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SMALL AND LARGE FACULTY-SIZE ADJUSTED ACCOUNTING PROGRAM RANKINGS BASED ON RESEARCH-ACTIVE FACULTY: A UNIFORM APPROACH

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ABSTRACT

Prior studies have ranked accounting programs based on the use of various methodologies, many of which did not control for faculty size. Even in studies that controlled for faculty size, a common issue was the inclusion of faculty and PhD students who were not research active. To resolve these sample issues, this study uses a sample of top-6 accounting journal publications over the 2006-2013 period to demonstrate an innovative, efficient, and uniform approach for calculating faculty-size adjusted accounting program rankings. This approach can be modified to include more accounting journals. Specifically, the study controls for faculty size by including only active researchers at each school: that is, authors who published during this period in one or more of the top-6 accounting journals. Consistent with prior studies, the analyses reveal that controlling for faculty size results in statistically significant changes in program rankings. Other study innovations include separate rankings for large (over 13 faculty members) and small (from 3-13 faculty members) accounting programs. Small school rankings, which have not been the focus of prior research, may provide programs with limited size an important measure of their quality that is potentially useful in recruiting faculty and students.

INTRODUCTION

Accounting researchers have ranked accounting programs for almost 45 years, and this research has evolved significantly during this time. For example, early studies ranked programs based on responses to questionnaires and surveys, and these studies were followed by rankings based on article counts from program graduates, rankings based on citation analyses of program graduates, and then rankings programs based on faculty and PhD program graduates' representation on editorial boards. More recent studies have ranked accounting programs based on PhD placements, the research productivity of faculty based on employment institution or PhD institution (i.e., measures of graduates' prestige), and the latest research innovations included accounting program rankings based on productivity of faculty by research topical areas and research methodologies.[1]

An issue with a number of prior studies was the lack of control for faculty size, which can potentially alter accounting program rankings. Even in studies that controlled for faculty size, a common additional issue was the inclusion of faculty and PhD students who were not research active, and perhaps never were research active. To resolve these sample issues, the objective of this study is to demonstrate an innovative, efficient, and uniform approach for calculating faculty-size adjusted accounting program rankings *that can be applied to any set of accounting journals* (e.g., top-3, top-6, top-10, top-20, top-25, top-40, etc.). To illustrate the uniform approach, the study uses a sample of top-6 accounting journal publications over

the 2006-2013 period and controls for faculty size by including *only* active researchers at each school: that is, authors who published during this period in one or more of the top-6 accounting journals.[2] The study weighs each institution by the number of authors on each article, as well as the number of affiliations per author, and provides faculty-size adjusted and non-faculty-size adjusted rankings of institutions 1-75 with the most weighted Research Articles in the top-6 accounting journals from 2006-2013. The aim is fourfold: 1) to demonstrate a uniform approach for calculating faculty-size adjusted rankings, 2) to assess whether faculty-size adjusted rankings based on this uniform approach differ significantly from non-faculty-size adjusted rankings, 3) to identify how faculty-size adjusted accounting program rankings potentially complement prior accounting program rankings research, and 4) to create and present separate rankings for programs with large (over 13 faculty members) and small (from 3-13 faculty members) based on publications in top-6 accounting journals from 2006-2013.

A review of prior literature revealed seven prior accounting program rankings studies that adjusted for faculty size: Andrews and McKenzie (1978), Bublitz and Kee (1984), Jacobs et al. (1986), Hasselback and Reinstein (1995), Stammerjohan and Hall (2002), Brown and Laksmana (2004), and Baldwin and Trinkle (2013). Each study is discussed in more detail in the prior research section, and is highlighted here to indicate the method each study used to calculate its faculty-size adjusted program rankings. Andrews and McKenzie (1978) calculated a publication per faculty member index, while Bublitz and Kee (1984) adjusted for faculty size by deflating their unadjusted publication measures by the number of faculty and doctoral students at each institution, and Jacobs et al. (1986) ranked the top-25 doctoral programs based on a time- and size-adjusted publication productivity index they created from publications by doctoral program graduates. Hasselback and Reinstein (1995) calculated unadjusted doctoral program rankings, and then adjusted the rankings for journal quality and doctoral graduates per school.

Stammerjohan and Hall (2002) ranked 80 U.S. PhD granting institutions based on initial placements of graduates, allowed rankings to differ for both doctoral granting and non-doctoral granting institutions, and then adjusted the rankings of U.S. PhD granting institutions for graduates placed at non-PhD institutions. Brown and Laksmana (2004) used SSRN downloads of working papers to rank accounting programs and accounting faculties, and provided unadjusted rankings and rankings adjusted for faculty size. Lastly, Baldwin and Trinkle (2013) examined 83 accounting programs to rank faculty publications during initial placements, and adjusted their rankings for the percentage of PhD graduates placed at doctoral granting schools and AACSB accredited schools.

Six of the seven prior studies indicated that adjustments for faculty size are relevant for calculating accounting program rankings, with the exception being Bublitz and Kee (1984). However, as the use of differing faculty-size adjustments in each study reflected, no universally accepted approach exists for calculating faculty-size adjusted accounting program rankings. Four of the studies calculated program rankings based on publications by PhD graduates (Jacobs et al. 1986; Hasselback & Reinstein 1995; Stammerjohan & Hall 2002; Baldwin & Trinkle 2013). Bublitz and Kee (1984) calculated program rankings based on publications by faculty and PhD graduates; and the remaining two studies by Andrews and McKenzie (1978), and Brown and Laksmana (2004) calculated program rankings based on publications by faculty only.

Since no universally accepted approach exists for calculating faculty-size adjusted rankings, a major issue with the methods used in prior studies is the inclusion of faculty and PhD students who are not research active, and perhaps never have been research active. For example, Hasselback's *Accounting Faculty Directory* (1989-2014) lists all faculty members at each school, but does not distinguish between research-active and non-research-active

faculty. And since no single data source exists for PhD students, researchers must manually compile these data, and similar to the faculty data, the PhD student data may be noisy since the PhD student lists may include future faculty who are not research active, and may not plan to be research active. Including faculty and/or PhD students who have not published during the period being studied potentially adds noise to prior faculty-size adjusted studies, and the impact of this noise may be substantial.

Thus, a need exists for a uniform approach for calculating faculty-size adjusted accounting program rankings that ensures that only research-active faculty are included. To illustrate such a uniform approach that can be applied to any set of accounting journals, this study uses a sample of top-6 accounting journal publications over the 2006-2013 period to calculate faculty-size adjusted accounting program rankings, and controls for faculty size by including only active researchers at each school: that is, authors who published during this period in one or more of the top-6 accounting journals. This innovative, efficient, and uniform approach significantly limits the faculty data collection required relative to the faculty-size adjustment methods used in prior studies. Even though this study uses only the top-6 accounting journal publications to demonstrate the approach, researchers can modify the method to include any set of journals accounting researchers desire or need (e.g., top-3, top-6, top-10, top-20, top-25, top-40, etc.). Thus, the primary incremental contribution is demonstrating an innovative, efficient, and uniform approach for calculating faculty-size adjusted accounting program rankings. The overall large and small faculty accounting program rankings reported based on top-6 publications for 2006-2013 are also informative, and represent an additional incremental contribution of the study.

This study complements prior accounting program rankings research in at least four ways. First, given the shortage of accounting faculty (Plumlee et al. 2006; Leslie 2008, Stephens et al. 2011; Fogarty and Holder 2012), a study that demonstrates a uniform method for calculating faculty-size adjusted accounting program rankings, which may differ substantially from non-faculty-size adjusted rankings, should be of interest to prospective PhD students, current PhD students, accounting program administrators (e.g., directors and chairs), deans, and other college administrators responsible for hiring accounting faculty. Faculty-size adjusted rankings may provide evidence helpful to recruiting new faculty in a tight job market where the quantity demanded for accounting faculty exceeds the quantity supplied. For example, accounting programs whose faculty-size adjusted rankings are higher than their non-faculty-size adjusted rankings may use such findings as a recruiting advantage to motivate faculty to accept their employment offer. The faculty size-adjusted rankings may be especially relevant to smaller programs whose quality may have previously been understated (their program was ranked lower) based on the methodologies employed in prior ranking studies.

