officials and administrators alike, program quality is often linked to objective achievements, retention rates, time to graduate, enrollment trends, average starting salaries of graduates, percentage of students going to graduate programs, and passing rates on professional certification exams. Athiyaman (1997) also distinguished between perceived quality and consumer satisfaction. While the former concept is defined as "the overall evaluation of the goodness or badness of a product or service", the latter concept is a short-term attitude resulting from the evaluation of a specific consumption experience.

Two concepts of quality in higher education have been proposed by Rapert et al. (2004): process quality attributes and functional or outcome quality attributes. The former deals with how well services are provided, i.e., how well teaching and advising is performed, how hospitable the institutional climate is, and the like. The latter concept relates to how the outcome of the process helps the consumer to achieve other goals, i.e., the value of the education for career advancement or for attaining intellectual achievements. In their study of expectations of MBA students, Rapert and her colleagues differentiated between in-class quality attributes (intellectual growth, professionalism, specialized training, integration, teamwork, devoted instructors, and relationships with classmates and faculty) and outside-class quality attributes (integration with business community, career preparation, availability of financial aid, and clarity of program goals) and found that most higher education satisfaction studies focus on process quality attributes, that is, on the delivery and operational aspects of the student educational experience. They pointed out that while student satisfaction, as measured by most instruments currently in use, is helpful in assessing the quality of the service delivery (process quality) it may not capture the quality attributes of the educational product offered by an institution (functional quality). For example, as found by Kotler and Fox (1995), most students are satisfied with their academic programs but less satisfied with support services such as academic advising and career counseling.

In what regards student confidence, Athiyaman (1997) noted that negative disconfirmation of a student's expectations produces short-term dissatisfaction focused on a specific transaction or experience (e.g., a bad class, an unpleasant exchange with a staff member or a classmate), and that dissatisfaction leads to attitudes and behaviors that are different from those derived from satisfaction. According to Bernstein et al. (1979), product service failures will generally be attributed to external causes, that is, the student might blame the professor, the university or the fellow student, while positive disconfirmations have a higher likelihood to be attributed to the self (i.e., I worked harder, I made a smart choice, or I am able to take it to the next level). On the one hand, positive satisfaction is expected to be associated with self-confidence in the short-term and only with perceived quality if positive satisfaction is prolonged, pervasive, and sustained. On the other hand, as suggested by Aldridge and Rowley (1998), dissatisfaction with one incident leads to dissonance and to complaints, while dissatisfaction with repeated incidents leads to disconfirmation (change of expectations and perceived quality), to disaffection and to withdrawal.

Measuring of Student Satisfaction

Parasuraman and his colleagues (Parasuraman et al., 1985, 1988; Zeithaml et al., 1993, 1996) have proposed one of the most important models to measure customer satisfaction. The ServQual model implies that consumers are asked register their level of satisfaction with a number of attributes using a scale measuring their expectations and then filling out another scale measuring perceived performance. Extensions to this model have lead to the introduction of yet another scale that inquires about the importance of each attribute to the consumer, in what is known as the weighted ServQual model. In many studies, however, only two scales are included: one with question items framed with a 5- or 7-point scale ranging from "much better than expected" to "much worse than expected", and a second scale eliciting ratings of the importance of each attribute to the respondent. This approach is generally referred to as the importance-satisfaction model.

The ServQual model is not unchallenged, however. Cronin and Taylor (1992) and Taylor and Cronin (1993) criticized this approach on theoretical and measurement bases and proposed an alternative measure of customer satisfaction, ServPerf, which is based on a single scale– perceived performance–and is unaffected by expectations or by importance weights. A more recent study by Appleton-Knapp and Krentler (2006) presented an interesting finding that highlights the difficulties of measuring satisfaction: when students were asked about their expectations prior to or at the outset of their educational experience, the gap between expectations and performance had little predictive power; however, when students were asked to assess whether a course fell short, met or exceeded expectations at the end of the semester, the gap model was adequate in predicting overall satisfaction. The authors concluded that expectations at the beginning of the course are often different from the recollection of expectations at the end of the experience, and that the valence and intensity of the experience affects the reconstruction of earlier expectations. Given the obvious difficulties in measuring satisfaction, many instruments frame satisfaction items in simple terms, such as "exceeded expectations", "met expectations", and "did not meet expectations" or use a Likert scale with other similar descriptors. Babin and Griffin (1998) question the construct validity of most satisfaction scales proposed in the literature and strongly recommend that an equal number of positively and negatively valenced questions items be included in any measuring instrument in order to clearly isolate the two dimensions of satisfaction: satisfaction and dissatisfaction.

Most empirical research studies on student satisfaction are based on specific models and instruments developed by the authors. In addition, many institutions of higher education prefer to use their own homegrown instruments to assess student satisfaction in general or student satisfaction with particular aspects of the college experience of their interest. Customized instruments have the great advantage of framing many of the question items in terms of the institution's mission and of the particularities of their offerings and student populations. The great variety of models and the proliferation of customized instruments result in a variety and richness of perspectives on student satisfaction but produce data that cannot be easily compared.

There is nonetheless a growing number of standardized, commercially-produced measures of student satisfaction. These instruments are generally based on sound theoretical basis and have been rigorously tested for their psychometric properties. The organizations that offer these instruments usually provide benchmarks which help the client institutions assess their relative position to peers or academe in general, and many of these instruments allow the client institution to develop institution-specific questions in order to address their specific concerns and

contexts. Two of the most widely adopted instruments in higher education are the Student Opinion Survey (SOS) marketed by American College Testing (ACT), and the Student Satisfaction Inventory (SSI) developed by the Noel-Levitz consulting firm. Both instruments are comprehensive in nature in the sense that they are designed to assess enrolled students' satisfaction with core programs, support services, and many other aspects of their 'total' college experience. For example, the SOS measures the students' satisfaction with college services and programs, academic instruction, admissions, college rules and policies, facilities, registration, and the general student environment. Similarly, the SSI was developed to assess the following 12 dimensions: academic advising effectiveness, campus climate, campus support services, concern for the individual, instructional effectiveness, admissions and financial aid effectiveness, registration effectiveness, responsiveness to diverse populations, safety and security, service excellence, student centeredness, and campus life (included in versions for four-year institutions). A unique feature of the SOS instrument is that it assesses the importance assigned by students to each aspect of the academic experience and evaluates the students' satisfaction with their experience of each item. It clearly follows the importance-performance model.

A recent newcomer into the field of student satisfaction assessment is Educational Benchmarking, Inc. (EBI), a company that is sponsored by the Association for the Advancement of Collegiate Schools of Business (AACSB). The instrument that EBI developed, the Undergraduate Business Exit Assessment (UBEA), was designed exclusively for business undergraduate programs and it has much narrower focus than those of SOS and SSI. The scope of UBEA is the academic business program only. The instrument includes 66 items that are exclusively concerned with different aspects of the academic experience in business, such as satisfaction with teaching in business courses, knowledge and skills that are important for a business career, and assistance in securing placement in an organization or graduate program. UBEA does not attempt to capture the students' satisfaction with aspects of the total college experience (e.g., residence halls, food service, recreational/sports activities, financial aid) that albeit vital are not directly related to the delivery of the academic business program. EBI provides extensive comparative data and also allows the inclusion of custom questionnaire items in the UBEA instrument. The benchmarking reports specify that the 66 items which comprise the instrument can be organized in 16 multi-item factors plus another 16 individual items that could not be aggregated into factors. The sixteen proposed factors are: 1) quality of faculty and instruction in required courses, 2) faculty responsiveness, grades, and student effort in required courses, 3) quality of faculty in major courses, 4) faculty responsiveness, grades, and student effort in major courses, 5) breadth of curriculum, 6) size of enrollments for required and major courses, 7) student organizations and extracurricular activities, 8) facilities and computing resources, 9) characteristics of fellow students, 10) placement and career services, 11) advisor, 12) effective communication and team work, 13) use and manage of technology, 14) effective management and leadership skills, 15) critical thinking and problem solving, and 16) overall program effectiveness. Unlike the SSI (but similarly to SOS), the UBEA does not assess the importance assigned by students to the different aspects of the business experience; instead, the responses are registered on a 7-point Likert scale denoting increasing levels of satisfaction, confidence, or perceived quality without indication of the importance of each item to the respondent.

Models of Student Satisfaction

There are a number of models in the literature that attempt to relate student satisfaction with its antecedents as well as explain impact of satisfaction on other variables. Models vary greatly in terms of the number of variables considered and in terms of the methodologies used to quantify the strength and significance of the relationships. More importantly, the different approaches to modeling satisfaction reveal different underlying conceptions of the nature of customer satisfaction.

Browne et al. (1998) tested the ServQual model using regression analysis in a study that included ServQual dimensions as well as curricular dimensions. Overall satisfaction was measured by three measures: global satisfaction, willingness to recommend, and perceived value of the program. The findings of this study suggest that there are different drivers of overall satisfaction depending on how this concept is presented and operationalized to the respondent. When ServQual dimensions are included next to curricular factors and students are asked to express their satisfaction with a program, ServQual dimension have marginal predictive power; however, those aspects of ServQual that deal with student interaction become more important when students are questioned about their willingness to recommend the program to friends or family; finally, when overall satisfaction is framed as 'value of the investment', the predictive power of curricular dimensions and ServQual factors is much reduced. Elliott and Healy (2001) used regression analysis to find that only five of the 11 factors proposed in the Noel-Levitz's Student Satisfaction Inventory (SSI) were significant in predicting overall satisfaction: centeredness, campus climate, instructional effectiveness, service excellence, and support services. Mai [2005] compared student satisfaction between US and UK students with mixed results. He concluded that US students are in general more satisfied than college students in the UK but only four of the 19 variables used were significant in predicting overall student satisfaction.

Elliott and Shin (2002) used the SSI and analyzed the top 20 educational attributes ranked by students as being the most important to them. Of these, only the following were related to overall satisfaction: 1) excellence of instruction, 2) able to get the desired classes, 3) knowledgeable advisor, 4) knowledgeable faculty, 5) overall quality of instruction, 6) tuition is a worthwhile investment, 5) approachable advisor, 6) safe and secure campus, 7) clear and reasonable requirement for major, 8) availability of advisor, 9) adequate computer labs, 10) fair and unbiased faculty, and 11) access to information. These authors concluded that what students claim are important factors does not necessarily correspond to the drivers of overall satisfaction. For example, factors such as registration process, placement rate, and reasonable graduation time were highly rated in the importance scale but were not significant in predicting overall satisfaction. Conversely, three of the significant factors were actually rated at the bottom of the top twenty factors: ability to get desired classes, availability of advisor, and access to information.

Eom and Wen [2006] used path analysis and found significant correlations between satisfaction and six composite factors: student self-motivation, student learning style, instructor knowledge, instructor feedback, student interactions, and course structure. Alves and Raposo (2007) used structural equation modeling to student satisfaction in Portugal and found significant relationships between seven constructs: institutional image, student expectations, perceived value, perceived quality, student satisfaction, word of mouth, and student loyalty. Student satisfaction is positively correlated with image, student expectations, perceived value and

perceived quality and is a mediating factor influencing student loyalty and word of mouth. Helgesen and Nesset (2007) used a similar approach to study student satisfaction at a university in Norway and found empirical evidence relating service quality, institutional information and guidelines, students' social interactions, satisfaction with facilities, and student commitment to student satisfaction. Student satisfaction has a strong positive influence on student loyalty and on institution reputation, which also impacts positively on loyalty.

While most studies consider satisfaction a one-dimensional variable, a small number of studies are starting to model satisfaction and dissatisfaction as two related but distinct facets of the same concept. DeShields et al. (2005) modeled student satisfaction according to Herzberg's two-factor theory, and split the sample of students in two groups—high satisfaction group and low satisfaction group—to test their model. They found that satisfaction with faculty and with advising act as "satisfiers" while the satisfaction with classrooms seems to be a "dissatisfier". Emery (2006), Petruzzellis et al. (2006), Chen and Lee (2006), apply the Kano model of satisfaction in three different the university settings.

The current study uses the UBEA student satisfaction instrument which embodies a simple approach to measuring satisfaction. All questions are framed in positive terms and importance ratings are not elicited. The instrument incorporates three items that are used as measures of overall satisfaction: meeting expectations, value of the educational investment, and likelihood of recommending the program to a close friend. The methodology employed in this exploratory study is regression analysis on factors that are constructed using factor analysis. The model is depicted in Figure 1.

Insert Figure 1 here

Method

An analysis of determinants of overall student satisfaction was conducted using data collected from 1,212 undergraduate business students at the point of graduation from 2004 to 2008. Student satisfaction data was collected from all graduating seniors as a component of the ongoing program assessment procedures using the EBI's Undergraduate Business Exit Assessment instrument. This survey is currently used by around 150 business schools in the United States collecting data from around 30,000 students annually. The survey includes 13 demographic variables and 66 items that pertain to different aspects of the respondent's experiences as a business student: from satisfaction with courses and faculty, to advising, to facilities, to extra-curricular opportunities, to career services and placement, plus many other aspects.

Upon performing an exploratory analysis of the data it became apparent that not all students answered all questions. Of the 1212 student respondents, 352 answered all the questions while the rest did not answer at least one question. The question arises as to whether these 352 students, herein referred to as the "sample" data, share the same characteristics as those who missed answering at least one question. The 860 students who did not answer at least one question are referred to as the "other" data. Therefore a comparison was made between the "sample" data and the "other" data with respect to these demographics. The first method of comparison was accomplished by creating frequency distribution charts showing the percentage

of respondents in each question's scale value for both groups. This visual examination is followed by a statistical examination.

The frequency distribution graphs, presented in Figure 2, exhibit a remarkably similar demographic profile overall with the possible exception of gender. At first glance, it seems that the proportion of males in the "sample" students is higher than among those who did not answer all questions. Ethnically, white American shows the highest frequency but the two groups have similar distributions. In terms of GPA, it seems that those students who responded to all questions have slightly lower overall GPA than those who missed at least one satisfaction item. The remaining charts show that both groups of students show a high degree of demographic similarity.

Insert Figure 2 here

A statistical comparison between the demographic characteristics of respondents in the "sample" and "other" is presented in Table 1. Note that gender, ethnic group, year of entry in the business program, undergraduate major, plans after graduation, and plans for employment are qualitative variables and the test value is the Chi-square value of the respective contingency tables. The test values of the other variables are the t-values of simple means tests with pooled variance. The results presented show that only the variable Cumulative GPA is significantly different for both groups at $p<0.01$ level of significance. Students with lower GPA put more effort in responding to all questionnaire items.