Second, new accounting PhD program graduates and faculty members who change institutions (voluntarily or involuntarily) should be highly motivated to align their career intentions and expectations with the new institution's teaching requirements, research support, research expectations, and collegial support, guidance, and assistance. Given this, faculty-size adjusted accounting program rankings may be an important factor in this decision matrix. Other important decision factors likely include the new institution's research support, research expectations, and research environment given the proposed teaching load, summer support, PhD student or TA support, incentives, etc. As an example of the importance of some of these decision factors in recruiting, Swanson et al. (2007) noted that private schools take advantage of the quantity imbalance between the demand for accounting faculty and the supply of accounting faculty by paying high salaries, and also benefit from providing resource-rich environments to new hires (Swanson 2004). As a result, private schools are

expected to have higher faculty-size adjusted accounting program rankings relative to their non-faculty-size adjusted accounting program rankings.

Third, deans and accounting program administrators are charged with 1) raising funds from alumni and friends to support the school, 2) hiring and retaining quality faculty and staff, and 3) recruiting quality students (undergraduate, masters, and PhD). To the extent that a school's faculty-size adjusted rankings are higher than their non-faculty-size adjusted rankings, deans and accounting program administrators may use the accounting program rankings (PhD, masters, and undergraduate programs) to help fulfill these responsibilities. Therefore, maintaining or increasing rankings (non-faculty-size adjusted rankings, and to the extent they significantly differ, faculty-size adjusted rankings) should be an important objective for deans and accounting program administrators.

Fourth, given a study's research question(s), Stephens et al. (2011) highlighted the potential benefits of looking beyond singular or overall accounting program rankings to rankings based on research topical area and methodology, which they noted may "provide nuanced information about a doctoral program's topical and methodological strengths and shortcomings especially in niche areas" (pp. 150). However, Stephens et al. (2011) did not consider faculty size in their research topical area and methodology rankings. By examining whether a uniform approach for calculating accounting program rankings conditioned on faculty size differs significantly from non-faculty-size adjusted rankings, this study assesses the potential for richer information than that found in Stephens et al. (2011) and other prior rankings studies that did not adjust for faculty size.

For example, if this study finds that faculty-size adjusted rankings differ for the top-6 journal sample, a logical question to ask is whether the non-faculty-size adjusted rankings results for research topical area and methodology reported in Stephens et al. (2011) will differ if faculty-size adjustments are incorporated? If so, then prospective doctoral students should consider faculty-size adjusted rankings based on research topical area and methodology as they weight institution decision factors such as the capacity of the faculty to support PhD students. Wieland et al. (2015) found that employment institution is more correlated with top-6 accounting journal publications than PhD institution, and so current PhD students should consider faculty-size adjusted rankings as they weight employment decision factors such as the capacity of colleagues to mentor junior faculty.

This study proceeds as follows. The next section reviews the relevant prior literature and presents the hypothesis, followed by a section that discusses the sample. The next section presents the research method, empirical results, and discussion of the unadjusted and faculty-size adjusted accounting program rankings, and the final section presents conclusions and study limitations.

PRIOR LITERATURE

Accounting researchers have ranked accounting programs since 1970, and during this time the rankings methodologies have evolved into six categories: The first category of studies ranked accounting programs based on responses to questionnaires and surveys, and included studies by Estes (1970) and Carpenter et al. (1974). The second category of studies ranked accounting programs based on article counts from program graduates, and included research by Bazley and Nikolai (1975), Andrews and McKenzie (1978), Bublitz and Kee (1984), Jacobs et al. (1986), and Hasselback and Reinstein (1995). The third category of studies ranked accounting programs based on citation analyses of program graduates or SSRN downloads of working papers, and included research by Brown and Gardner (1985) and Brown and Laksmana (2004). The fourth category of studies ranked accounting programs based on faculty and PhD program graduates' representation on editorial boards (Mittermaier

1991). The fifth category of studies ranked accounting programs based on placement of PhD program graduates, and included Fogarty and Saftner (1993), Stammerjohan and Hall (2002), and Baldwin and Trinkle (2013). The sixth category of studies ranked accounting programs based on research topical areas and research methodologies, and included Coyne et al. (2010) and Stephens et al. (2011).

An issue with a number of prior studies was the lack of control for faculty size, which may potentially alter the accounting program rankings (Baldwin and Trinkle 2013). Prior accounting program rankings studies that adjusted for faculty size included works by Andrews and McKenzie (1978), Bublitz and Kee (1984), Jacobs et al. (1986), Hasselback and Reinstein (1995), Stammerjohan and Hall (2002), Brown and Laksmana (2004), and Baldwin and Trinkle (2013). Since no universally accepted approach exists for calculating faculty-size adjusted rankings, these studies used differing methods to adjust for faculty size, and the faculty size adjustments made in each study is discussed next.

Andrews and McKenzie (1978) used Bazley and Nikolai's (1975) sample of publications in four journals over the January 1968-July 1974 period to calculate the top-15 accounting program rankings. They adjusted for 1) perceived journal quality differences, and 2) faculty size differences. Benjamin and Brenner (1974) surveyed accounting faculty to obtain "quality" ratings of 24 accounting and business journals; and Andrews and McKenzie (1978) used these results to rank accounting programs based on perceived journal quality differences. They found no ranking changes larger than two, and concluded that differences in perceived journal quality had little impact on accounting program rankings. With regard to faculty size differences, they calculated a publication per faculty member index and determined that "faculty size does have a considerable effect upon rankings" (pp. 137-138), as rankings for five of the fifteen schools increased by 3 or more spaces (two schools' rankings improved by 7 spaces), and rankings for four of the fifteen schools decreased by 3 or more spaces (largest decrease was 12 spaces). They concluded that failing to consider faculty size may miss "the outstanding individual productivity of smaller departments, and that such quality performance should be recognized" (pp. 138).

Bublitz and Kee (1984) expanded the set of journals examined to 69 and looked at five years of data (1976-1980). They added a fifth subgroup (academic-practitioner) to the four subgroups used by Windal (1981): academic, practitioner-public, practitioner-private, and taxation, and presented rankings by "school of residence" and "school of degree" for the top-15 schools for the total sample and for each of the five subgroups. They adjusted for faculty size by deflating the unadjusted measures by the number of faculty and doctoral students at each institution. Their analyses revealed that 1) faculty at most schools publish in a limited set of journals, with the exception being a faculty at a few large state schools who publish across all journals, 2) adjusting for faculty size and doctoral program size had minimal effect on the accounting program rankings, 3) faculty at small, private schools published more in academic journals, and faculty at large, public schools published more in practitioner journals, and 4) graduates of schools where faculty published in academic journals (i.e., small, private schools) are more likely to also publish in academic journals.

Jacobs et al. (1986) ranked the top-25 doctoral programs based on a time- and size-adjusted publication productivity index they created from publications by doctoral program graduates to assess the impact of doctoral alumni size and doctoral program age. Their sample included papers published in eight journals over a period of 13 years (January 1972-December 1984). Their results indicated 1) un-weighted and weighted overall rankings and rankings for each journal, 2) average weighted publications per doctoral graduate overall and for each journal, 3) PhD program size-adjusted average weighted publications per doctoral graduate overall and for each journal, and 4) average weighted publications per doctoral graduates overall and for each journal calculated for time since graduation (i.e., available

work years). They noted that these adjustments moved some schools into the rankings that previously were absent (e.g., Virginia Tech and Tennessee), and excluded some schools that had high rankings in the prior tables (e.g., Illinois, Texas-Austin, Michigan State, Ohio State, etc.). Thus, their results suggested that adjustments for faculty size are relevant for rankings of accounting programs.

Hasselback and Reinstein (1995) examined publications in 41 journals from 1978-1992 for all 2,708 PhD graduates during that period from 73 U.S. doctoral programs. They first ranked doctoral programs based on total weighted articles in the 41 journals with no adjustment for journal quality or doctoral graduates per school, and found only two private schools ranked in the top-25 (i.e., large, public institutions dominated the list). They then adjusted these doctoral program rankings for journal quality and found that only one more private school entered the top-25 rankings. Lastly, they adjusted for journal quality and doctoral graduates per school and found that, on average, graduates of the 73 U.S. doctoral programs published between 0.01 and 0.53 weighted articles per year, with large changes in rankings for some schools and that private schools now captured nine of the top-25 rankings spots. Thus, their results suggested that adjustments for faculty size provided useful information for ranking accounting programs.

Stammerjohan and Hall (2002) evaluated and ranked 80 U.S. PhD granting institutions based on initial placement of graduates at 1) top-tier universities, 2) accounting research departments, 3) AACSB-accredited institutions, and 4) U.S. PhD granting institutions. In order to rank accounting programs, they used data for 2,632 PhD graduates from 80 U.S. doctoral programs over the 1980-1997 period. The placement of these graduates in tenure or tenure-track positions at 505 U.S. schools was used to evaluate and rank the 80 accounting programs (institutions were required to have at least 5 PhD graduates over the 1980-1997 period). Their study improved upon Fogarty and Saftner (1993) by allowing rankings to differ for both doctoral granting and non-doctoral granting institutions, whereas Fogarty and Saftner (1993) allowed rankings to differ only for doctoral granting institutions. Stammerjohan and Hall (2002) adjusted the U.S. PhD granting institutions rankings for graduates placed at non-PhD institutions. In their sample, a majority of graduates (84.4%) were placed with AACSB-accredited schools, and less than half (43.4%) were hired by PhD granting institutions.

Brown and Laksmana (2004) extended Brown and Gardner's (1985) earlier citation-related study by using SSRN downloads of working papers through August 21, 2002 to rank accounting programs and accounting faculties for three periods: pre-1982, 1982-1991, and 1992-2001. They provided unadjusted rankings and rankings adjusted for faculty size, and found that "size adjustments affect rankings, helping (hurting) schools with fewer (more) doctoral program graduates" (pp. 253).

Baldwin and Trinkle (2013) examined 2,403 graduates from 83 accounting programs over the 1987-2006 period (and two sub-periods). They ranked accounting programs faculty publications during initial placements. Using Chan et al.'s (2007) rankings of 1,087 accounting programs based on publications in 24 journals, they created a measure of research quality, and examined a more comprehensive and current initial placement sample than Stammerjohan and Hall (2002). The findings indicated that that 77.7% of graduates in their sample were placed with AACSB-accredited schools, and less than half (40.8%) of graduates in their sample were hired by PhD granting institutions (both figures were less than those found by Stammerjohan and Hall (2002)). They presented three rankings: 1) overall placement, 2) PhD institution placement, and 3) AACSB accredited institution placement, and adjusted their rankings for percentage of PhD graduates placed at doctoral granting schools and AACSB accredited schools. Their results indicated that "the rankings of the US doctoral programs are dynamic and change rapidly" (pp. 8).

HYPOTHESIS

With the exception of Bublitz and Kee (1984), the prior research that adjusted for faculty size found that such adjustments are relevant for computing accounting program rankings. However, since no universally accepted approach exists for calculating faculty-size adjusted rankings, these studies used differing methods to adjust for faculty size. A major issue with the methods used in these studies is the inclusion of faculty and PhD student who were not research active, and perhaps never had been research active. This study solves this sample issue by first using the top-6 publications from 2006-2013 to rank the top-75 accounting programs, and then demonstrating an innovative, efficient, and uniform approach for calculating faculty-size adjusted accounting program rankings. Specifically, this study controls for faculty size by including only active researchers at each school: that is, authors who published during this period in one or more of the top-6 accounting journals. The following non-directional alternative hypothesis are proposed for the faculty-size adjusted accounting program rankings:

H1: Singular or overall rankings of accounting programs differ once adjustments are made for faculty-size.

The next section of the paper discusses the sample, and the following section presents the research method, empirical results, and discussion.

SAMPLE

The authors created a database of 1,922 research publications from the top-6 accounting journals over the period from 2006-2013. The sample initially included the following types of publications: Comments, Discussions, Introductions, Research Articles, Review Articles, Replies, and Research Notes. The database excluded Editorials, Obituaries, Acknowledgements, Thanks, Reflections, Annual Reports, Book Reviews, etc.

Panel A of Table 1 provides counts of the 1,922 research articles based on the aforementioned classifications, and Panel B of Table 1 presents the frequency of each classification. Panels A and B indicate that 1,796 (90.17 percent) of the 1,992 publications from 2006-2013 are Research Articles, 172 (8.63 percent) are Discussions, and the remaining 24 (1.20 percent) consisted of Comments, Introductions, Review Articles, Replies, and Research Notes. Focusing on the association between academic pedigree and publication success in the top-6 accounting journals from 2006-2013, the remainder of the analyses included the 1,796 Research Articles that had undergone a complete peer review and editor's vetting prior to publication, and thus should receive full credit for P&T purposes at most institutions.[3] The final sample excluded Review Articles (8) and Research Notes (8) from subsequent analyses since some institutions or faculty may give less than full credit for these articles relative to Research Articles for P&T purposes.[4]

Table 1: Panel A								
ALL ARTICLES IN THE TOP-6 ACCOUNTING JOURNALS FROM 2006-2013								
Journal	Comments	Discuss-ions	Introductions	Research Articles	Review Articles	Replies	Research Notes	Total
AOS	1	2	2	290	4			306
CAR	1	53	1	297	0			354
JAE	1	33	0	257	4			295

JAR	0	39	0	265	0			304
RAS	0	45	0	192	0			237
TAR	0	0	1	495	0			496
Total	3	172	4	1796	8			1992

Table 1: Panel B							
ROW PERCENTAGES (%) FOR ALL ARTICLES IN THE TOP-6 ACCOUNTING JOURNALS FROM 2006-2013							
Journal	Comments	Discuss-ions	Introductions	Research Articles	Review Articles	Replies	Research Notes	Total
AOS	0.33	0.65	0.65	94.77	1.31	0.33	1.96	100.00
CAR	0.28	14.97	0.28	83.90	0	0	0.56	100.00
JAE	0.34	11.19	0	87.12	1.36	0	0	100.00
JAR	0	12.83	0	87.17	0	0	0	100.00
RAS	0	18.99	0	81.01	0	0	0	100.00
TAR	0	0	0.20	99.80	0	0	0	100.00
Total	0.15	8.63	0.20	90.17	0.40	0.05	0.40	100.00

Table 2 reports the average number of top-6 research article publications by journal for 2006-2013, and shows that over the entire 8-year period, *TAR* published the most articles (495, 27.6 percent), followed by *CAR* (297, 16.5 percent), *AOS* (290, 16.1 percent), *JAR* (265, 14.8 percent), *JAE* (257, 14.3 percent), and *RAS* (192, 10.7 percent). *RAS* started publishing in 1996 and had the fewest total articles for the 2006-2013 period. Table 2 also includes the average number of annual publications for each journal.

Table 2			
RESEARCH ARTICLES IN THE TOP-6 ACCOUNTING JOURNALS FOR 2006-013			
Journal	2006-2013 Articles (8 years)	%	AVG/ Year
AOS	290	16.1	36.25
CAR	297	16.5	37.13
JAE	257	14.3	32.13
JAR	265	14.8	33.13
RAS	192	10.7	24.00
TAR	495	27.6	61.88
Totals	1796	100.0	224.50

RESEARCH METHOD, EMPIRICAL RESULTS, AND DISCUSSION

Accounting Program Rankings

As noted in Table 1, the database included the author and institution affiliations of 1,796 research publications in the top-6 accounting journals from 2006-2013. The authors first collected data for the doctoral institution and graduation year of as many faculty members as possible from the www.byuaccounting.net website, and then e-mailed faculty whose PhD institution and graduation year were missing. The authors were able to collect PhD institution and graduation year data for 1,971 out of a possible 2,046 top-6 authors (96.3%). This sample included both domestic and international authors, and was restricted to authors who published a top-6 article over the 2006-2013 sample period. Requiring a top-6 publication to enter the study's sample allowed us to calculate faculty-size adjusted accounting program rankings based on top-6 publications.