Insert Table 1 here

Are both the "sample" and "other" groups similar with respect to the 66 satisfaction questions? A t-test for the difference between two means was performed for each of these questions and it was found that of the 66 questions, only four questions had overall means that were significantly different. These four questions and their respective p-values are shown in Table 2. This finding provides assurance that the 352 students who answered every question are essentially similar to the 860 students who did not answer at least one question.

Insert Table 2 here

Results

The data were analyzed using SAS's PROC FACTOR program in order to perform an exploratory factor analysis to identify the factor structure underlying the dataset. The principle axis (principle component) method and the Varimax rotation method were employed. Several exploratory factor analyses were performed to get a handle on determining the number of meaningful factors to retain, as discussed in Hatcher (1994), who enumerates four criteria that should be used to determine how many factors should be retained. In light of these criteria, factor loadings of at least .35 were flagged in the output and it was decided to retain eight factors which have eigenvalues greater than 1. Table 3 lists the eight factors, the variance explained by each factor, the items that loaded on each factor and suggested factor names. Appendix A details the content of all items included in each factor.

The first factor is related to how students felt the business program enhanced their skills and knowledge. Since these items reflect self-reported perceptions of one's own skills and abilities, this factor seems to express one's self-confidence. The second factor relates to satisfaction with grades, accessibility of courses, instructor responsiveness, and satisfaction with instructors presenting concepts relating to the real world, global, social responsibility, ethical and technology issues as well as satisfaction with team experiences, size of classes and classroom quality. This factor is named Curriculum, Instruction, and Classes. Noteworthy is the inclusion of Q009-Satisfaction with the quality of teaching in Finance. One would expect this item to be included in the list for factor 3.

Factor 3 relates specifically to the quality of teaching in the major business areas in the curriculum. Factor 3 is named satisfaction with teaching in subject matter. The fourth factor, named extra-curricular activities and career opportunities, deals with practical experiences, interaction with practitioners, student organization activities, leadership opportunities, access to alumni, and career planning. Factor 5 is narrowly focused in one area, that of advisement. Students were asked questions about advisor availability, knowledge, helpfulness, and interest in student progress. This factor is named advising.

Factor 6, quality of teaching and feedback, revolves around student ratings of the quality of teaching, instructor feedback on assignments and of their satisfaction with the availability of courses in their major. This factor differs from factor 3 in that factor 6 assesses perceived quality of teaching in general rather than satisfaction with the quality of teaching in specific subject matters. Factor 7, computing resources, deals with computing resources, availability as well as remote access, and computer training. Satisfaction with the quality of business classrooms is included both in this factor and in factor 2, which may reflect some difficulty in interpreting the meaning of this question item. Fellow students is the name given to factor 8. This factor deals with how students perceive their academic quality of their colleagues, how satisfied they are with the level of camaraderie, and the ability to work in teams.

Insert Table 3 here

Note that the factor analysis performed herein resulted in a much smaller set of factors than that proposed by the developer of UBEA. Instead of 16 factors, this study found eight factors only. Furthermore, instead of finding 16 items that did not load on any factor, we found that only one item is not part of any of the eight factors found: "How did the quality of teaching in your business courses compare to the quality of teaching in non-business courses on this campus?"

Factor scores for each factor and for each of the 352 respondents in the sample were computed using SAS's PROC FACTOR and these scores were used as predictor variables for overall student satisfaction. Three "bottom line" or "overall satisfaction" questions were asked of each student: 1) To what extent did your undergraduate business program experience fulfill your expectations?; 2) Comparing the expense to the quality of education, rate the value of the investment made in the undergraduate business degree; and 3) How inclined are you to recommend your undergraduate business program to a close friend?

A stepwise regression procedure was performed using SAS. The initial and final results of each regression analysis are presented in Tables 4-6. Table 4 contains the regression analysis of the variable 'Extent of fulfillment of expectations' against the factor scores for each student. The initial model includes all eight factors. The p-values for seven of the eight factors are very

small and significant at the .01 level of significance. The p-value of factor 5, Advising, indicates that this factor is not significant. The adjusted R-square is .5292. Eliminating factor 5 resulted in significance for the remaining seven factors. This is the final model which has an R-square of .5247.

The results of the regression analysis for the item 'Value of the educational investment' are presented in Tables 5. The initial model utilized all eight factors as before. As shown, three predictors are deemed insignificant at the .01 level of significance: factor 3, satisfaction with teaching in subject matter; factor 5, advising; and factor 8, fellow students. When these three factors were removed from the analysis, the final model includes five significant factors and an adjusted R-square that shows little change from the initial model. The five predictors of the value of investment made are: factor 1, self-confidence; factor 2, curriculum, instruction, and classes; factor 4, extra-curricular activities and career opportunities; and factor 7, computing resources.

The regression results for the third item for overall satisfaction, 'Likelihood of recommendation of the business program to a friend' are presented in Table 6. The results of the initial model show that when it comes to recommending the program to a close friend, factors 3 and 5 are deemed insignificant. When these two factors are eliminated, the final model has an adjusted R-square essentially unchanged from the initial model and includes six significant factors: factor 1, self-confidence; factor 2, curriculum, instruction, and classes; factor 4, extra-curricular activities; factor 6, quality of teaching and feedback; factor 7, computing resources; and factor 8, fellow students.

Insert Table 4 here

Insert Table 5 here

Insert Table 6 here

Summary and Discussion

The factor analysis conducted in this study indicates that eight factors (not sixteen) are sufficient to explain the total sample variance, with factor 1, self-confidence, explaining the most variability. As suggested in the literature, it should come as no surprise that seniors who feel a strong sense of self-confidence about their knowledge and skills are generally satisfied with their academic business experience. Therefore, a major goal for business school faculty is to develop a sense of self-confidence in their students, and certainly, a way to accomplish this is to insure that students obtain a strong and effective education in a rich learning environment. In addition to academic endeavors, student accomplishments in course-related projects, internships, service to the community, and leadership experiences should be praised and formally recognized by the program. Furthermore, students should be encouraged to join campus organizations and take pro-active steps in their career planning.

The results of all three regression analysis point to several interesting overall findings. First of all, the signs of all the regression coefficients in the three final models are positive, that is, all variables are positively correlated with overall student satisfaction. This result confirms

other empirical findings indicating that many different factors are important in shaping overall satisfaction. Secondly, it is apparent in all models that student self-confidence (factor 1) has the greatest impact on satisfaction as seen by the magnitude of the regression coefficient of this factor in all three models. The next two factors in terms of magnitude of impact are the quality of teaching in general (factor 6) and extra-curricular and career opportunities (factor 4.) The quality of teaching matters and it seems that students value both extra-curricular activities and assistance with career placement. However, students seem not to relate the quality of teaching of a particular subject matter to general satisfaction with a business program, as evidenced by the low coefficient of factor 3 in the first regression model and the removal of this factor from the two subsequent models.

Finally, it seems that satisfaction with advising does not impact the overall satisfaction with the business program in any of the three forms in which overall satisfaction was measured. The fact that satisfaction with advising does not impact the overall satisfaction with the business program is a significant finding in that most educators and administrators seem to put great emphasis on student advising. For example, Elliott and Shin (2002) reported that, among the 13 highly significant variables that impact overall satisfaction with university performance, three are related to advising: advisor knowledge, approachability, and availability. In contrast, DeShields et al. (2005) suggested that advising may be a hygiene factor, that is, if adequate it will not contribute to quality, but if grossly lacking it will cause dissatisfaction. Is this study's finding in agreement with DeShields et al., that is, is the absence of a meaningful relationship to overall satisfaction an indicator that advising is being performed at a satisfactory level? Perhaps that is the case, but this matter needs further investigation.

Student satisfaction with a program matters both in terms of enhancing the learning process and in terms of ensuring the long-term success of a program. The measurement of student satisfaction and the study of its determining factors are not easy due to the complexity of the concept itself. Should one consider satisfaction alone or satisfaction and dissatisfaction as two separate but intertwined facets? Should one measure satisfaction with the process (i.e., teaching, advising, extra-curricular activities) or with the outcome (i.e., job, advancement, career)? Should satisfaction be measured as a snapshot? When viewed in terms of these broad questions, most instruments designed to assess student satisfaction have limitations. The UBEA instrument provides a wealth of information but it is narrowly focused on the characteristics of a business program. Its standardized questions are well-designed and thoroughly tested but lack open-ended questions. More importantly, this instrument lacks items designed to evaluate the extent of student dissatisfaction. Certainly, administrators and educators have other means (e.g., interviews, focus groups) to gather information from students, alumni, and employers that will help them to design effective educational features or intervene in the current programs offered. For example, it could be highly valuable for a program to collect data about highly-satisfying or highly-dissatisfying academic experiences that a student went through either at the program or elsewhere in the institution.

From the point of view of studying the different academic factors that influence student satisfaction, the UBEA instrument is unparalleled in its detail. It highlights many specific components of teaching and advising, focuses on particular aspects of student services, program features, and even business disciplines. It provides valuable information for institutions and offers the raw material for studying and understanding the relationships between specific factors and overall student satisfaction.

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FIGURE 1. Model of Student Satisfaction

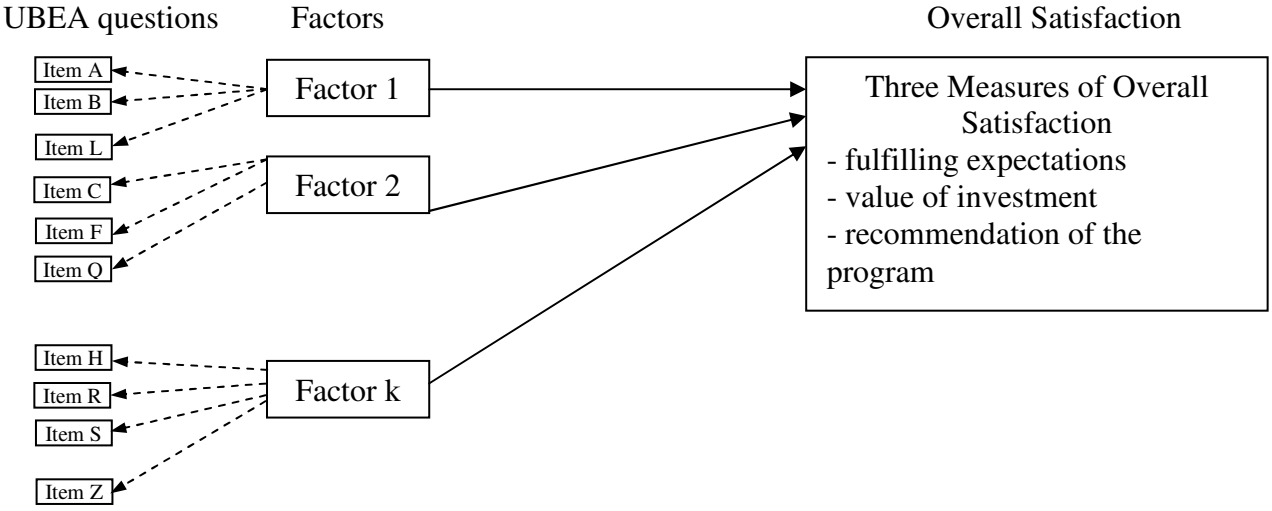

FIGURE 2. Profile of Sample and Non-Sample Cases

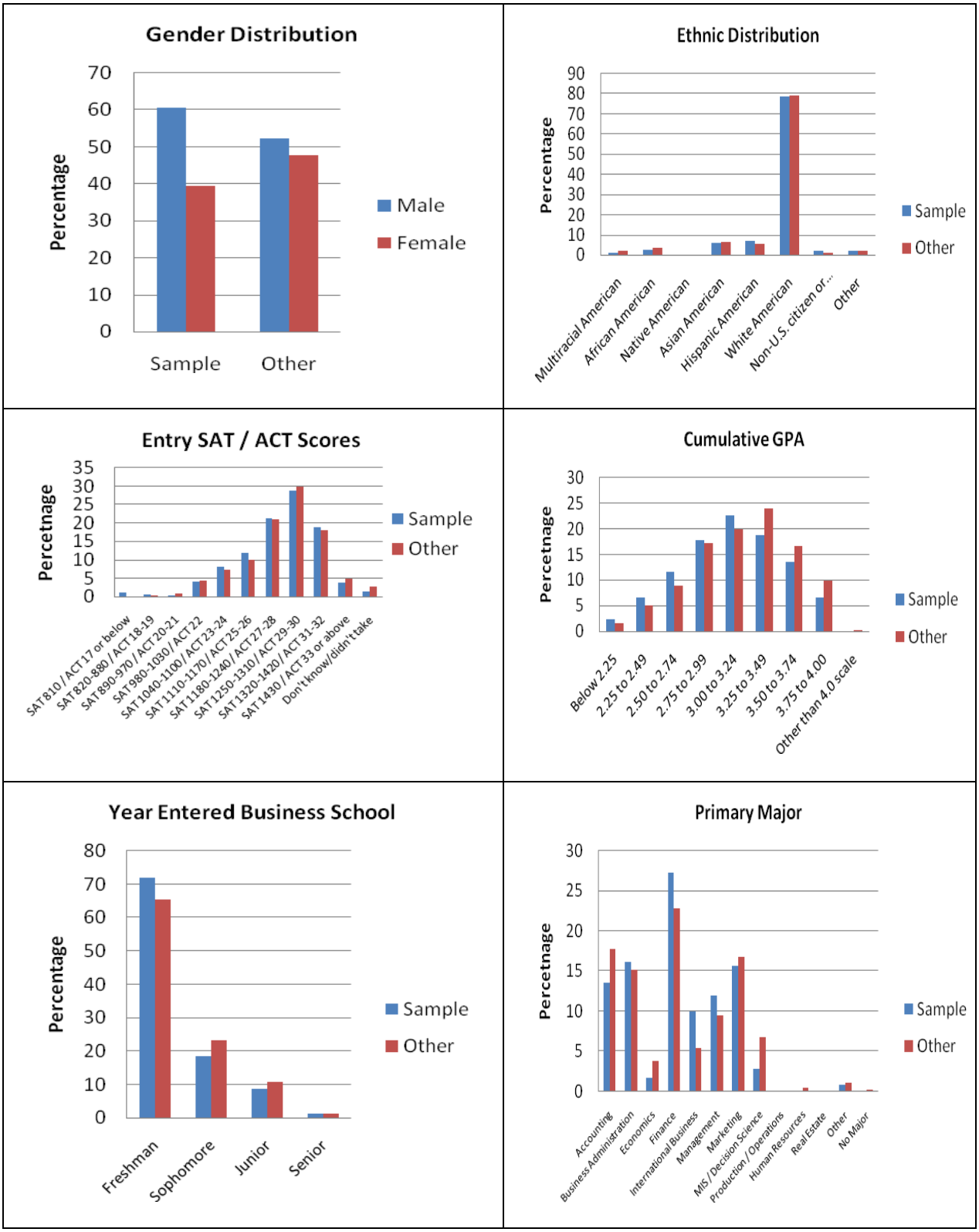

FIGURE 2. Profile of Sample and Non-Sample Cases (Cont'd)

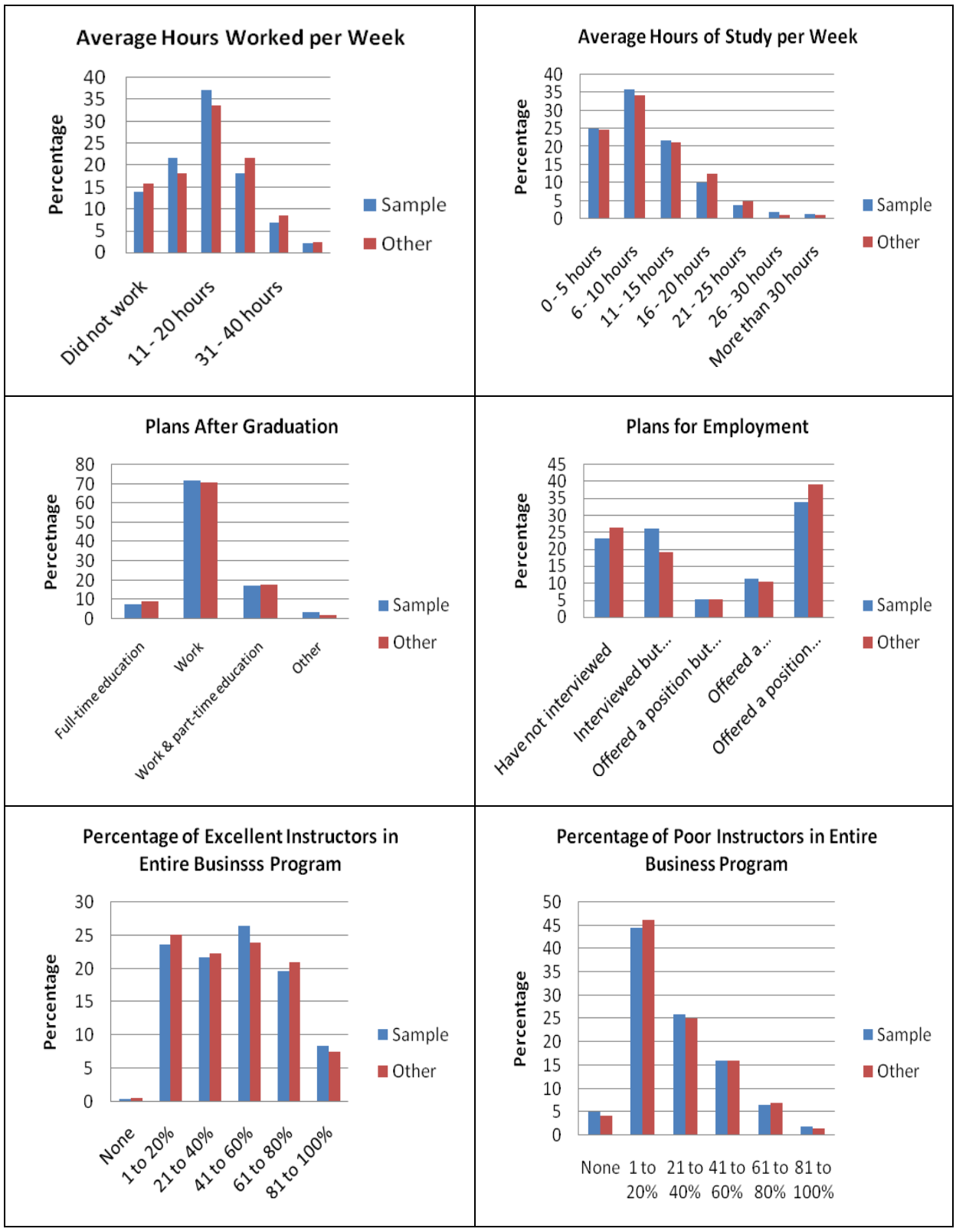

TABLE 1. Statistical Comparison of Demographic Variables of Sample and Non-Sample Cases

Variable Name	Test value	p-value
Gender	0.2315	0.6304
Ethnic group	0.0079	0.9949
SAT/ACT score	-1.4571	0.1453
Cumulative GPA	-2.5844	0.0099
Average number of hours worked per week	-0.8896	0.3739
Average number of hours studied per week	-0.3900	0.6966
Year entered into business school	0.7793	0.8544
Undergraduate major/Area of primary interest	0.5041	0.9978
Plans after graduation	0.8061	0.9376
Plans for employment	0.9226	0.8200
Percentage of excellent business instructors	0.5443	0.5863
Percentage of poor business instructors	0.1207	0.9039

TABLE 2. Statistical Comparison of Satisfaction Items of Sample and Non-Sample Cases

Question	Test value	p-value
Satisfaction with the quality of teaching in business law/legal environment	-3.4371	0.0006
Satisfaction with quality of teaching in human resource management	-4.9965	0.0000
Satisfaction with average size of major courses	-3.0651	0.0022
Satisfaction with quality of business classrooms	-2.7803	0.0055

TABLE 3 – Results from the Factor Analysis

Factors	Variance Explained	Questionnaire items	Factor name and description
Factor 1	8.3264	51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 63	**Self-confidence**: students' confidence in own abilities and skills
Factor 2	7.6972	9, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 30, 31, 32, 40	**Curriculum, instruction, and classes**: satisfaction with coverage of different topics, grading, accessibility and responsiveness of instructors, class sizes
Factor 3	4.8198	6, 7, 8, 10, 11, 12, 13, 14, 15, 16	**Satisfaction with teaching in subject matter**: satisfaction with quality of teaching in specific subjects
Factor 4	4.5386	28, 29, 33, 34, 47, 48, 49, 50	**Extra-curricular activities and career opportunities**: satisfaction with opportunities for practical experiences, student organizations and leadership, and recruiting
Factor 5	4.0102	35, 36, 37, 38	**Advising**: satisfaction with student advising
Factor 6	3.7690	1, 2, 3, 4, 39	**Quality of teaching and feedback**: perceived quality of teaching and feedback from instructors in general
Factor 7	2.7085	40, 41, 42, 43	**Computing resources**: satisfaction with availability, training, and facilities
Factor 8	1.3478	44, 45, 46	**Fellow students**: satisfaction with academic quality of the student body and student interactions
Total	37.2175		

TABLE 4 – Results from Regression Analysis – Extent of Fulfillment of Expectations

Initial model	**Source**	**DF**	**Sum of squares**	**Mean square**	**F value**	**Pr > F**
	Model	8	322.56889	40.32111	49.90	< .0001
	Error	340	274.74343	0.80807	$\mathbf{R^2}$ =	0.5400
	Total	348	597.31231		**Adj.** $\mathbf{R^2}$ =	0.5292
	Variable	**DF**	**Coefficient**	**Standard error**	**t value**	**Pr > t**
	Intercept	1	4.75382	0.04812	98.78	< .0001
	Factor 1	1	0.58897	0.04905	12.01	< .0001
	Factor 2	1	0.20966	0.04992	4.20	< .0001
	Factor 3	1	0.18627	0.05295	3.52	0.0005
	Factor 4	1	0.48262	0.05064	9.53	< .0001
	Factor 5	1	0.10303	0.04968	2.07	0.0388
	Factor 6	1	0.43132	0.05127	8.41	< .0001
	Factor 7	1	0.25368	0.05307	4.78	< .0001
	Factor 8	1	0.18511	0.05260	3.52	0.0005
Final model	**Source**	**DF**	**Sum of squares**	**Mean square**	**F value**	**Pr > F**
	Model	7	319.09314	45.58473	55.87	< .0001
	Error	341	278.21928	0.81589	$\mathbf{R^2}$ =	.5342
	Total	348	597.31232		**Adj.** $\mathbf{R^2}$ =	.5247
	Variable	**DF**	**Coefficient**	**Standard error**	**t value**	**Pr > t**
	Intercept	1	4.75303	0.04836	98.29	< .0001
	Factor 1	1	0.58906	0.04929	11.95	< .0001
	Factor 2	1	0.20966	0.05016	4.18	< .0001
	Factor 3	1	0.18814	0.05319	3.54	0 .0003
	Factor 4	1	0.48273	0.05088	9.49	< .0001
	Factor 6	1	0.43292	0.05151	8.40	< .0001
	Factor 7	1	0.25420	0.05333	4.77	< .0001
	Factor 8	1	0.18432	0.05285	3.49	0.0006

TABLE 5 – Results from Regression Analysis – Value of the Educational Investment

Initial model	**Source**	**DF**	**Sum of squares**	**Mean square**	**F value**	**Pr > F**
	Model	8	271.61346	33.95168	28.91	< .0001
	Error	343	402.74733	1.17419	**R^2** =	0.4028
	Total	351	674.36080		**Adj. R^2** =	0.3888
	Variable	**DF**	**Coefficient**	**Standard error**	**t value**	**Pr > t**
	Intercept	1	5.04261	0.05776	87.31	< .0001
	Factor 1	1	0.52919	0.05907	8.96	< .0001
	Factor 2	1	0.29888	0.06010	4.97	< .0001
	Factor 3	1	-0.01134	0.06328	-0.18	0.8579
	Factor 4	1	0.32692	0.06067	5.39	< .0001
	Factor 5	1	-0.03794	0.05967	-0.64	0.5253
	Factor 6	1	0.47362	0.06162	7.69	< .0001
	Factor 7	1	0.30969	0.06380	4.85	< .0001
	Factor 8	1	0.10431	0.06335	1.65	0.1006
Final model	**Source**	**DF**	**Sum of squares**	**Mean square**	**F value**	**Pr > F**
	Model	5	267.88587	53.57717	45.61	< .0001
	Error	346	406.47492	1.17478	**R^2** =	.3972
	Total	351	674.36080		**Adj. R^2** =	.3885
	Variable	**DF**	**Coefficient**	**Standard error**	**t value**	**Pr > t**
	Intercept	1	5.04261	0.05777	87.29	< .0001
	Factor 1	1	0.52863	0.05907	8.95	< .0001
	Factor 2	1	0.29947	0.06006	4.99	< .0001
	Factor 4	1	0.32658	0.06067	5.38	< .0001
	Factor 6	1	0.47295	0.06163	7.67	< .0001
	Factor 7	1	0.31122	0.06379	4.88	< .0001

TABLE 6 – Results from Regression Analysis – Likelihood of Recommendation to a Friend

Initial model	**Source**	**DF**	**Sum of squares**	**Mean square**	**F value**	**Pr > F**
	Model	8	328.39291	41.04911	36.33	< .0001
	Error	342	386.46749	1.16002	**R^2** =	0.4594
	Total	350	714.86040		**Adj. R^2** =	0.4467
	Variable	**DF**	**Coefficient**	**Standard error**	**t value**	**Pr > t**
	Intercept	1	5.02248	0.05674	88.51	< .0001
	Factor 1	1	0.60886	0.05795	10.51	< .0001
	Factor 2	1	0.30952	0.05896	5.25	< .0001
	Factor 3	1	0.10481	0.06214	1.69	0 .0926
	Factor 4	1	0.44387	0.05958	7.45	< .0001
	Factor 5	1	0.01604	0.05870	0.27	0.7849
	Factor 6	1	0.43095	0.06048	7.13	< .0001
	Factor 7	1	0.28272	0.06298	4.49	< .0001
	Factor 8	1	0.16387	0.06227	2.63	0.0089
Final model	**Source**	**DF**	**Sum of squares**	**Mean square**	**F value**	**Pr > F**
	Model	6	325.05795	54.17633	47.81	< .0001
	Error	344	389.80245	1.13315	**R^2** =	.4547
	Total	350	714.86040		**Adj. R^2** =	.4452
	Variable	**DF**	**Coefficient**	**Standard error**	**t value**	**Pr > t**
	Intercept	1	5.02232	0.05682	88.39	< .0001
	Factor 1	1	0.61071	0.05802	10.53	< .0001
	Factor 2	1	0.31364	0.05899	5.32	< .0001
	Factor 4	1	0.44624	0.05964	7.48	< .0001
	Factor 6	1	0.43180	0.06056	7.13	< .0001
	Factor 7	1	0.28447	0.06305	4.51	< .0001
	Factor 8	1	0.16355	0.06235	2.62	0.0091

APPENDIX A
Results of the Factor Analysis

Factor	Questionnaire items
1	Q051 - To what extent did the Business program enhance your: Presentation skills
	Q052 - To what extent did the Business program enhance your: Writing skills
	Q053 - To what extent did the Business program enhance your: Ability to work in teams
	Q054 - To what extent did the Business program enhance your: Ability to use technology
	Q055 - To what extent did the Business program enhance your: Ability to manage technology
	Q056 - To what extent did the Business program enhance your: Ability to be an effective manager
	Q057 - To what extent did the Business program enhance your: Ability to be an effective leader
	Q058 - To what extent did the Business program enhance your: Ability to think critically
	Q059 - To what extent did the Business program enhance your: Ability to define problems
	Q060 - To what extent did the Business program enhance your: Ability to solve problems
	Q061 - To what extent did the Business program enhance your: Ability to analyze and interpret data
	Q062 - How academically challenging were Business courses in comparison to Non-Business courses on this campus
2	Q009 - Satisfaction with quality of teaching in Finance
	Q017 - Satisfaction with Grades in required courses accurately reflecting students' level of performance
	Q018 - Satisfaction with Grades in major courses accurately reflecting students' level of performance
	Q019 - Satisfaction with Accessibility of required course instructors outside of class
	Q020 - Satisfaction with Accessibility of major course instructors outside of class
	Q021 - Satisfaction with Required course instructor's responsiveness to student concerns
	Q022 - Satisfaction with Major course instructor's responsiveness to student concerns
	Q023 - Satisfaction with Required course instructors relating concepts to the real world
	Q024 - Satisfaction with Business curriculum instructors presenting a global perspective
	Q025 - Satisfaction with Business curriculum instructors presenting social responsibility issues
	Q026 - Satisfaction with Business curriculum instructors presenting ethical issues
	Q027 - Satisfaction with Business curriculum instructors presenting technology issues
	Q030 - Satisfaction with Value derived from team experiences
	Q031 - Satisfaction with Average size of required courses
	Q032 - Satisfaction with Average size of major courses
	Q040 - Satisfaction with Quality of Business classrooms
3	Q006 - Satisfaction with quality of teaching in Business Policy / Strategy
	Q007 - Satisfaction with quality of teaching in Business Law / Legal Environment
	Q008 - Satisfaction with quality of teaching in Economics / Business Economics
	Q010 - Satisfaction with quality of teaching in Human Resources Management
	Q011- Satisfaction with quality of teaching in Information Systems
	Q012 - Satisfaction with quality of teaching in International Business
	Q013 - Satisfaction with quality of teaching in Management / Organizational Behavior
	Q014 - Satisfaction with quality of teaching in Marketing
	Q015 - Satisfaction with quality of teaching in Operations
	Q016 - Satisfaction with quality of teaching in Statistics