The first step in calculating faculty-size adjusted accounting program rankings was to rank accounting programs regardless of faculty size. The authors ranked institutions from 1-75 using weighted Research Articles in the Top-6 accounting journals from 2006-2013, and weighted each institution by the number of authors on each article, as well as the number of affiliations per author. For example, an article with three authors yielded 1/3 point to each institution assuming each author listed only one institution affiliation. If one of the three authors lists two institution affiliations, each institution received 1/4 point for this article and author. Using this method, the authors ranked the top-75 institutions for the period from 2006-2007. The results are presented in Table 3.

Obs.	Institution	2006-2013	Rank
Table 3 **INSTITUTIONS 1-75 WITH THE MOST WEIGHTED RESEARCH ARTICLES IN THE TOP-6 ACCOUNTING JOURNALS FOR 2006-2013**			
1	University of Chicago	43.17	1
2	University of Texas-Austin	39.33	2
3	Stanford University	38.08	3
4	University of Pennsylvania	33.67	4
5	University of Illinois	33.62	5
6	University of Southern California	28.95	6
7	University of Michigan	27.42	7
8	Massachusetts Institute of Technology	26.37	8
9	Harvard University	26.17	9
10	New York University	25.00	10
11	University of Toronto	24.08	11
12	Nanyang Technological University (Singapore)	22.42	12
13	Ohio State University	21.92	13
14	Columbia University	20.92	14
15	University of Georgia	20.08	15
16	Pennsylvania State University	19.83	16
17	University of Washington	19.42	17
18	Michigan State University	18.92	18
19	Indiana University	18.83	19
20	Duke University	18.47	20
21	University of California-Berkeley	17.67	21
22	Emory University	17.58	22
23	Hong Kong University of Science & Technology	16.92	23 (t)
24	University of Pittsburgh	16.92	23 (t)
25	London School of Economics	16.92	25
26	University of North Carolina-Chapel Hill	16.83	26 (t)
27	University of Texas-Dallas	16.83	26 (t)
28	Northwestern University	16.75	28
29	Texas A&M University	16.58	29
30	University of London (LBS)	16.08	30
31	University of Arizona	14.88	31
32	Washington University-St. Louis	14.58	32
33	University of Florida	14.11	33
34	University of Alberta	13.99	34
35	Cornell University	13.92	35
36	University of Iowa	13.83	36
37	University of Houston	13.13	37

38	University of New South Wales	12.88	38
39	University of Missouri-Columbia	12.67	39
40	University of Notre Dame	12.58	40
41	Arizona State University	12.42	41
42	Yale University	12.17	42
43	University of Wisconsin-Madison	11.83	43
44	Tilburg University	11.67	44
45	Hong Kong Polytechnic University	11.42	45
46	Georgia State University	11.42	46
47	Erasmus University (Rotterdam)	11.33	47
48	Boston College	11.08	48
49	University of South Carolina	10.87	49
50	Chinese University of Hong Kong	10.75	50
51	Cardiff University	10.67	51
52	Baruch College-CUNY	10.58	52
53	Southern Methodist University *	10.33	53
54	University of Minnesota	10.25	54
55	University of British Columbia	10.08	55 (t)
56	University of Rochester	10.08	55 (t)
57	Dartmouth College *	9.92	57
58	York University	9.92	58
59	University of California-Los Angeles	9.83	59
60	University of Oxford	9.63	60
61	Brigham Young University	9.58	61
62	University of Waterloo	9.42	62
63	Rice University	9.33	63 (t)
64	University of Colorado-Boulder	9.33	63 (t)
65	University of Utah	9.17	65
66	Singapore Management University	8.7	66
67	University of Miami	8.67	67
68	George Washington University	8.58	68 (t)
69	University of California-Irvine	8.58	68 (t)
70	Queens University	8.45	70
71	Northeastern University *	8.42	71
72	Georgetown University *	8.25	72
73	University of Melbourne	7.92	73
74	Bentley University	7.92	74
75	City University of Hong Kong	7.87	75

* = No PhD programs in business; (t) = Tie

Table 3 shows that based on top-6 publications from 2006-2013, the top ten accounting program rankings for 2006-2013 were University of Chicago (#1), University of Texas-Austin (#2), Stanford University (#3), University of Pennsylvania (#4), University of Illinois (#5), University of Southern California (#6), University of Michigan (#7), Massachusetts Institute of Technology (#8), Harvard University (#9), and New York University (#10).

Accounting Program Rankings Adjusted for Faculty Size

Table 3 presents the top-75 ranked accounting programs based on weighted top-6 publications over the 2006-2013 period. A logical question is whether and how rankings change once faculty size is considered in the analyses? To incorporate faculty size into the accounting program rankings, the authors separately adjusted, as presented in Tables 4 and 5, the weighted top-6 publications over the 2006-2013 period for the number of research faculty

at each institution by deflating the weighted publication counts for each time window in Table 3 by the number of authors at each institution with a top-6 publication in each time window. Table 4 includes only institutions whose 2006-2013 accounting faculty size was > 13 (top decile), and Table 5 includes only the top-75 institutions whose 2006-2013 accounting faculty size was 3-13.[5]

Institution	2006-2013	# Faculty with Top-6 Publications	Rank
Table 4 **TOP-6 WEIGHTED RESEARCH ARTICLES DEFLATED BY NUMBER OF TOP-6 AUTHORS AT INSTITUTION PER PERIOD (#2006-13, FACULTY > 13)**			
Stanford University	1.813	21	1
University of Chicago	1.660	26	2
Nanyang Technological University (Singapore)	1.601	14	3
University of Toronto	1.417	17	4
University of Texas-Austin	1.405	28	5
Massachusetts Institute of Technology	1.319	20	6
University of Michigan	1.306	21	7
University of Southern California	1.259	23	8
New York University	1.190	21	9
Michigan State University	1.182	16	10
Pennsylvania State University	1.167	17	11
Columbia University	1.162	18	12
Ohio State University	1.154	19	13
London School of Economics	1.128	15	14
University of Pennsylvania	1.122	30	15
Emory University	1.099	16	16
University of Illinois	1.085	31	17
University of Arizona	1.063	14	18
Harvard University	1.047	25	19
University of Georgia	1.004	20	20
Hong Kong University of Science & Technology	0.995	17	21 (t)
University of Pittsburgh	0.995	17	21 (t)
Texas A&M University	0.975	17	23
Washington University-St. Louis	0.972	15	24
Northwestern University	0.931	18	25
Cornell University	0.928	15	26
Duke University	0.923	20	27
University of London (LBS)	0.894	18	28
University of Texas-Dallas	0.886	19	29
Tilburg University	0.833	14	30
University of Alberta	0.823	17	31
Indiana University	0.819	23	32
Erasmus University (Rotterdam)	0.756	15	33
Boston College	0.739	15	34
Southern Methodist University *	0.738	14	35
University of Minnesota	0.732	14	36
University of Houston	0.729	18	37
University of New South Wales	0.678	19	38
Baruch College-CUNY	0.661	16	39
Hong Kong Polytechnic University	0.634	18	40

Chinese University of Hong Kong	0.632	17	41
Arizona State University	0.621	20	42
University of Waterloo	0.589	16	43
University of Melbourne	0.565	14	44
George Mason University *	0.536	14	45
Purdue University	0.500	14	46
University of Hong Kong	0.417	14	47 (t)
University of Manchester	0.417	17	47 (t)
* = No PhD programs in business; (t) = Tie			

Table 5
TOP-6 WEIGHTED RESEARCH ARTICLES DEFLATED BY NUMBER OF TOP-6 AUTHORS AT INSTITUTION PER PERIOD (#2006-13, FACULTY 3-13)

Institution	2006-2013	# Faculty with Top-6 Publications	Rank
Yale University	2.028	6	1
Dartmouth College *	1.983	5	2
Tel Aviv University	1.722	3	3
University. of North Carolina-Chapel Hill	1.683	10	4
University of Washington	1.618	12	5
University of California-Berkeley	1.472	12	6
Georgia Institute of Technology	1.313	4	7
University of Rochester	1.260	8	8
University of Iowa	1.258	11	9
University of California-Los Angeles	1.229	8	10
University of Oxford	1.203	8	11
Georgetown University *	1.179	7	12
Laval University	1.139	6	13
College of William & Mary *	1.125	4	14
University of Arkansas	1.119	7	15
University of Florida	1.085	13	16
University of California-Davis *	1.069	6	17
Queen's University	1.056	8	18
University of Missouri-Columbia	1.056	12	19 (t)
University of Mississippi	1.056	3	19 (t)
University of Notre Dame	1.049	12	21
Santa Clara University	1.014	6	22
Lehigh University	1.000	3	23 (t)
University of Wisconsin-Milwaukee	1.000	3	23 (t)
York University	0.992	10	25
University of Wisconsin-Madison	0.986	12	26
Cardiff University	0.970	11	27
SUNY-Buffalo	0.967	5	28
Colorado State University *	0.944	3	29 (t)
University of New Mexico *	0.944	3	29 (t)
Carnegie Mellon University	0.938	8	31
University of British Columbia	0.917	11	32 (t)
Naval Postgraduate School *	0.917	3	32 (t)
University of Calgary	0.917	5	32 (t)
University of Utah	0.917	10	32 (t)
University of South Carolina	0.906	12	36
University of Connecticut	0.883	5	37
Bentley University	0.880	9	38

Georgia State University	0.878	13	39
University of Oklahoma	0.854	8	40
Rice University	0.848	11	41 (t)
University of Colorado-Boulder	0.848	11	41 (t)
Northeastern University *	0.842	10	43
Virginia Commonwealth University	0.833	4	44
INSEAD (France)	0.819	6	45
Brigham Young University	0.799	12	46
Korea University	0.792	3	47
University of California-Irvine	0.780	11	48
Saint Louis University	0.778	3	49 (t)
University of Central Florida	0.778	3	49 (t)
University of Edinburgh	0.778	6	49 (t)
University of Oregon	0.769	9	52
University of Tennessee	0.767	5	53
Temple University	0.758	10	54
Monash University	0.740	8	55
North Carolina State University *	0.729	4	56
Seoul National University	0.726	7	57
University Carlos III De Madrid	0.722	3	58
University of Navarra (Spain)	0.717	5	59 (t)
University of Warwick	0.717	5	59 (t)
George Washington University	0.715	12	61
Lingnan University (Hong Kong)	0.708	6	62
Florida Atlantic University	0.694	3	63 (t)
Iowa State University	0.694	3	63 (t)
University of Nebraska-Lincoln	0.683	5	65
Singapore Management University	0.669	13	66
University of St. Andrews	0.667	5	67 (t)
King's College London	0.667	3	67 (t)
Miami University *	0.667	3	67 (t)
University of Cyprus	0.667	3	67 (t)
University of Massachusetts-Amherst	0.667	10	67 (t)
University of Twente	0.667	3	67 (t)
Virginia Polytechnic Institute & State University	0.667	4	67 (t)
University of Miami	0.667	13	67 (t)
National Chengchi University (Taiwan)	0.646	4	75
* = No PhD programs in business; (t) = Tie			

Thus, the results presented in Tables 4 and 5 provide an innovative, efficient, and uniform measure of accounting program rankings that control for faculty size. A comparison of the rankings of the top-35 programs rankings for institutions with > 13 accounting faculty with and without faculty size adjustments is presented in Table 6. This table shows changes for Table 4 relative to Table 3 for the top-35 institutions with > 13 accounting faculty with a top-6 publication during the 2006-2013 period.

Institution	Faculty > 13 Faculty Size Adj. Table 4 Rank	Non-Adjusted Table 3 Rank	Change
Stanford University	1	3	2
University of Chicago	2	1	-1
Nanyang Technological University (Singapore)	3	12	9
University of Toronto	4	11	7
University of Texas-Austin	5	2	-3
Massachusetts Institute of Technology	6	8	2
University of Michigan	7	7	0
University of Southern California	8	6	-2
New York University	9	10	1
Michigan State University	10	18	8
Pennsylvania State University	11	16	5
Columbia University	12	14	2
Ohio State University	13	13	0
London School of Economics	14	25	11
University of Pennsylvania	15	4	-11
Emory University	16	22	6
University of Illinois	17	5	-12
University of Arizona	18	31	13
Harvard University	19	9	-10
University of Georgia	20	15	-5
Hong Kong University of Science & Tech.	21	23 (t)	2
University of Pittsburgh	22	23 (t)	1
Texas A&M University	23	29	6
Washington University-St. Louis	24	32	8
Northwestern University	25	28	3
Cornell University	26	35	9
Duke University	27	20	-7
University of London (LBS)	28	30	2
University of Texas-Dallas	29	26 (t)	-3
Tilburg University	30	44	14
University of Alberta	31	34	3
Indiana University	32	19	-13
Erasmus University (Rotterdam)	33	47	14
Boston College	34	48	14
Southern Methodist University *	35	53	18

Table 6
COMPARISON OF ACCOUNTING PROGRAM RANKINGS IN TABLES 3 AND 4
FOR 2006-2013 (FACULTY > 13)

* = No PhD programs in business

The results indicate that the faculty size adjustment resulted in no change in rankings for two institutions. Nevertheless, while 10 (29%) institutions were ranked lower, the majority 23 (66%) of institutions were ranked higher. Double-digit decreases in rankings were found for Indiana University (dropped from 19th to 32nd), University of Illinois (dropped from 5th to 17th), University of Pennsylvania (dropped from 4th to 15th), and Harvard University (dropped from 9th to 19th). Double-digit increases in rankings were found for Southern Methodist University (rose from 53rd to 35th), Tilburg University (rose from 44th to 30th), Erasmus University (rose from 47th to 33rd), Boston College (rose from 48th to 34th), University of Arizona (rose from 31st to 18th), and the London School of Economics (rose from 25th to 14th).

Only four of the universities (Tilburg University, Erasmus University, Boston College, and Southern Methodist University) ranked in the top-35 programs in the faculty-size adjusted list (Table 4) were not top-35 ranked in the non-adjusted computations (Table 3). Using the Wilcoxon signed-ranks test, the rankings in Tables 3 and 4 were compared. The results indicate that the medians of the two sets of rankings significantly differ at $z = -2.004$, $r = .24$, $p = .045$; and a comparison of the top-45 programs included in both Tables 3 and 4 (George Mason University, Purdue University, and the University of Manchester are not included in Table 3) reveals an even higher level of significant difference: $z = -3.119$, $r = .33$, $p = .002$.

A major innovation of this study is the determination of separate rankings (Table 5) for programs with small faculties (defined in this study as programs with from 3-13 faculty members). The size-adjusted rankings provide smaller programs with a measure of faculty research quality which may be missing in overall rankings. For example, the Ivy League schools of Yale (with 6 faculty members) and Dartmouth (with 5 faculty members), which are ranked 42nd and 57th respectively in the overall rankings, are ranked 1st and 2nd respectively when the results are adjusted for faculty size. Size-adjusted rankings provide smaller programs with rankings that may be useful in recruiting faculty and students since they highlight the quality of research produced by a smaller faculty, and thus provide an important means of program differentiation.