4	Q028 - Satisfaction with Opportunities for practical experiences within the Undergraduate curriculum Q029 - Satisfaction with Opportunities for interaction with practitioners Q033 - Satisfaction with Student organization activities in the Business program Q034 - Satisfaction with Leadership opportunities in Business program's extracurricular activities Q047 - Satisfaction with Assistance in preparation for permanent job search Q048 - Satisfaction with Access to school's alumni to cultivate career opportunities Q049 - Satisfaction with Satisfaction with Number of companies recruiting on campus Q050 - Satisfaction with Satisfaction with Quality of companies recruiting on campus

Factor	**Questionnaire items**
5	Q035 - Satisfaction with Advisor's availability Q036 - Satisfaction with Advisor's knowledge of requirements Q037 - Satisfaction with Advisor's helpfulness of recommendations Q038 - Satisfaction with Advisor's interest in students' progress
6	Q001 - Quality of teaching in your required courses Q002 - Quality of teaching in your major courses Q003 - Quality of feedback on assignments (other than grades) received from instructors in required courses Q004 - Quality of feedback on assignments (other than grades) received from instructors in major courses Q039 - Satisfaction with Availability of courses in students' major
7	Q040 - Satisfaction with Quality of Business classrooms Q041 - Satisfaction with Availability of Business School's computers Q042 - Satisfaction with Remote access to Business School's computer network Q043 - Satisfaction with Training to utilize Business School's computing resources
8	Q044 - Satisfaction with characteristics of your fellow students: Academic quality Q045 - Satisfaction with characteristics of your fellow students: Ability to work in teams Q046 - Satisfaction with characteristics of your fellow students: Level of camaraderie

Important factors in designing a master of business administration program: the results of a survey

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ABSTRACT

This paper presents the findings from a survey created to investigate the factors that may be important in designing a Masters of Business Administration (MBA) program, and the interest in a prospective MBA program at the University of Montevallo. The findings indicate that the demand for the MBA program is strong, and most respondents believe the degree would help them in their current career path. The paper also reports respondents' views concerning on-line versus traditional classroom based learning; their preferences in terms of time of day, day of the week, and location for classes; and the importance of various qualitative factors. The study found that convenience, cost and flexibility were key concerns for most respondents.

Keywords**:** MBA, New Program Development, On-line Courses, Survey.

INTRODUCTION

The Master of Business Administration (MBA) degree is extremely popular among graduate programs in the eyes of students, corporate recruiters, and educational institutions due to its wide-ranging advantages. An MBA is a degree earned after completing one to two years (or the equivalent) of graduate-level study that demonstrates competency in the theories and proven practices used in business management. It is generally agreed that the MBA is the most recognized graduate degree because it is a degree that tends to have value in every type of organization (Gillette, 2008). According to the most recent *MBA Alumni Perspectives Survey* (Schoenfeld, 2008b) not only do MBA's report much higher salaries than they earned before gaining the degree, but they also report increased job satisfaction and believe the degree continues to be valuable to their career progression. The degree consistently shows an excellent return on investment for most recipients while improving their employability and professional prospects. According to recent figures published by Admissions Consultants (2008), the average salaries of MBA graduates from the top 15 graduate schools (based on U.S. News & World Report's 2008 Business School Rankings) range from $104,000 - $145,000. Given the many advantages of the degree it is not surprising that the demand for the degree and the number of programs being offered is increasing.

The current economic downturn appears to be fueling the growth of MBA programs. The Graduate Management Admissions Council (GMAC) has surveyed MBA growth annually since 2000. In their most recent report, the GMAC (2008) noted consistent increases in MBA registrations during the last four years with a nearly 12% increase worldwide from June 2007 through June 2008. Based on test-taking patterns, the GMAC predicts that the highest level of growth in application volume may occur in 2010, after which a slowdown is likely to begin" (2008, p. 3). The president and CEO of GMAC was recently quoted saying that "Going to business school is one of the best ways to improve your marketability and expand your options anytime – but especially in this challenging economic climate." He went on to say that the "dramatic increase in applications….is a sure sign that people recognize the value of investing in an MBA." (PR Newswire, 2008). The demand for the MBA degree proves strong despite the slowdown in economic growth worldwide (Murray, 2008). Although MBA programs have become more common at foreign universities, many foreign students are still drawn to programs in the U.S. because these programs are less theoretical and far more practical (Kever, 2008).

Another factor contributing to the popularity of the degree is that members of the huge millennial generation who are just beginning to gain undergraduate degrees demonstrate an exceptional interest in higher education. The millennial generation refers to the generally optimistic, talented, well-educated, collaborative, connected, open-minded, and achievement oriented generation born between 1983 and 2000. They are products of a baby bulge, numbering 80 million in the U.S. making them the largest generation since the baby boomers. They began flowing into MBA programs in 2007. Although these students are known for being highly talented, they are also known for requiring high maintenance. They represent the trophy children of doting parents, and both they and their helicopter parents who continue to hover over them expect programs to offer them a lot of hand-holding. Many schools began altering their programs by having advisors meet with them more often, offering virtual office hours, offering custom-tailored MBAs, using blogs, and offering specialized environmentally focused programs because so many of these students want to enroll in programs that will enable them to make a social difference in the world (Gloeckler, 2008). According to surveys (Martin and Tulgan, 2001) and (Bell, Connell, Hamilton, Motii, and Sanders, 2008), large numbers of undergraduate students intend to gain graduate degrees. Given the high value this large generation places on higher education, it is quite likely that they will continue to pursue the MBA degree in record numbers.

The purpose of this paper is to summarize the results of a survey concerning the interest in having the Stephens College of Business at the University of Montevallo offer an MBA program. It extends a preliminary investigation that was reported in this journal (Bell, MacPherson and Motii, 2008) that indicated a strong need for this program.

The University of Montevallo (UM) is a small public liberal arts university located in Central Alabama approximately 35 miles south of Birmingham. The Stephens College of Business is a relatively small college (fewer than 400 undergraduate students) that is accredited by AACSB International. UM's legislatively mandated mission is

> "*to provide students from throughout the state an affordable, geographically accessible 'small college' public higher educational experience of high quality, with a strong*

emphasis on undergraduate liberal studies and with professional programs supported by a broad base of arts and sciences, designed for the intellectual and personal growth in the pursuit of meaningful employment and responsible informed citizenship."

UM is known for providing students with a high quality education in small classrooms taught mostly by faculty with doctoral or equivalent terminal degrees. In brief, it provides students with an educational experience similar to private schools at a public school price.

To evaluate the level of interest and characteristics of a prospective MBA program at the University of Montevallo, the Stephens College of Business posted an icon labeled "MBA Survey" on the University of Montevallo homepage from June to August 2008. The icon was a hotlink that led to an extensive survey concerning respondents' backgrounds, interest in an MBA program, and characteristics they would prefer in a prospective MBA program offered at UM. SurveyMonkey, an external survey site, was used to deliver, collect, and provide basic descriptive statistics. The questionnaire consisted of 22 objective questions with the opportunity to provide additional narrative responses. A total of 402 respondents took the survey and 350 completed all parts or 87%.

CHARACTERISTICS OF RESPONDENTS

Several of the survey questions were designed to provide background information on demographic and other characteristics of the respondents. Accordingly, questions were posed concerning the age, experience, geographic location of residence, primary industry of employment, and information concerning respondents' writing and computer skills.

Most respondents were relatively young with limited managerial or supervisory experience. The ages and experience of respondents are summarized in Figures 1 and 2. Sixty-two percent were under 30, and 46% had either no experience or less than one year of experience in a managerial role. This indicates that most of the respondents were either still in school or very recent graduates. Another 22% were between 31 and 40, and 29% had between two and five years of experience. Therefore, 83% of respondents were under 40 years of age, and 75% had five years or less experience in a managerial role. Only 16% were over 40 years of age with 13% between 41 and 50, and only 3% over 50 years of age. Only one-fourth of respondents had over 5 years of professional experience with 14% having between 6 and 10 years, 5% having between 11 and 15 years, and only 6% having more than 15 years experience. The young age and limited experience of respondents will need to be considered in interpreting survey data in regard to the desired characteristics of a prospective MBA program as this could result in a response bias.

Figure 1
Age of Respondents

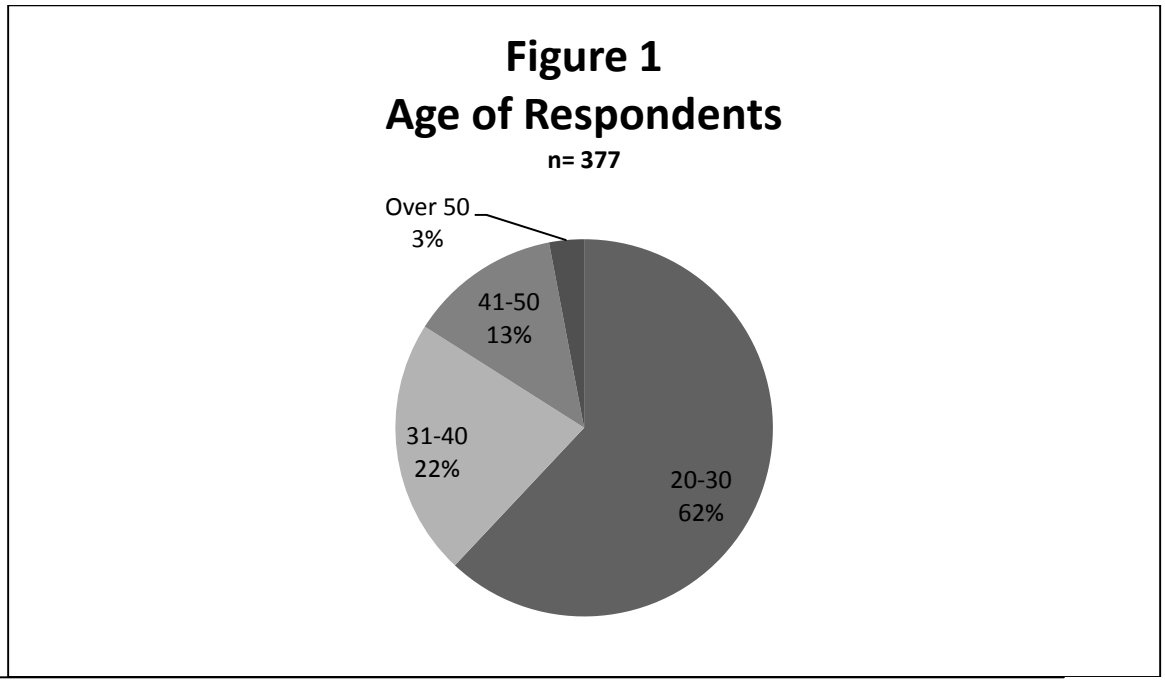
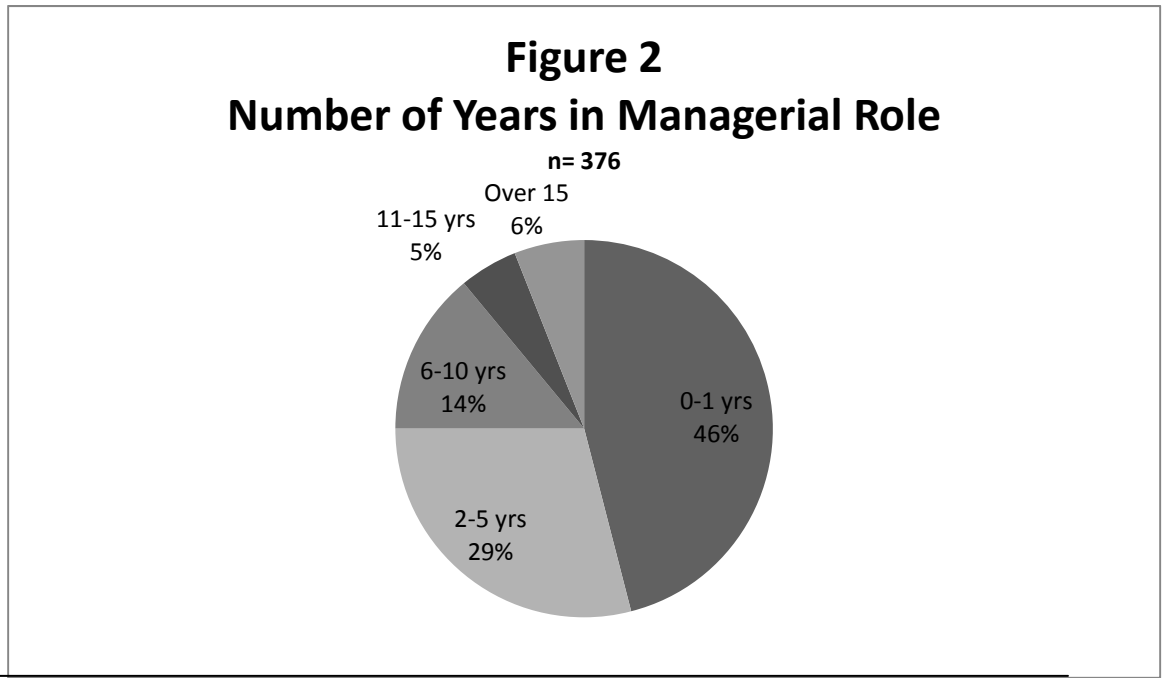
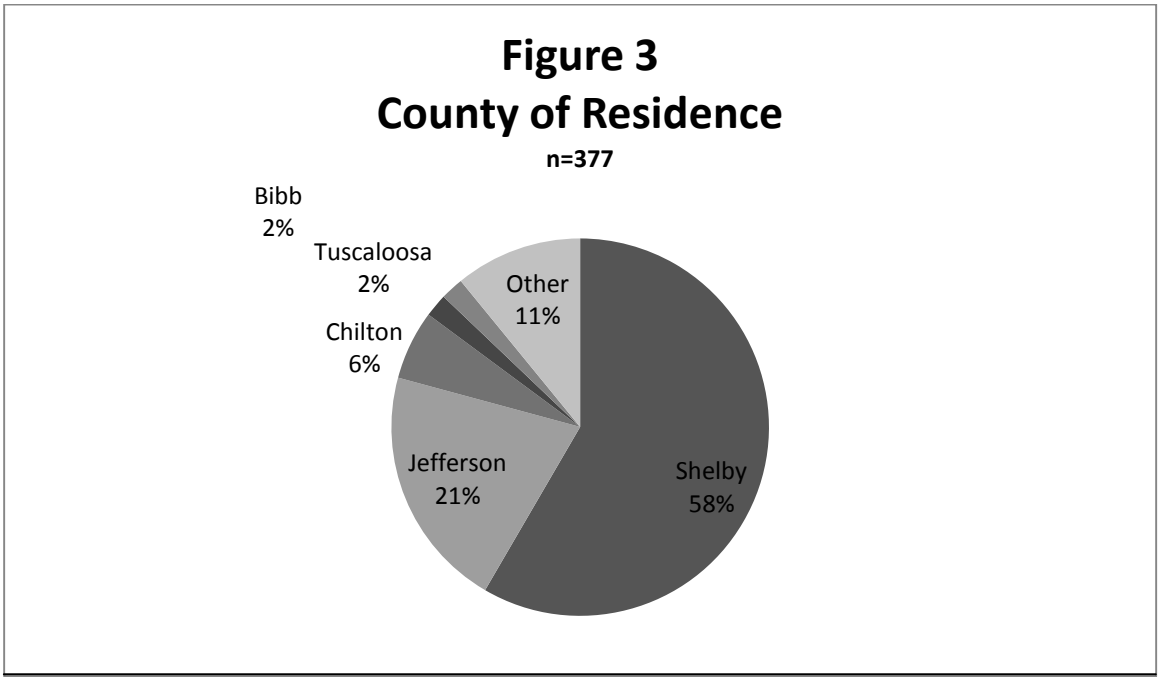