Table 7 COMPARISON OF ACCOUNTING PROGRAM RANKINGS IN TABLES 3 AND 5 FOR 2006-2013 (FACULTY 3-13)			
Institution	Faculty 3-13 Faculty Size Adj. Table 5 Rank	Non-Adjusted Table 3 Rank	Change
Yale University	1	42	41
Dartmouth College *	2	57	55
Tel Aviv University	3	99	97
University of North Carolina-Chapel Hill	4	26	22
University of Washington	5	17	12
University of California-Berkeley	6	21	15
Georgia Institute of Technology	7	98	91
University of Rochester	8	56	48
University of Iowa	9	36	27
University of California-Los Angeles	10	59	49
University of Oxford	11	60	49
Georgetown University *	12	72	60
Laval University	13	84	71
College of William & Mary *	14	111	97
University of Arkansas	15	76	61
University of Florida	16	33	17
University of California-Davis *	17	90	73
Queen's University	18	70	52
University of Missouri-Columbia	19 (t)	39	20
University of Mississippi	19 (t)	130	111
University of Notre Dame	21	40	19
Santa Clara University	22	93	71
Lehigh University	23 (t)	134 (t)	111
University of Wisconsin-Milwaukee	23 (t)	134 (t)	111
York University	25	58	33
University of Wisconsin-Madison	26	43	17

Cardiff University	27	51	24
SUNY-Buffalo	28	104 (t)	76
Colorado State University *	29 (t)	141 (t)	112
University of New Mexico *	29 (t)	141 (t)	112
Carnegie Mellon University	31	78	47
University of British Columbia	32 (t)	55 (t)	23
Naval Postgraduate School *	32 (t)	144	112
University of Calgary	32 (t)	109	77
University of Utah	32 (t)	65	33
* = No PhD programs in business; (t) = Tie			

The results indicate that the faculty size adjustment resulted in ranking changes for all institutions with 3-13 accounting faculty, and that *none of these institutions were ranked lower (i.e., the rankings increased for all 35 institutions).* The increase in rankings ranged from 17-112, and the following six institutions experienced triple-digit increases in rankings: Colorado State University and University of New Mexico (rose from 141st to 29th), Naval Postgraduate School (rose from 144th to 32nd), Lehigh University and University of Wisconsin-Milwaukee (rose from 134th to 23rd), and University of Mississippi (rose from 130th to 19th).

Contrary to the Table 6 results, only four of the universities (University of North Carolina-Chapel Hill, University of Washington, University of California-Berkeley, and University of Florida) ranked in the top-35 programs in the 3-13 faculty-size adjusted list (Table 5) were also top-35 ranked in the non-adjusted computations (Table 3).

To highlight the impact and significance of the innovation of separate rankings for programs with small faculties (defined in this study as programs with from 3-13 faculty members), a comparison of the top-35 programs rankings for institutions with 3-13 accounting faculty with and without faculty size adjustments is presented in Table 7. This table shows changes for Table 5 relative to Table 3 for institutions with 3-13 accounting faculty with a top-6 publication during the 2006-2013 period. Using the Wilcoxon signed-ranks test, the rankings in Tables 3 and 5 were compared and the results indicate that the medians of the two sets of rankings are highly significantly different at $z = -5.160$, $r = .62$, $p = .000$.

Comparing This Study's Rankings with Other Accounting Program Rankings

Table 8 presents the following: 1) this study's top-75 accounting program rankings based on top-6 publications from 2006-2013; 2) Chan et al.'s (2007) accounting program rankings for this study's top-75 institutions based on publications in 24 accounting journals from 1991-2005; 3) Chan et al.'s (2007) accounting program rankings for this study's top-75 institutions based on publications in top-5 accounting journals from 1991-2005, 4) *Public Accounting Report's (PAR)* 2014 Top-25 Doctoral Programs Research rankings; and 5) PAR's 2005-2014 average Top-25 Doctoral Programs Research rankings. The *PAR* rankings are based on *PAR's* Annual Professors' Survey.[6]

To receive a *PAR* average rank, institutions were required to be ranked in six of the ten years from 2005-2014 in order. The average 2005-2014 *PAR* rankings started with the 2005 *PAR* rankings since *PAR* ranked only the top-5 accounting programs prior to 2004. The authors acknowledge that accounting program rankings by *PAR* are potentially noisy because of self-nomination bias, and are unable to test the robustness of the inferences given the lack of another source of accounting program rankings. For example, the *Financial Times* doctoral rank is not discipline-specific and is calculated according to the number of doctoral graduates

from each business school during the past three years, with additional points given if these graduates accepted faculty positions at one of the top-50 full-time MBA schools.

Table 8 THIS STUDY'S (2014) TOP 75 RANKINGS BASED ON TOP-6 ARTICLES OVER 2006-2013 COMPARED TO CHAN ET AL. (2007) RANKINGS (24 JOURNALS) AND TOP 100 RANKINGS (5 JOURNALS), AND *PUBLIC ACCOUNTING REPORT (PAR)* RANKINGS FOR 2014 AND 2005-2014 AVERAGE					
Institution	This Study's Top 75 Ranks for 2006-2013 (6 journals)	Chan et al. (2007) Ranks for 1991-2005 (24 (journals)	Chan et al. (2007) Top 100 Ranks for 1991-2005 (5 journals)	2014 *PAR* Top 25 PhD Ranks	Avg. 2005-2014 *PAR* Top 25 PhD Ranks
Univ. of Chicago	1	7	2	2	2
Univ. of Texas-Austin	2	5	5	1	1
Stanford Univ.	3	8	4	3	3
Univ. of Pennsylvania	4	3	1	6	6
Univ. of Illinois	5	21	22	4	5
Univ. of Southern Cal.	6	11	7	17	9 (t)
Univ. of Michigan	7	4	3	5	4
Mass. Institute of Tech.	8	76	41	23	18
Harvard University	9	20	16	24	16 (t)
New York Univ.	10	6	13		
Univ. of Toronto	11	77	63		
Nanyang Tech. Univ. (Singapore)	12	34	55		
Ohio State Univ.	13	31	28	25	20
Columbia Univ.	14	14	8		
Univ. of Georgia	15	48	35	16	16 (t)
Penn State Univ.	16	49	20	22	19
Univ. of Washington	17	26	9	10	7
Michigan State Univ.	18	23	25	11	11
Indiana University	19	16	19	13	9 (t)
Duke University	20	36	23		
Univ. of Cal.-Berkeley	21	13	17		
Emory Univ.	22	59	21		
Univ. of Pittsburgh	23 (t)	106	69		
Hong Kong Univ. of Science & Technology.	23 (t)	39	24		
London School of Econ.	25	10	26		
Univ. of North Carolina-Chapel Hill	26 (t)	29	10	7	8
Univ. of Texas-Dallas	26 (t)	164	81		
Northwestern Univ.	28	22	6		
Texas A&M University	29	40	53	8	14
Univ. of London (LBS)	30	223			
Univ. of Arizona	31	30	14	19	26

Washington Univ.-St. Louis	32	41	15		
Univ. of Florida	33	47	37	21	24 (t)
Univ. of Alberta	34	33	12		
Cornell Univ.	35	32	11	14	13
Univ. of Iowa	36	35	18	15	15
Univ. of Houston	37	84			
Univ. of New South Wales	38	2	34	20	22
U. of Missouri-Colum.	39	64	50		
Univ. of Notre Dame	40	55	30		
Arizona State Univ.	41	17	44		21
Yale Univ.	42	101	56		
Univ. of Wisc.-Madison	43	19	31	18	23
Tilburg Univ.	44	199			
Hong Kong Poly. Univ.	45	70			
Georgia State Univ.	46	18	52		
Erasmus Univ. (Rotterdam)	47	193			
Boston College	48	42	46		
Univ. of South Carolina	49	57	66		
Chinese Univ. of Hong Kong	50	52	89		
Cardiff Univ.	51	9			
Baruch College-CUNY	52	50	62		
Southern Methodist Univ. *	53	111	79		
Univ. of Minnesota	54	71	32		
Univ. of British Columbia	55 (t)	85	36		
Univ. of Rochester	55 (t)	86	27		
Dartmouth College *	57	92	82		
York Univ.	58	160	95		
Univ. of California-Los Angeles	59	58	29		
Univ. of Oxford	60	135	64		
Brigham Young Univ.	61	69	54		
Univ. of Waterloo	62	80	33		
Rice Univ.	63 (t)	138			
Univ. of Col.-Boulder	63 (t)	66	39		
Univ. of Utah	65	110	67		
Singapore Management. Univ.	66	50(t)			
Univ. of Miami	67	214			
George Wash. Univ.	68(t)	124			
Univ. of Calif.-Irvine	68(t)	159	78		
Queen's Univ.	70	139	72		
Northeastern Univ. *	71	82			
Georgetown Univ. *	72	123	85		
Univ. of Melbourne	73	27	48		
Bentley Univ.	74	150			

City Univ. of Hong Kong	75	52	89		
* = No PhD programs in business; (t) = Tie					
Notes: *PAR* only ranked the top-5 PhD programs prior to 2004. Institutions are required to be ranked in six out of the ten years from 2005-2014 to receive an average 2005-2014 PAR PhD rank.					

A visual review of the accounting program rankings in Table 8 highlights the extensive changes in the rankings across time, especially from Chan et al.'s (2007) rankings based on publications in 24 accounting journals from 1990-2005 versus this study's top-75 accounting program rankings based on top-6 publications from 2006-2013: none of the 75 rankings agree. This descriptive analysis is supported by the results of a statistical analysis using the Wilcoxon signed-rank test. The two lists of rankings are highly significantly different: $z = -4.903$, $r = .40$, $p < .0005$.

This result indicates that researchers using accounting program rankings in subsequent studies should consider using this study's Table 3 rankings since they are based on top-6 publications in 2006-2013 and are more current rankings than the rankings provided in Chan et al. (2007) and/or the more limited *PAR* Top-25 Doctoral Programs (Research) rankings. If accounting faculty size is relevant to the use of accounting program rankings in subsequent studies, Tables 4 and/or 5 should be used since these tables adjust the Table 3 accounting program rankings for faculty size (# faculty $\geq$ 14 in Table 4, and accounting faculty size is 3-13 in Table 5). The faculty size-adjusted rankings (Table 5) for programs that have fewer than 13 faculty members provide these institutions with ranking information that may help support their recruiting efforts.

CONCLUSION AND LIMITATIONS

Accounting program rankings research has evolved significantly over the past 45 years. Methods used in prior studies include 1) ranking programs based on responses to questionnaires and surveys, 2) rankings based on article counts from program graduates, 3) rankings based on citation analyses of program graduates, 4) rankings programs based on faculty and PhD program graduates' representation on editorial boards, 5) rankings based on measures of graduates' prestige, and most recently, 6) rankings based on multi-dimensions including topical areas and methodologies. An issue with a number of prior studies is the lack of control for faculty size, which may potentially alter the accounting program rankings. Even in studies that control for faculty size, a common additional issue is the inclusion of faculty and PhD students who were not research active, and perhaps never were research active.

To resolve these sample issues, this study demonstrates an innovative, efficient, and uniform approach for calculating faculty-size adjusted accounting program rankings using 2006-2013 publications in the top-6 accounting journals, and compares the results to non-faculty-size adjusted accounting program rankings to assess the merits of faculty-size adjusted rankings. Importantly, this faculty-size adjusted approach *can be applied to any set of accounting journals* (e.g., top-3, top-6, top-10, top-20, top-25, top-40, etc.). The study uses a database of 1,992 publications in the top-6 accounting journals from 2006-2013, and controls for faculty size by including only active researchers at each school: that is, authors who published during this period in one or more of the top-6 accounting journals. Each institution is weighted by the number of authors on each article, as well as the number of affiliations per author. The study ranks institutions 1-75 with the most weighted Research Articles in the Top-6 accounting journals from 2006-2013.

Consistent with prior studies, the analyses reveals that controlling for faculty size results in significant changes in program rankings, and suggests that future researchers who

include program rankings in their studies either use the rankings provided in this study, or utilize this study's uniform approach to update program rankings. Moreover, in addition to the overall size-adjusted rankings, this study separately presents size-adjusted rankings for accounting programs with small and large faculties. This ranking differentiation by faculty size, which is a major and significant innovation of this study, may be of particular interest to deans, accounting program administrators, and faculty of accounting programs that have 13 or fewer faculty members. Future research studies may explore the sensitivity of faculty-size adjusted accounting program rankings to the set of accounting journals (e.g., top-3, top-6, top-10, top-20, top-25, top-40, etc.) and the cut-offs employed for large versus small faculty.

The study has several limitations. First, using publication counts to rank accounting programs treats all articles equally in terms of contribution or impact to the literature, so the study restricts the analyses to Research Articles to potentially address this concern (i.e., Editorials, Obituaries, Acknowledgements, Thanks, Reflections, Annual Reports, Book Reviews, etc., were eliminated). The study also excluded Review Articles (27) and Research Notes (50) from the analyses since some institutions or faculty may give less than full credit for these articles in the P&T process. Second, this study only considers Research Articles in the top-6 accounting journals (AOS, CAR, JAE, JAR, RAST, and TAR) to mitigate concerns and issues regarding perceived and actual journal quality (Lowensohn and Samelson 2006; Herron and Hall 2004; Chan et al. 2009). No attempt was made to weight Research Articles published in the top-6 accounting journals beyond author and affiliation weighting given the subjective nature of determining and assessing weightings.

Third, the institution rankings and institution publication counts do not consider resource differences across institutions (e.g., access to more or better databases, the availability of research assistants, reduced teaching loads, or other perks and benefits that may enhance research productivity). However, since the study focuses on institutions whose accounting programs are ranked in the top-75, resource differences are expected to be minimal. Fourth, the study considers all top-6 accounting journals as equivalent journals although their impact factors differ. This approach differs from Fogarty and Jonas (2013), who note that "the existence of three top journals does not necessitate equivalency" This study makes no attempt to weight the top-6 accounting journals based on impact factors or other means given the subjective nature of determining and assessing weightings.

ENDNOTES

1. Some examples of prior accounting program rankings studies include Brown and Gardner (1985), Jacobs et al. (1986), Mittermaier (1991), Stevens and Stevens (1996), Stammerjohan and Hall (2002), Brown and Laksmana (2004), Chan et al. (2007), Chan et al. (2009), Coyne et al. (2010), Fogarty and Yu (2010), Stephens et al. (2011), and Fogarty and Jonas (2013).

2. The top-6 accounting journals are defined as the *Journal of Accounting Research (JAR)*, *Accounting Organizations and Society (AOS)*, *Journal of Accounting and Economics (JAE)*, *Review of Accounting Studies (RAS)*, *The Accounting Review (TAR)*, and *Contemporary Accounting Research (CAR)*. Prior research by Chan et al. (2009), Bonner et al. (2006), Glover et al. (2006, 2012), and Lowensohn and Samelson (2006) finds that at least five of these six journals (*AOS, CAR, JAE, JAR, RAST,* and *TAR*) are the highest rated accounting journals.

3. The database includes all authors for each of the 1,796 Research Article publications in the top-6 accounting journals from 2006-2013. It is assumed that the affiliations listed on each publication are current as of the publication date.

4. Stephens et al. (2011) and Coyne et al. (2010) use all peer-reviewed articles from the 11 journals included in their analyses. The institution inferences are unaffected if the 8 Review Articles and 8 Research Notes are included.

5. A total of 501 institutions had an author with a top-6 publication in 2006-2013, and the study excludes theinstitutions with one author (214 institutions) and two authors (72 institutions). The study includes

the 44 institutions with three authors, 24 institutions with four authors, and 20 institutions with five authors.

6. The *PAR* rankings are subject to response bias since they are based on an Annual Professors' Survey.

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THE IMPACT OF FINANCIAL STRESS ON ACADEMIC PERFORMANCE IN COLLEGE ECONOMICS COURSES

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ABSTRACT

The rising cost of higher education and the resulting amount of student debt is a current issue for not only students and their families, but also for the entire U.S. economy. This study examines the stress created by the financial burden of the high cost of a college education and the impact of that stress on students' academic performances. The results indicate that financially stressed students were more likely to be employed, worked longer hours, and received significantly lower grades in principles of economics courses. The financially stressed students were disproportionately females, minorities, and first generation college students.