Figure 2
Number of Years in Managerial Role



Despite the fact that the survey was administered on the Internet which is available internationally, the overwhelming majority (89%) of respondents resided near Montevallo, Alabama. This is not surprising given the unique mission of UM to provide students from Alabama a "geographically accessible" small college experience. As illustrated in Figure 3, most respondents (58%) were from Shelby County where Montevallo is located, and over one-fifth (21%) were from Jefferson County directly north of Shelby County where Birmingham and much of the state's population is located. Approximately one-fifth came either from another bordering county (10%), and only 11% reported living in another area. These findings indicate

that most of the respondents live within commuting distance from Montevallo since all of these locations are within less than a one hour drive from the campus. This fact may bias the findings toward classroom instruction over on-line instruction.



Respondents reported working in a wide range of industries. This information is summarized in Table 1. Although no industry dominated, the largest number of respondents (37%) worked primarily in the financial services industry. This is not surprising considering that Birmingham, Alabama is a major banking center second only to Charlotte, North Carolina in the South. At the end of 2006, the city employed nearly 40,000 in the financial services industry (Birmingham Regional Chamber of Commerce 2009). In 2006 Regions Financial Corporation merged with AmSouth making it one of the nation's largest bank holding companies with approximately $144 billion in assets (Regions, 2009). Although Birmingham ranks 48th in the nation in terms of population, the city ranks seventh in the nation in terms of banking assets.

Table 1

Please indicate in which sector(s) of the business world your organization operates.

	Primary	**Secondary**	**Related**	**Number**
Financial Services	37% (118)	9% (29)	14% (46)	192
Marketing Services	23% (72)	21% (67)	11% (34)	172
Community Development	15% (47)	14% (45)	10% (32)	122
Manufacturing/Production	12% (39)	8% (26)	10% (33)	97
Medical Services	11% (35)	7% (21)	9% (30)	83
Foundation/Association Mgmt	8% (28)	11% (35)	7% (23)	86
Construction Services	8% (26)	6% (20)	14% (44)	90
Food Services	7% (24)	7% (21)	8% (26)	70
Engineering Services	7% (21)	9% (29)	11% (34)	82
Faith Based Leadership	5% (15)	5% (15)	9% (29)	59

Arts/Music Management	4% (13)	1% (16)	12% (38)	64

The other main industries where respondents work included marketing services (23%), community development (15%), manufacturing/production (12%), and medical services (11%). Although Birmingham is a major community for health care services with the University of Alabama at Birmingham (UAB) ranking third in the nation, behind the Mayo Clinic and Massachusetts General (Birmingham Regional Chamber of Commerce 2009), only about one in ten respondents reported working primarily in this industry. This may be explained by the fact that UAB also offers several MBA programs and provides tuition discounts to their employees. Additionally, since UAB is so well-known among the medical community in the area, those employed primarily in the medical industry may tend to look first to UAB for an MBA program.

It appears that a significant number of respondents, ranging from 4% to 37%, worked in one of the eleven categories listed on the questionnaire. These findings indicate that a general rather than a specialized MBA program would have the best chance of success at a small university like the University of Montevallo.

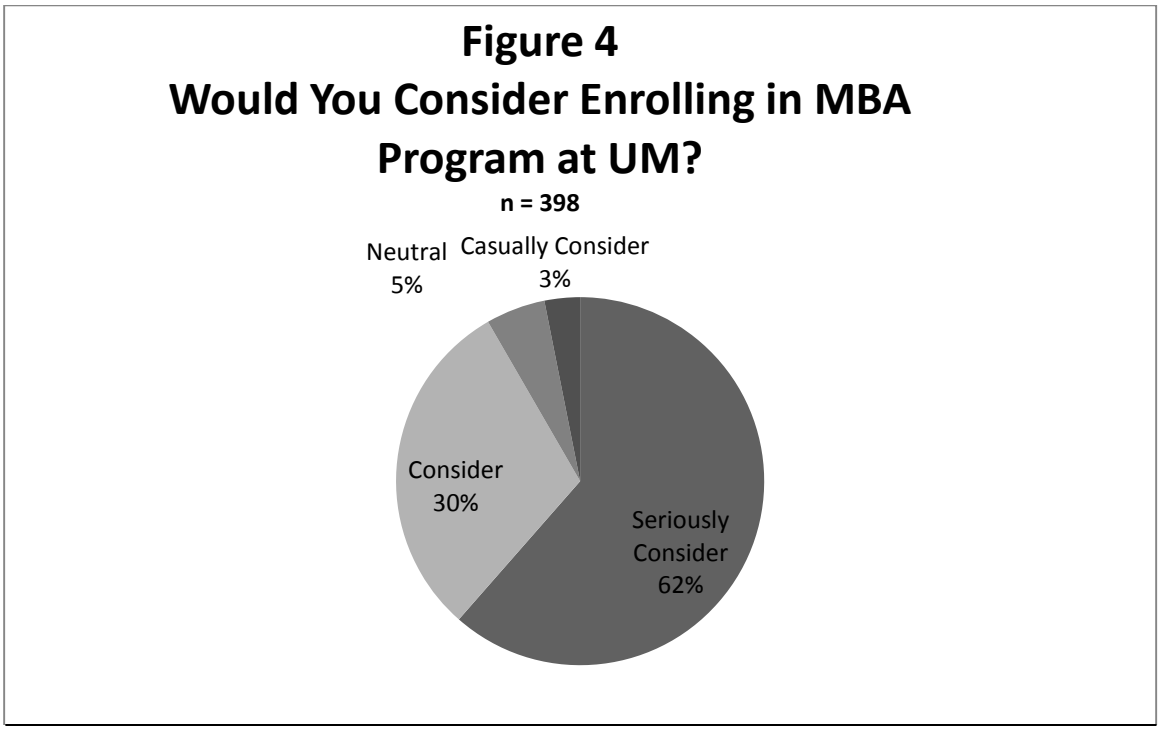
Finally, the respondents were queried about their writing and computer skills. Most respondents (85%) said they are usually confident concerning their ability to present their thoughts and ideas in writing, and the other 15% said they are sometimes confident in these abilities. Less than one percent of respondents were not confident in their writing abilities. All respondents reported being confident (90%) or somewhat confident (10%) about their computer skills, use of email, attaching, uploading, downloading files, using chat or other discussion boards, and no respondents lacked confidence in these computer related abilities. Furthermore, nearly all respondents (99%) said they have consistent and convenient access to a computer, such as a PC running Windows XP or higher or an Apple computer running OS 10 or higher. These findings indicate that nearly all respondents had the basic background and equipment needed for pursuing on-line coursework.

VALUE OF THE MBA DEGREE

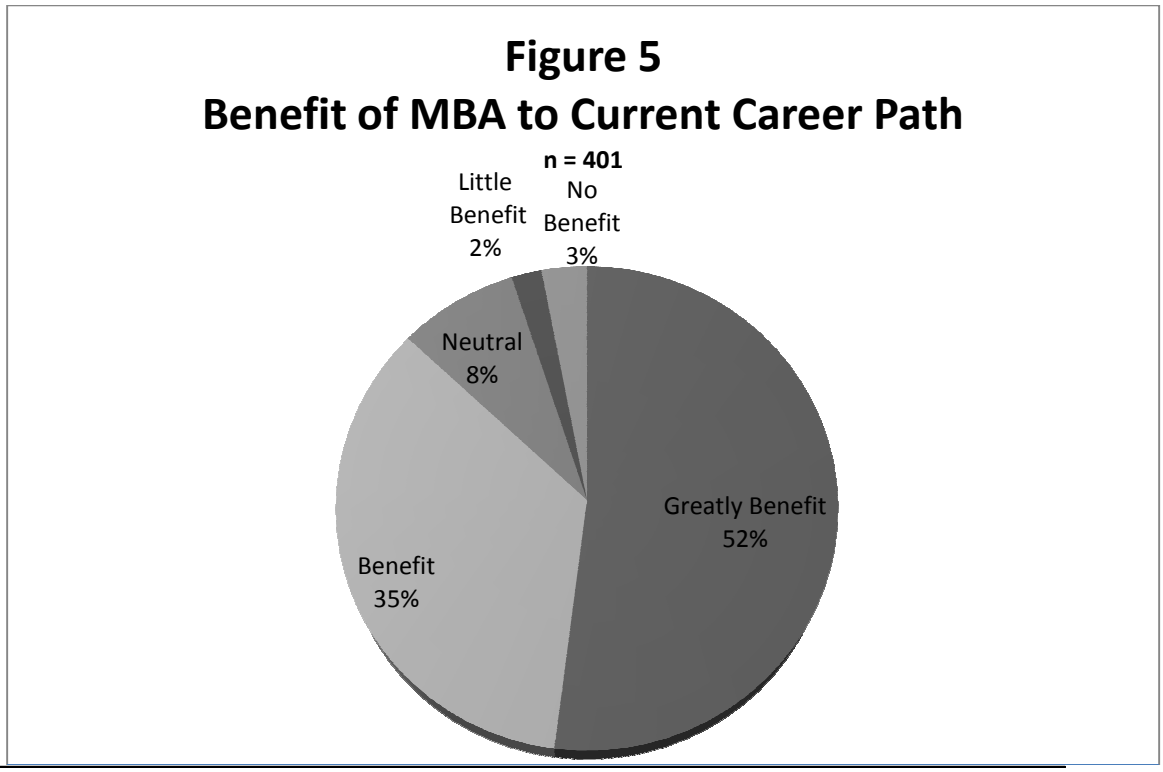
Several questions were asked to help understand whether or not respondents would be interested in an MBA program at UM and how valuable they considered the MBA. Survey findings indicate that most respondents were very interested in pursuing an MBA at UM Both respondents and their employers appear to value the MBA and they not only think that they would benefit from an MBA degree but believe that their co-workers would benefit from the degree as well.

Nearly all respondents completing the questionnaire said they would consider enrolling in an MBA program at the University of Montevallo. Nearly two-thirds (62%) said they would seriously consider and nearly one-third (30%) said they would consider enrolling in an MBA program at UM. Only 5% indicated a neutral position.

Figure 4
Would You Consider Enrolling in MBA Program at UM?



The findings support the perceived value of the MBA degree. As illustrated in Figure 5, the majority (87%) of respondents indicated that their current career path would benefit or greatly benefit from an MBA with 52% reporting that they would greatly benefit from an MBA, and an additional 35% said their career path would benefit from the degree. Only 3% said this degree offered no benefit to their current career path. Furthermore, 93% said that one or more of their co-workers in their organization would benefit from an MBA degree. It appears that the employers of these respondents also value the MBA degree because nearly half reported that it was likely (23%) or very likely (26%) that their current employer would help pay for them obtaining the degree. Still it should be noted that it would be reasonable to assume that people who would notice an icon concerning an MBA survey on the UM homepage would follow that hotlink because of having at least some interest in an MBA. Therefore, it is expected that there is a response bias.



PREFERRED CHARACTERISTICS OF THE PROGRAM

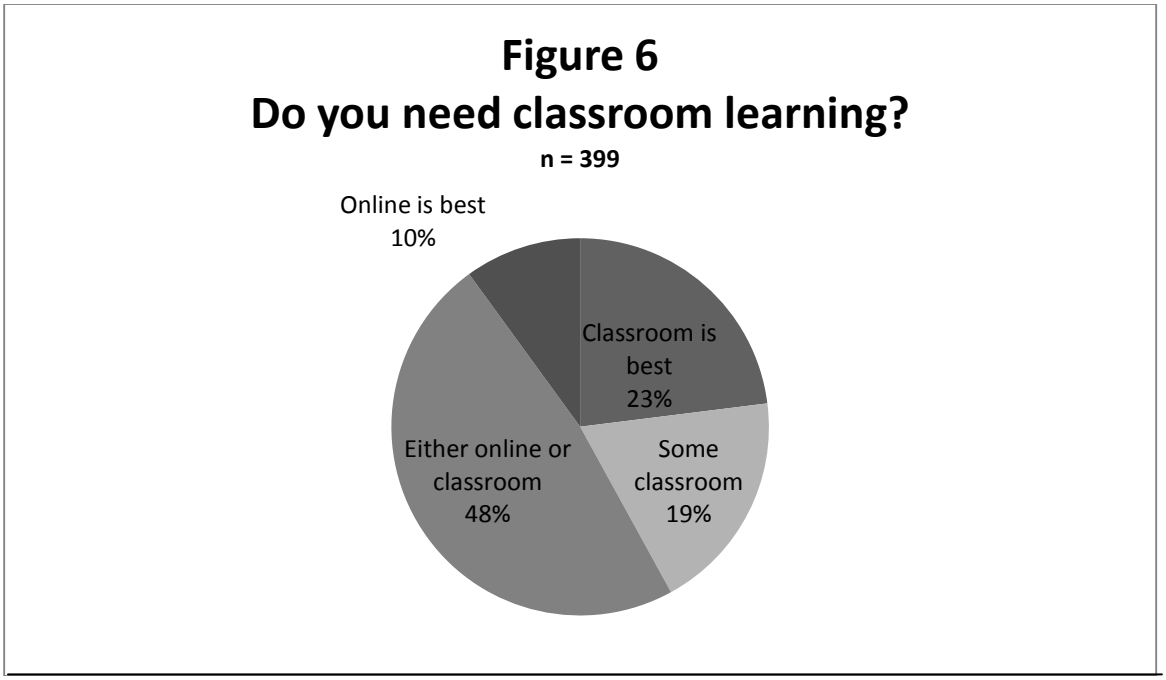
Since the Stephens College of Business would be starting a new program, the most enlightening responses were in reference to the preferred characteristics of the program. Respondents were generally receptive to on-line learning courses. Not requiring previous work experience for entrance into the program was also recommended. They expressed definite preferences regarding the day and time of course offerings, flexibility, cost, length, location, and skills developed by the program.

Given the fact that 75% of respondents had five years or less experience in a managerial role and nearly half (46%) had one year or less experience, it is not surprising that most said it would not make a difference to them if other students in their courses would have significant work experience. Specifically, 72% said it did not make a difference, but over one-fourth (28%) said it did make a difference. Many of the narrative responses to this question indicated that they thought a diversity of backgrounds in the classroom would be best, for example one wrote "a variety of backgrounds will aid in discussion and learning." Some openly admitted they thought limited experience would be acceptable because they had limited experience, like the student who wrote "most students working towards a master's would only have experience in entry level positions or their career growth has been limited because they do not have this degree yet." Still others thought the quality of learning would definitely be enriched by having students with experience in the program, like the student who wrote "I believe experience gives a truer knowledge of business industry and allows you to better understand the curriculum for that field of study."

Most of the respondents were open to either on-line or classroom instruction. Exactly half of the respondents reported having taken training on-line in the past, and over a third (37%) had taken a college course on-line. The narrative comments concerning on-line instruction were mostly very favorable. For instance, one student wrote: "I prefer it over the classroom. There's a lot of lost time in the traditional classroom setting." Several liked the flexibility of on-line instruction, like the student who wrote that it was "great because there were no time constraints", and another who wrote that it "gave the flexibility to devote the time when possible". Still others commented that it was "boring", "hated it", "no interaction", and one who summed it up saying "I liked the flexibility, but missed the interaction".

Despite the convenience and flexibility of on-line instruction, most students believe a classroom experience is superior for effective learning. When asked "Do you learn best by frequently interacting with other students and your instructor?" the majority (59%) said usually, another 39% said sometimes, and only 3% said rarely. However, even though most indicated that they tend to learn best in a traditional classroom setting it is not critical for most.

As illustrated in Figure 6, respondents were somewhat divided on their need for a classroom learning experience. Nearly half (48%) said either on-line or classroom learning is fine. Nearly one-fourth (23%) said classroom learning is best for them and another 19% thought some classroom learning was needed. Interestingly, 10% reported that they thought that on-line is best.



The narrative responses to this question helped clarify the findings. Some respondents clearly thought on-line programs are best, like the one who wrote "I learn best by researching myself and then expressing it in writing. I also learn best with hands on experience such as doing homework with formulas instead of watching a professor do statistics from the board." Another wrote "I believe offering access to on-line classes would be beneficial for the mode of our lifestyles. The traditional classrooms are a thing of the past." Those who favored on-line or a combination of on-line and classroom learning tended to do so because of the convenience, as

expressed by the student who wrote "classroom learning can be a great way for students to learn, yet the cost of travel and time may stop a student from enrolling in the program." A few respondents were concerned about the quality of an on-line program like the one who wrote "There are a number of Internet based MBA programs that are not very well respected in the real business world." Another summarized this sentiment writing "I don't want a patty cake diploma."

The questionnaire probed further by asking "In choosing an MBA program, would offering a significant portion of the program on-line make a difference in your decision?" Half of the respondents (51%) said it would make a huge difference, and another 37% said it would make some difference. Only 13% said that it did not matter. The difference for most was that on-line was the most convenient or the only way they could conceivably pursue an MBA, like the one who wrote "Commuting from Florida is not practical." Similarly another respondent wrote "I currently work 40 hours a week and have a small child so yes, on-line learning would greatly help me to achieve my goal of earning an MBA." For others, the difference was unfavorable to the on-line forum, like the respondent who wrote "How can you evaluate the qualifications (true quality) of an individual on-line?"

Many of the respondents appear to be very busy individuals who would need to fit time for classes in by juggling the demands of working and raising a family. When asked "Do you have 10-20 hours per week for studying and is your schedule fairly flexible?" most respondents (57%) said usually, and another 38% said sometimes. Only 6% said they rarely had this time or a flexible schedule. It appears that a part-time MBA program would be the only practical alternative for most of the respondents to this survey.

We asked respondents to rate the importance of a number of issues regarding the MBA program. Their responses are summarized in Table 2 arranged by the issues respondents ranked very important.

Table 2

Please rate the importance of the following issues.

Issue	Very Important	Important	Somewhat Important	Not Important
Day & time of course offerings	75%	19%	5%	1%
Flexibility of degree program	68%	28%	4%	0%
Cost of degree program	65%	25%	8%	2%
Length of degree program	60%	30%	9%	0%
Location of course offerings	59%	32%	8%	1%
Skill development	56%	40%	4%	0%
On-line offerings	53%	26%	16%	6%
Immediately use new knowledge	40%	44%	15%	1%
Networking with cohort group	24%	41%	31%	4%

Convenience appears to be a theme that underlies many of the issues that are important to respondents. The day and time of the courses appears to be exceptionally important with 75% rating this as very important, 19% said it was important, 5% said it was somewhat important and only 1 percent said it was not important. The flexibility of the degree program was important to all of the respondents with 68% rating this factor as very important, 28% said it was important, and only 4% said it was somewhat important. Cost of the program was important to 98% of the

respondents with 65% saying this issue was very important, 25% saying it was important and only 8% saying it was somewhat important. Length of the degree program was important to all respondents with 60% reporting it was very important, 30% important and 9% somewhat important. Location was important to 99% of respondents with it being very important to 59%, important to 32%, and somewhat important to 8%. On-line offerings was rated as important by 94% of respondents with 53% saying it was very important, 26% saying it was important, and 16% rating it as somewhat important.

The other issues that most respondents reported to be important dealt with qualitative factors of the program. Specifically, skill development was important to all respondents with 56% saying it was very important, 40% saying it was important and only 4% saying it was somewhat important. The immediate use of knowledge was rated very important to 40%, important to 44%, and somewhat important to 15%. Finally, networking with cohort group was very important to 24% of respondents, important to 41%, and somewhat important to 31%.

The same factors that are reported in Table 2 were mentioned repeatedly in the narrative responses written on the questionnaire. The word "cost" was mentioned 57 times, "flexibility" was mentioned 30 times, "location was mentioned 24 times, and "convenience" was mentioned 11 times.

Respondents were asked "For course meetings, what day, time, and location would be most convenient?" Their responses are summarized in Table 3. Monday (28%), Tuesday (26%) and Saturday (22%) were clearly the most convenient days for most respondents. The evening, between 6 pm and 10 pm (62%), was by far the most convenient time, followed by those wanting class meetings in the morning, between 8 am and 12 pm (24%). The Montevallo area was the most convenient location (65%), followed by North Shelby area (17%) which is toward Birmingham in the county where the University of Montevallo is located, and the 280 Corridor (14%) which is north of the university toward Birmingham. Very few found south of the university, the Clanton area (2%) or Montgomery area (2%) convenient.

Table 3

For course meetings, what day, time, and location would be most convenient?

Day	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
Most Convenient Day	28%	26%	13%	7%	5%	22%

Time	**8am–12pm**	**1pm–5pm**	**6pm–10pm**
Most Convenient Time	24%	14%	62%

Location	**Montevallo area**	**North Shelby area**	**280 Corridor**	**Clanton area**	**Montgomery area**
Most Convenient	65%	17%	14%	2%	2%

These findings indicate that the characteristics of the program could be quite important in the success of the program. Although respondents were generally open to on-line learning and not requiring work experience for entrance into the program, they expressed definite preferences regarding the day and time of course offerings, flexibility, cost, length, location, and skills developed by the program.

SUMMARY

Given the local demand and the keen interest expressed by respondents to this survey, it appears that an MBA program at the University of Montevallo would have a high probability of success. However, prospective MBA students have a wide range of programs available to them. In fact, there are respected and specialized programs at two other state universities, the University of Alabama at Birmingham and the University of Alabama in Tuscaloosa, both within less than a one-hour drive from Montevallo. Any program at the University of Montevallo would need to be comparatively small; however, UM's reputation for small quality programs represent a distinctive strength commented on by many of the respondents. The findings of this survey indicate that prospective students at this small university have very definite preferences and issues that are important to them in pursuing the MBA.

Most of the respondents to the survey were relatively young, with limited professional experience in a wide range of industries. These findings suggest that a program at the University of Montevallo would need to be open to students without experience, and the program may need to be general rather than specialized. The exchange of ideas among diverse students in small classrooms and on-line forums led by skilled faculty could represent another distinctive strength of the program. Considering the small size of the school and the wide range of industries where potential students are employed, a general MBA degree would probably attract the greatest number of prospective students.

The overriding concerns for nearly all respondents were cost, convenience and flexibility of the program. Even though most respondents felt that a classroom forum is superior to an on-line forum for effective learning, the convenience of on-line instruction and the respondents' high comfort level with an on-line forum appear to be strong mitigating factors. Many prospective MBA candidates are exceptionally busy young professionals with demanding work and family responsibilities. It is not surprising that many new MBA programs are wholly or partially on-line or have developed on-line components to accommodate these busy individuals.

The findings of this study indicate that for the University of Montevallo a program that combines on-line instruction with classroom instruction would appeal to most prospective students. Convenience appears to be a theme that underlies many of the issues that were important to respondents. Convenience, cost and flexibility were clearly paramount concerns. It appears that a part-time MBA program would be the only practical alternative for most of the respondents to this survey. The results of the survey provided strong evidence of interest in the University of Montevallo launching an MBA program. The Graduate Council of the university approved the proposed program March 2009. Accordingly, the college has taken the next step in applying to the Alabama Commission on Higher Education, and hopes to launch a program in the near future.

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Meeting the new needs: design research education in China

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ABSTRACT

Design research education is still in its infant stage in China. This situation implies not only that the overall organization of most programs is immature, but also that many programs have unbalanced objectives and content. It is a fact that research programs in some particular conventional disciplines and subjects have been running in China for a long time, with a good track record in research studies and outputs. Design, with its definitions, nature and objectives is a comparatively new discipline/subject. Since the 1990s, some universities in China have claimed that they have offered design research programs. When reviewing the program plans, objectives, content, and ways of assessment, it is not difficult to notice that most of these programs are fine-art or engineering oriented. In addition, most of these programs in China that practice exploration are still biased towards theory study, as distinct from the emphasis on practical exploration in western design research programs in recent years, which in China is rarely taken into serious consideration. Thus, this paper reviews the development and situation of design research programs in China. It then identifies the unbalance between "theory study" and "practical exploration" (sometimes called "experimental exploration") in the programs in China as compared to those in western countries. By looking at the three major aspects (i.e. policy, implementation, management), this paper advocates that only a balance in theory study and practical exploration in design research programs can meet the new needs.

Keywords: design research program, balance, theory study, practical exploration, China

INTRODUCTION

Although the traditional formats and objectives of education in China (including those that take the form of master-learner, or the traditional apprentice system) are different from those in western society, many programs in China are already running systematically (Dreyer & Dreyer, 2010; McElroy, 1996; Landowe, 2008). For example, clearly defined stages of learning and various serious ways of assessment have been well-established for more hundreds of years. Even so, under the influence the western society, the education system in China has experienced continuous changes over the past century (Dreyer & Dreyer, 2010; Dimmock & Walker, 2000; Siu, 2009a, 2009b). One of the critical changes is the new definitions and differentiation of different disciplines and subjects according to the educational nature and settings of western society. Another critical change is the definitions of levels and grades of learning into primary, secondary and university levels (Feng & Siu, 2009).

In the old days in China, arts were the most important and dominant disciplines and subjects, although China practiced invention and scientific development in critical areas such as navigation, medicine and printing (Leung, 2004; Pan, 1999). Following the advancement of western science and technology, natural science and engineering have become more popular disciplines and subjects in China. Although many scholars still maintain the great inventions of ancient China, it is a fact that natural science and engineering disciplines and subjects have

affected the development of modern China for more than a hundred years (Feng & Siu, 2009; Simon & Cao, 2009; Yan, Jiang & Juster, 2004).

In recent years, there have been some changes in education systems. As the reviews of Siu (2005b) and Romans (2005), these include the general objectives of education itself, the objectives and structures of specific programs, and the appearance of some new disciplines and subjects. Among all new disciplines (sometimes called "subjects" or "areas"), design attracts the attention of a lot of people as one of the important disciplines because of its nature, objectives, values and content. In fact, design is a relatively new discipline, even in the western world (Heskett, 2004; Siu, 2005b, 2009b; Swann & Young, 2001). For example, research study in design (called "graduate study" in the North American system, or "postgraduate study" in the British and Continental systems) has only appeared in the recent decades (Romans, 2005). Compared to those research studies in conventional disciplines such as medicine, physics, mathematics and literature, research study in design is still in its infant stage. In China, design research programs are still immature in their development (Design Task Force, 2003; Siu, 2005b).

Since the 1990s, some universities and conventional academies of fine arts in China have claimed that they are offering design research programs. As stated by Leung (2004), when reviewing the program plans, objectives, content, and ways of assessment, it is easy to see that most of these programs are oriented to fine art or engineering. In other words, although some of the programs claim to be related to design, or are run in design departments, there is no significant difference between these programs and conventional fine art and engineering design research programs (Siu, 2005b). Moreover, in China, the structure of design research programs, as well as the position titles awarded are quite different from those in those in North America and Europe (see also Goldfarb, 2001).

Even in western society, the directions in development of design research education are quite varied. Besides traditional research studies, such as research-oriented programs (that is, PhD, DPhil, MPhil), numerous higher level design programs have appeared in recent years (for example, DDes, MDes, MA, MSc). These programs take two different directions: some of them are quite general and broad in their objectives and requirements, while others are very focused on particular directions and areas (Hickman, 2008; Romans, 2005; Yan, Jiang & Juster, 2004).

Since the mid 1990s, universities in China (including tens of academies of fine arts) have offered design research programs, and some claimed to be design-related programs (Feng & Siu, 2009; Siu, 2005a, 2009a). Quite a lot of them are offered by fine art, arts, architecture and engineering schools and departments, while others are offered by design schools and departments. Since the beginning of this century, an increasing number of educational administrators and design educators in China have started to be concerned about the development of design research programs in China. Taking advantage of local and regional meetings and design events, they meet and discuss how to improve the quality of design education, including design research in higher levels of university studies (Siu, 2009a). For example, scholars, researchers and designers gather in Hong Kong every year (for example, the Business of Design Week (BoDW) Education Conference) to hear presentations and share educational experience in the global trend and development of design education (see BODW, 2009a). There have been continuous discussions about design research education over the past couple of years. In mainland China, discussions have also been conducted frequently among different design academies, although there is a lack both of more formal arrangements and high-level meetings on the overall national development and reform of design research programs in

China (Leung, 2004; Siu, 2004). Nevertheless, while creative matters such as design have been increasingly considered by the policymakers in education and industry, now is a good opportunity to review and explore how design research education in China can improve benefits to educational, social and industrial development.

DEVELOPMENT OF DESIGN RESEARCH EDUCATION

As with many other disciplines, it is not easy to state a clear definition and a commonly recognized beginning for design studies within formal education (Romans, 2005). One of the major reasons is that it is difficult to define formal education in the context of the many different definitions of formal education found in different regions. According to Siu's (2009a) review on the design education development in western and Asian countries, the term "design education" was not recognized or formally documented until the late 19th Century. The beginning of higher levels of study in design is also difficult to define. The major reason is that some of the disciplines, such as engineering and fine art, claim to have creative-related elements (American Society of Mechanical Engineers, 1993; Ashford, 2004). In particular, the research topics in conventional PhD and MPhil studies are quite flexible (and sometimes quite abstract). Some graduates anchored in non-design disciplines can still claim that their studies are related to design and that their research topics are design-oriented, in the same way as some European universities claim to have offered high level (i.e. post graduate) design-related studies before the late 19th Century. Quite a number of architecture schools in Germany and England claim that their research-based studies involve creative thinking and design elements which appeared much earlier than the formal definition of design education first promulgated in the last century (e.g. see Architectural Association, 2009). In China, some of the fine art academies have declared that their art programs are so modern in nature that a high level of design studies existed in the country before appearing in the western world (e.g. see China Central Academy of Fine Arts, 2009). Some artists and scholars claim that some kind of painting and craft training actually involved high level studies and experimentation about "design" (Leung, 2004; Siu, 2009b).

Nonetheless, common design research programs all over the world can generally categorized into two types. The first type exactly reflects the names of the programs in that they are research-oriented. This means that "research" is the major and dominant element in the programs. Another type is teaching-oriented, and has relatively fewer research elements (Allpress & Barnacle, 2009; Evatt & Jones, 1995; Gilbert, 2009; Hackman, 2008; MacDonald, 2005; Romans, 2005). Of course, those who teach or study in the latter context would never state that their programs lack research elements. Thus, instead of arguing about the amount of research elements, more researchers nowadays prefer to take another way to view the situation. They consider how many taught-elements are in each program, and the method of assessment. Some researchers would also consider whether the requirements of a research program are on a continuous equal-weighting assessment, or mainly on the assessment of a final submitted study output, i.e. a thesis (Banta, Jones & Black, 2009; Leung, 2004; Pan, 1999; Siu, 2009b; Tennant, McMullen & Kaczynski, 2010).

As stated above, it is not constructive to argue about definitions. Instead, attention should be directed to the fact that design research programs have had significant changes over the past twenty years, especially those in Europe and the United Kingdom, where the final thesis on a particular research topic has been considered the core and practically the only area for assessment (Hickman, 2008; Romans, 2005; Yan, Jiang & Juster, 2004). Many educators have

questioned and criticized the conventional research programs of these kinds of programs, as they keep students in ivory towers (Berry, 2005: Weisbrod, Ballou & Asch, 2008). Their theses are their only output, which is never accessed by a wider population and the general public. There is also their concentration on philosophical argument about technical terms, which is only a debating game among a small number of so-called elites. In other words, the knowledge discovered or generated by the students does not bring significant benefits in the form of practical and critical changes to society (Bassey, 2000; Radio Television Hong Kong, 2003; Siu, 2005b).

Leaving aside the conventional structure and requirement of design research programs, educators in recent years have started to re-think the meaning of research and the objectives of research programs at the post-degree, post-graduate, or graduate level (Bassey, 2000). They consider that "research" in research programs may not be simply on a particular topic. In other words, instead of the conventional thinking that research programs train experts in particular areas, there is now more flexibility in educational goals, so that research programs can nurture experts who have a broad and comprehensive knowledge and experience on a wide scope of related areas.

Moreover, "research" also does not only mean "theory study". Instead, in recent years, more and more educators have put a high value on "practical exploration" (sometimes called "experimental exploration") (Fry, Ketteridge & Marshall, 2009). This means that research programs are not bound to require students to obtain new knowledge from theoretical study and argument, but may also credit practical experiment and exploration through a wide range and different natures of research activities, i.e. action experiment (Dathe, O'Brien & Loacker, 1997).

Furthermore, educators are beginning to see that there is no very obvious boundary between basic research and applied research. Instead of conventionally seeing basic research as a kind of higher level or more supreme scholarly activity (i.e. of a more philosophical nature), applied research has also been recognized as a critical and important research direction (Brew & Boud, 1995; Smith & Elliott, 1995). One of the typical examples for this change is that the Nobel Prize of Physics in 2009 was conferred on the scientist who discovered the important application of optical fiber. Nearly all scientists should agree that the important scientific achievement is more a matter of applied research.

Considering design in particular, there have been two major changes and reforms over the past 20 years (Siu, 2009b). First, applied research elements have been considered important in many western countries. Taking the design research programs in the United States as example, a large number of universities consider that design research must include a high level of applied research elements (Michel, 2007; see also Boud & Lee's (2009) study on changing practices of doctoral education). These research elements are not just on philosophical investigation and discussion, but more about experimental exploration and analysis (see also Hickman's (2008) study on research in art & design education). Distinct from the traditional British style with its high level of autonomy for students to identify their research directions, titles, objectives, and methods of investigation and analysis, some universities in the United States prefer to link their students' research to particular projects. For example, the design schools of Harvard University, Carnegie Mellon University, and Illinois Institute of Technology have considered the importance of students' research projects during their doctoral studies. Students' research is more or less bound to specific topics, with specific roles in particular research labs or centers. Outcomes of applied research in research programs are highly valued, while theses become a routine end-stage report for graduation purposes, having less significance than the value of applied research (see

Siu, 2009b). Second, and different from before, when top tier journals and book publishers only accepted philosophical studies and arguments on design theories, more journals and publishers have accepted writings about design process and practical applications. For example, the ten top design journals around the world have accepted more papers about applied research (see the objectives and notes for contributors in *Design Studies*, *Design Issues*, *The Design Journal*).

DESIGN RESEARCH EDUCATION IN CHINA

Reforms and changes

Since the early 1990s, there have been some reforms and changes in the higher education in China (Dreyer & Dreyer, 2010; Siu, 2009b). In tertiary education, one of the critical changes is the combination of structure reform and organized collaboration among academic institutions. In the 1990s, a critical reform was that some institutions with similar standards in general and which were located close to each other combined together to form a larger institution. Alternatively, a relatively small institution merged with a larger institution to form an overall stronger institution. For example, an art and design academy might merge with a university and then the former becomes a school or department of the university. A typical example is that the Central Academy of Art and Design merged with Tsinghua University in 1999, and then the Academy changed its name to Tsinghua Academy of Arts & Design (see Academy of Arts & Design, 2009). This kind of merging also implies the expectation of improving the standard of teaching and research in some of the conventional and smaller scale design academies (Siu, 2009b). In fact, for the past ten years, Tsinghua Academy of Arts & Design has undergone significant positive changes and improvement in research programs. Educators and researchers also agree that overall, design research programs in China have achieved change and are in step with the global development in design education.

Case studies

From mid 2003 to early 2009, case studies related to design education in China (including Hong Kong and Macao) were conducted (Siu, 2003, 2005a, 2007, 2009a). Twelve universities with design programs were selected for general program review and evaluation, while six of them were selected for focused studies. As stated above, some conventional design academies underwent critical change in the late 1990s due to structural reform. Many of these design academies were combined to form larger universities. Some of these design academies after the reform have still maintained part of their internal organization structures and also their autonomy in setting up programs, though these academies are under the umbrella of their governing universities. Therefore, some of these design academies have taken the opportunity to review and then re-design their programs, and have examined the resource and directions of their design research programs. Now that these design institutes are under the university system instead of the conventional academy system, they have gained more resources to plan and implement postgraduate programs (Siu, 2009a). Some also have gained opportunities to work with other departments. For example, some research students in design schools can work in engineering departments or with engineering students to carry out practical research projects. In addition, now that China is increasingly open to the outside world, universities (including the design academies) have more chance to have contact and collaboration with foreign universities,

and at the same time, these universities also increasingly expect to establish networks with those in China. This situation initiates (or in some cases, forces) design academies and departments in China to be much more open to change.

The case studies can be considered as two major phases. The first was conducted from 2003 to 2008 (see Siu, 2009a, 2009b), while another additional phase was conducted from 2007 to 2009. The need for the second phase was based on the findings of the first phase, which included the recommendation that an additional stage of study was necessary (Siu, 2009b). Overall, there were three major parts to the studies. Due to the resource constraints and the willingness of the selected universities, the second and third parts were only conducted in the six universities selected for focus study:

- General reviews of the academies' backgrounds and program documents (for example, program objectives, structures, graduation requirements) were conducted in the twelve universities with design research programs. One of the criteria for the selection of the universities was the reputation of the universities and the availability of design research programs in the universities.
- Interviews with the program leaders and teaching professors were conducted. The interviews were conducted in a semi-structured way in order to allow the interviewers to prompt questions that led to a more in-depth understanding. Moreover, since different design academies had different structures and requirements, a semi-structured interview format was a more appropriate and effective way to invite interviewees to give further comments on design education in China.
- Interviews with the research students were conducted. This stage of studies was added to another study had been conducted before (see Siu, 2009b).These interviews could be considered as a supplementary part of the case studies. They were undertaken because the findings of previous studies indicated that the comments of the students were necessary and essential for a better understanding of the "expectations" and "willingness" of the students themselves. This additional part was also the most difficult and time- consuming due to the varied needs, expectations, natures, topics and study structures of the students. Moreover, design research students came from different disciplines with different natures and requirements from those disciplines. All of these increased the difficulties of the study. This aspect of the study was carried out from early 2007 to early 2009, when more than 40 students were interviewed. The interviews were conducted in a semi-structured mode; sometimes some small group discussions were conducted due to the practical requirements (i.e. restrictions) of the universities and the students' expectations.

OPPORTUNITIES AND POTENTIALS FOR DESIGN RESEARCH EDUCATION

China is one of the most civilized nations (Chinese Civilization Centre, 2007; Laffitte, 1995; Makeham, 2008; Shaughnessy, 2000; Zhong & Hua, 2006). Its formal and informal cultural and social development, including its education system, has been evolving over the past five thousand years (Gao, 2008; Sanderson & Alderson, 2005). Recently, many western people have been amazed at its structures and objectives. Setting aside some critical breakthroughs in natural sciences, most of the time, education in China has been more concerned with humanities and arts (Makeham, 2008).

Design is a diverse and quite abstract discipline that is difficult to categorize in the traditional groups of disciplines, e.g. science, engineering, humanities, arts. Its definitions,

objectives and nature are also broad (Leung, 2004). Even in some countries such as those in Europe and North America with a longer development history in design practice and education, the particular nature of design and design education is still arguable.

Compared to the western countries, as stated above, design education is new in China (Leung, 2004; Siu, 2003, 2009a, 2009b). However, it does not mean that this newness hinders the development of design research programs in China. Instead, compared to many western countries, China has made dramatic progress in design research program development within its relative shorter period of development. The number of design research students has also increased rapidly for the past 10 years. The percentage of students in China who continue their studies at a higher level after degree graduation is much higher than those of many foreign countries (Siu, 2009a). It is also the reason why in recent years an increasing number of European and American countries conduct education expos in China..

According to the findings of the case studies, several key opportunities and potentials for design research programs in China can be identified:

- As a developing country with rich and diverse resources, particularly with respect to manpower in creative thinking and problem solving, the Chinese people have a higher expectation about how education can bring educational, social, cultural, economic and industrial benefits to the state. No matter whether it is correct or not, a lot of people believe as a kind of myth that that "design" can generate breakthroughs and new resources (due to its nature and characteristics) it. While research programs are commonly considered as a higher level of study in universities, people also have a higher expectation on the programs, and in turn, more resources have been injected into the programs by the government and the industry (Siu, 2009a). For example, a large number of study awards and scholarships have been provided for design students. A large portion of the internal education budget is also set aside for higher degree programs. Moreover, compared to many conventional humanities subjects, design research students are resented by those in other studies because design students have more opportunities; since they can use their research outputs (i.e. application of design theories and knowledge) to apply for design and scholarship competitions.
- In recent years, some of the conventional fine art disciplines and subjects have been criticized and have faded in popularity (Pan, 1999; Siu, 2003, 2004). Conventional engineering disciplines and subjects have lost some of their attractive characteristics for the young generation. Design has been recognized as a discipline with a creative nature and higher application value to society and industry (China Central Academy of Fine Arts, 2009; Leung, 2004). Success stories reported by mass media about creative people, many of them designers, motivate more good students to study the degree programs and stay in universities to continue their research studies. For example, since the mid 1990s, design research study such as PhD and MPhil and taught programs such as Master of Design have become more highly valued in Hong Kong (School of Design, 2003, 2008). Since the early 2000s, more taught programs in different design areas have also blossomed. In many cities with highly regarded universities such as Beijing, Tianjin and Shanghai, higher level design programs have also become more popular since the early mid 2000s.
- Some professors -- those who graduated from other countries with a formal education in design research instead of only conventional fine art research -- have urged reform featuring new postgraduate design education with more research elements. Many of these

professors have relevant experience in practical exploration through being involved in real design projects supported by industry. In addition, more degree graduates expect to stay in universities to further their studies. Such a situation further enhances the development potential of design research programs.

- Studies at higher levels in universities have become more popular, including subjects that the industry and the general public did consider serious academic qualifications (Zhang & Stephens, 1992; Zhou, 2006). For example, ten years ago, there were very few design degree students who furthered their studies after their degree graduation. Many students considered only their career development and professional practice; however, in recent years, more graduates, including those with success in business, have preferred to return to universities to obtain a higher degree. There are two major reasons: first, these graduates want to update their academic knowledge due to the rapid change in design subject matter. Second, many mature graduates with lower academic qualifications want to get a higher degree title in order to get more respect from their junior colleagues where they work. This situation is particular obvious for some senior management staff in China who are leading a team with a high academic qualifications due to the existing "qualification inflation". Even though such people may lack a basic degree, they now find it possible to study for a research degree, qualifying under special entrance requirements through their working experience. These situations bring an advantage to the programs, in that many of these students have good industry experience both through work and research. They also have strong links with the industry: when they go back to universities for further study, many of them are supported by their companies.
- Since China has been more open over the past ten years, many foreign universities want to have joint research programs with Chinese universities. On the one hand, this kind of program collaboration can allow foreign universities to enroll good students within the big pool of good students in China. On the other, since the late 1970s, under compulsory family planning, the single-child family has become a norm in China, in particular in the modern cities. This situation has made education a very good income source for foreign universities, in that a large number of single-child families can afford and are willing to pay more to allow their children to stay longer and gain a higher degree in university, particularly in good foreign universities..

ISSUES OF DESIGN RESEARCH EDUCATION TO MEET THE NEW NEEDS

As the case study findings illustrate, design research education in China is full of opportunities and potential. More than 40 issues for attention and action have also been identified in the case studies mentioned above. Among them, some key issues are essential and urgent for design research education to improve and meet new needs:

- There has not been sufficient review and discussion about design research education in China. That which has taken place is piecemeal, and done by only a few universities and academies. Moreover, the scope of reviews and discussions are not comprehensive enough. For example, some universities only consider design research programs focusing on one to two particular specialties/subjects. Most of the time, this kind of piecemeal and non-comprehensive review bias focuses only on the particular interests of an individual faculty, instead of the overall and necessary development of design research education.
- Even though some annual meetings have been conducted over the past ten years (e.g. the

annual design education meeting in Hong Kong), there is a lack of coordination among design research programs in China. However, several alliances and networks have been formed among design schools and departments in universities in China these years. Even so, most of their work is only on particular project directions or conference coordination, instead of in-depth discussion and collaboration about design research programs. One of the reasons is that the number of design research students is small and they require a relatively large level of financial support from universities. This is distinct from the taught programs, which can generate a large tuition income.

- There is no commonly agreed or accepted structure of programs. The length of study for a commonly recognized degree title differs in different places, from the entrance requirements to the assessment methods. Taking the programs in Hong Kong and mainland China as an example, the education structures as well as the degree destinations are quite different (see The Hong Kong Polytechnic University, 2009). The structure and compulsory learning elements of the design research programs in mainland China are also quite different from those in foreign countries (see China Central Academy of Fine Arts, 2009).
- Applied research elements are particular lacking in many programs in China. In other words, theory-based elements mostly still dominate in the majority of the programs. One of the reasons for this situation is that many of the supervisors do not have experience to handle real-world projects, and some of them do not have a relationship with the industry. Also, some students are reluctant to find real-world projects themselves. Instead, many students take an easy and safe route by focusing on theoretical study instead of applied research.
- There is a lack of program elements that will allow design research students to enhance their knowledge and experience in applied research methods. Most of the time, students carry out their research mainly through literature review and analysis. In fact, design research students in China read a lot (Siu, 2009a, 2009b). This situation is not bad, but it can cause two drawbacks. First, quite a lot of the readings selected by the students are in Chinese (including a large portion are translated from foreign literature). This situation means that many readings are not up to date, least of all the most recent ones. This biases the readings. The second drawback is that many students do not have chance to carry out empirical research, e.g., exploratory and experimental studies. This drawback further causes a negative ripple effect, in that students have neither incentive nor encouragement to explore and construct new applied research methods -- which is generally recognized in foreign countries as important for the development of design research education.
- Many design academies, schools and departments still run their programs like other conventional arts or fine art programs. On the other hand, some link their programs tightly to engineering programs. This means that no specific “design research” knowledge and experience can be provided to their students. The new trends of design theories and experiments (such as those in different foreign countries and regions) are also lacking in the program elements in China. For example, an examination of the thesis titles from 2006 to 2008 in twelve of the popular design academies, schools and departments in China reveals that a large proportion of the thesis titles are related to reviewing traditional philosophical thinking and ideas of art and cultural theories, and most are narrowly focused on traditional Chinese thinking and theories. Comparative studies between traditional and contemporary views on design theories, and comparative

studies between the design views in China and foreign countries are very limited. Another large portion of the thesis titles are related to conventional engineering studies, even though they are application-oriented.

- Due to the lack of incentives for practical exploration, many design students' research topics cannot accommodate recent changes and meet the needs of the society and the industry (for the advantages of practical exploration, see Fry, Ketteridge & Marshall, 2009). As discussed above, the lack of exploration of new and alternative applied research methods biases the development of the design research education. Several design professors interviewed for the study indicated that design research in China seems to work inside an ivory tower, and that it does not consider and also cannot meet (or, at least not pay attention on) the new needs of the society and the industry. This situation goes against the global trend of design research (Laurel, 2003; Michel, 2007).
- Many programs are not able to go along with global educational trends. In other words, many programs cannot consider the needs of, or match with the changes to programs in other countries. This situation is particularly significant in that there is very limited collaboration among universities in China or with universities in other countries in the supervision of research students. In fact, some prestigious universities in China have a contrary policy, in that they do not recommend joint supervision with other universities. This situation not only limits the experience and development of research students, but also the overall development and resource management of the programs. Moreover, studies have highly valued the advantages of collaborative supervision (e.g. joint-supervision, co-supervision, specially-invited supervision) in research programs (Ikeda & Takayanagi, 2001; Ujang, 2000). Collaborative supervision between industry and the university has also been a popular trend in design research education. In general, applied research requires research students to explore a wider scope of areas before going in a particular topic. Most of the time, practical exploration also expects the students to seek advice and help from relevant disciplines. As a result, the scope of knowledge of such students is not narrow and biased. Besides, collaborative supervision also lets industry know more about university research and have a closer relationship with the university, so that industry is more willing to contribute resources to university research (Scrivener, Ball & Woodcock, 2000; Siu, 2009b).
- There is a lack of experienced supervisors to guide research students, even though an increasing number of study-abroad design graduates return to China to work in universities. Some old professors still use conventional (i.e. outdated) methods to guide their students in design research. For example, many of the professors working in the design institutes and departments only have knowledge and teaching experience in other disciplines such as engineering, art, social studies. As discussed before, all these situations are particularly significant and becoming more serious so long as joint supervision is not sufficiently encouraged in China. In addition, exchange of professors and students in design discipline is also relatively less than in other disciplines such as natural sciences and engineering. This situation also deprives professors (i.e. supervisors) and students from having a better exposure to the outside world, including industry and other research labs and centers.
- Although in recent years an increasing number of students have participated in design projects during their studies, well-organized research training is still lacking (Leung, 2004). For example, there is a lack of well-planned supporting studies for the research

students. Unlike the practice of foreign countries where design research programs have good linkages with other research programs, so that students can get support and enroll in the studies of other programs (School of Design, 2003), many design research programs in China are so internally bounded that the opportunity for exposure to students in other programs is quite limited. This situation has the significant drawback that the students' vision is so narrow that design research becomes slow and restricted in development (for widening scope of students' research, see also Ehrenberg & Kuh, 2009).

DIRECTIONS AND WAYS TO GO

Design research education is important (Evatt & Jones, 1995; Hickman, 2008). It is also full of opportunities and potentials to go further when it is still in its infant stage (Leung, 2004; Siu, 2009a, 2009b). According to the case studies above, good development in design research education should consider three aspects in order have a balance among theory study and practice exploration. They are, policy, implementation, and management.

First, a good and carefully considered overall policy for design research education should be established. This means that an in-depth and comprehensive review of the overall educational policy is necessary. This review must be based on the nature, directions, objectives, and practical strengths and constraints of research education in China. With respect to overall management in terms of balance and diversity in educational development, the central educational policy unit needs to plan and establish a policy appropriate and feasible for China. Obviously, compared to other countries, China is large in its geographical aspect and other physical, social and cultural aspects (Dillon, 2009; Dreyer & Dreyer, 2010; Pan 1999; Simon & Cao, 2009). Although a plan for the overall development of the whole country is necessary, it is not wise to have a very rigid policy for design research education. Instead, while a key and core policy should be defined as guideline and framework, flexibility should be provided for implementation in the different regions and cities, and in different contexts (see Mok's (2001) and Teather's (1999) studies on education policy reform and educational changes). In short, a careful review of the balance in the research directions, contents and methods is important. Only this kind of careful review can make existing and future design research education meet the new needs.

Second, as mentioned, directions in the educational policy of design research education must be clear, but a certain degree of flexibility should be allowed in the implementation of these directions (Siu, 2004, 2009b). In particular, when design research is tightly related to social and cultural changes which change rapidly, flexible implementation allows space and prompt response of the programs to march with the changes. Flexible implementation also allows flexibility (i.e. a buffer zone) for different universities to implement programs and research directions according the universities' strengths and constraints. For example, some design universities have long and strong reputations and experience, and good research staff in specific art and design-related areas. Some may be good in basic research and theoretical analysis. Some may have a good backup of other departments for multi-disciplinary practical exploration. Some may have good collaboration networks with particular industry sectors due to the universities' particular traditions or geographical locations. It would be best if these universities take advantage of their strengths as well as their assets to develop particular research programs. This situation also gives advantages to the overall educational development of China, in that the directions of program development can be more comprehensive and not biased (Siu, 2005;

Wang, 2003). It also provides chances for the universities to develop new research areas and strengths under the core direction of research education.

The management aspect is more about the quality assurance of the design research programs that are implemented. While an action approach should be adopted to guarantee a continuous quality assurance mechanism, in the same way as the implementation aspect discussed above, flexibility should be allowed in program management, in order to allow the programs to meet the new and changing educational needs (see Preedy, Glatter & Levačić, 1997; Sallis, 2005). In fact, there are plenty of studies about good management in research programs. Regarding the practical situation of the design research programs in China, two major matters demand more attention: quality assurance of student performance during their studies, and quality assurance of the final output of the studies. With respect to the first, continuous monitoring of student performance is weak in many universities. Thus, a mechanism to monitor students' research process and interval outputs is important (Siu, 2005a). For the second, the assessment of research students' research outputs (i.e. theses) is not always conducted in an open and consistent way (see Rayment, 2007; Russell & McGuigan, 2001). This situation does not mean that there is a lack of sufficient members on the assessment panel, but rather it means that assessment must be conducted in an objective way. In particular, most of the time, there is a lack of external assessors for the students' research outputs. Today, an increasing number of design universities in China have started to consider the external assessment of the students' theses. For example, the design schools in Tsinghua University and the China Central Academy of Fine Arts have put external assessment as an important criterion. However, the arrangement of this kind of external assessment is still not conducted in a professional and well-organized way. Most of the time, external assessment is only taken as a discretionary process; there is no serious model for review and oral examination using external assessors. Regarding external assessment, another objective assessment method is the publication of research outputs in double-blind review journals. To date, publication in refereed journals or other similar objective research outlets is still the weakest point of design research education in China. When compared to the refereed publication of students in foreign countries, design students in China are particular deficient (Siu, 2009b). According to the case studies, there are several reasons of this situation. First, refereed publication is not the common practice of design research supervisors in China, and in turn this kind of practice has not been promoted. Second, nearly all high-standard design journals are published in English. However, many design research students in China are still deficient in English (Cheng & Curtis, 2010). Third, design research in China is still theory-study oriented. However, the direction of many design journals today has changed, so that more of them expect to have empirical-study papers with significant data presented in the terms of scientific evidence. The lack of practical exploration makes design research students in China have more difficulties in achieving successful publication in foreign design journals.

CONCLUSIONS

Design research education in China is new (Leung, 2004). Over roughly the past two decades, more universities have introduced different kinds and levels of design research studies (see BODW, 2009b; China Central Academy of Fine Arts, 2009). Some of them progress quickly and gain quite good international comment and recognition, while others are still standing in the same place with the result that the number of students is going down. The research outputs of the students of different programs are also varied. Some students only aim at

gaining their degrees by submitting their theses that are then put on the bookshelves in the university libraries. Most of such studies in fact have offered very little in the way of knowledge and practical contribution to the academic field and society. On the other hand, some students have persisted. They have made an impact on the discipline through international publication, and are transferring their findings and experience into practical innovation and contribution to the academic, social and industrial sectors.

Using case studies, this paper examines the differences among different design research programs as well as the different contribution of students' research by looking at three major aspects: i.e. policy, implementation and management. The findings of the case studies identify that the imbalance between theory study and practical exploration is one of the key causes of the unsatisfactory achievement of design research programs. The findings also indicate that existing design research education in China is more biased towards theory study due to traditional and practical reasons. Some relate to the traditional development of education in the country. Some relate to the planning and review process. Some relate to the program structures and ways of quality assurance. Some relate to the availability of resources and supervisors, while some relate to the intention and motivation of the students.

To obtain a balance between theory study and practical exploration, this paper advocates more consideration to practical exploration of the existing imbalance in the design research education in China. The paper also suggests how different factors such as collaborative supervision and objective assessment can work together to enhance practical exploration in students' design research. However, it does not mean that these suggestions must exist forever. Instead, as indicated above, we need to review the overall policy, ways of implementation and quality of management all the time. Only an action review and continuous reform of the programs can guarantee a higher impact and better quality of design research education to meet the new needs of society.

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