INTRODUCTION AND LITERATURE REVIEW

The increase in the cost of higher education, the decrease in the real median income, and the increase in student debt are all current problems that are often discussed not only by students and parents, but also by political leaders and economic policymakers. Inflation-adjusted tuition at US public four-year higher education institutions has increased by an average of 225% since 1984 and increased by 90% since 2000 (The College Board, Trends in Higher Education, 2015). Real median US household income increased by 8.5% from 1984 to 2013, but it decreased by 8.6% from 2000 to 2013 (US Bureau of the Census, 2014). With tuition rising sharply at the same time that household incomes are falling, it should be no surprise that student college debt is sky-rocketing. Indeed, total student debt in the US rose from $364 billion in 2004 to $966 billion in 2012. In 2010 student debt surpassed credit card debt to become the second largest form of debt after mortgages (Meta, et al, NY Fed). Both the number of students borrowing and the average student debt per person has risen, with the number borrowing rising from 23 million to 39 million and the average debt rising from $15,000 to $25,000 (Meta). Seven of ten college seniors who graduated in 2012 had student loan debt. For those 2012 graduates of for-profit and non-profit colleges, the average student loan was $29,400, with 20% funded by more expensive private loans (Reed & Cochrane). The average student loan for public colleges and non-profits alone was $27,850 per borrower.

Students have reacted to the rising cost of higher education in many ways. Some students have coped with rising tuition by working more hours. Research by Kara, Orhan, Bagheri, and Tolin (2009) found a significant, negative relationship between student grades and the number of hours worked. Roughly one-third of students don't buy the required, but expensive, academic materials (Perez-Pena). Students report that lack of information on federal loans and private loans adds to their stress (Denhart, 2013).

An increase in financial stress among students, largely due to education expenses, is often reported. Various studies have found anywhere from 33% to 70% of college students experiencing stress due to financial concerns. (Fosnacht and Dong, Perez-Pena, Ross et al.,

Trombitas, and Rafidah et al.). Several studies report that between 9% and 40% of students feel that financial stress has negatively affected their academic performance. (Perez-Pena, Ross et al., and Trombitas). With the exception of Rafidah et al (2009), who found a relatively weak negative correlation between perceived stress levels and overall grade point average among students in Malaysia, very few, if any, studies have actually measured the impact of financial stress on academic performance. Fosnacht et al (2013) found that students with financial stress perceive a less supportive campus environment, but focused on ways that students cope with stress rather than the impact of that stress on academic performance. Several studies found that financially stressed students were more likely to be employed and work longer hours, leaving less time for study. Financially stressed students were more likely to drop courses and less likely to graduate. (Welbeck et al, Kara et al, Trombitas). The purpose of this research is to determine the impact of financial stress on actual academic performance by measuring the effect of the stress on grades earned in principles of microeconomics and macroeconomics classes at a public, state university. By using a grade earned at the time that the stress is reported, this study seeks to establish a stronger link between the presence of financial stress and its effect on academic performance.

METHODOLOGY AND RESULTS

During the 2012-2013 academic year, 231 students in principles of economics courses answered a survey modeled after the 2012 National Survey of Student Engagement that measured their level of financial stress in several areas, the impact of that stress on aspects of their academic experience, the educational background of their parents, their employment status, and the number of hours worked if they were employed. Additional characteristics, including gender, ethnicity, GPA, and ACT scores, were obtained from University student records. Academic performance was measured by the student's final percentage grade in the principles of microeconomics or macroeconomics course in which they were enrolled at the time of the survey.

Table 1 STUDENT CHARACTERISTICS (n=231)	
Gender	
Female	53.7%
Male	46.3%
Ethnicity	
African American	29.4%
Asian	2.6%
Hispanic	1.3%
Caucasian	66.7%
Average Grade	75.4
Average GPA	2.81
Average ACT	21.24 (4.16) n=187

Table 1 STUDENT CHARACTERISTICS (n=231) cont.	
Parental Education	
Neither parent attended college	30.3%
Father only attended college	10.4%
Mother only attended college	25.5%
Both parents attended college	33.8%

Student Work Hours	
Not employed	38.1%
< 20 hours per week	18.2%
>20 hours per week	43.7%
Average hours worked	25.1 (11.29) n=143
Financial Stress	
Worried about ordinary expenses	82.7%
Worried about paying for college	67.5%
Missed activities due to lack of money	54.5%
Couldn't afford required academic materials	58.9%
Financial concerns interfered with academics	43.7%

Table 1 identifies the student characteristics. Almost 54% of the students in the survey were female, while approximately 46% were male. Approximately 33 percent were minority students, which included African American, Hispanic, and Asian students. The average grade for all 231 students in principles of economics was 75.4, and the average GPA was 2.81. The average ACT for 187 students was 21.24. Forty-four students did not have ACT scores. Thirty-eight of those forty-four students transferred from a two-year college and were not required to submit ACT scores. Of the forty-four students with no ACT score, twenty-one stated that financial stress had affected their academic performance. Slightly more than thirty percent of the students were first generation college students. About 62% of the students worked either part-time or full-time. Of the 143 students who were employed, the average number of hours worked per week was 25.1. With respect to financial stress, about 83% of the students reported that they worried about being able to meet ordinary expenses, and 68% worried about paying for college. Fifty-nine percent chose not to purchase required academic materials due to their cost, and fifty-five percent reported missing academic activities due to cost. Finally, 43.7% of the students stated that financial concerns had interfered with their academic performance.

Table 2 AVERAGE GRADES IN PRINCIPLES			
	Financially Stressed	Not Financially Stressed	Significance (p-value)
Paying for college	73.9 (12.75) n=156	78.4 (14.66) n=75	.009
Buying books	73.9 (13.27) n=136	77.6 (13.67) n=95	.02
Academics affected	71.7 n=101	78.3 n=130	.0001

Table 2 presents the average grades of the students in the sample. In order to determine the impact of financial stress on academic performance, this analysis compares the average grade for students that indicated feeling financial stress in several areas, which included being concerned about paying for college, not purchasing academic materials due to cost, and feeling that financial stress had affected their academic performance. The average principles course grade for the 156 students that were worried about paying for college was 73.9, compared to 78.4 for the 75 students that weren't worried about paying for college. One hundred and thirty-six students answered that they had not purchased required academic materials due to financial concerns. Their average grade was 73.9, while the 95 students that were able to purchase required materials had an average grade of 77.6. One hundred and one students stated that financial concerns had interfered with their academic performance. Their

average grade was 71.7 while those that reported that financial concerns did not affect their performance had an average grade of 78.3. All of the differences were highly statistically significant.

	Stressed	Not Stressed	Significance
Table 3 **STRESS CHARACTERISTICS OF STUDENTS**			
Female	63.4%	46.2%	.008
Minority	39.6%	28.5%	.038
Average GPA	2.60	2.98	.0001
Average ACT	20.14	22.07	.0008
Average work hours	20.0	12.0	.00003
Neither parent attended college	36.6%	25.2%	.03

Table 3 compares the characteristics of the 101 students that reported that financial concerns had affected their academic performance with the 131 students that reported no impact on academic performance from financial stress. Of the students who reported that financial concerns affected their academic performance, a significantly higher percentage were female and minority compared to those not affected by financial concerns. In addition, a significantly higher proportion of the stressed students had parents who did not attend college. The average GPA and average ACT scores were significantly lower for the students affected by financial stress than those not affected. The stressed students worked an average of 20 hours per week compared to 12 for the non-stressed. A significantly higher proportion of the financially stressed students were first generation college students.

The results of the comparison of the academic performance for the groups with a higher proportion of students who were financially stressed are shown in Table 4. For each group, the average grade of the stressed students was significantly lower than the grade of the students in the same group that weren't financially stressed. For the 124 women in the sample, the average grade for the stressed students was 72.27, compared to 78.85 for the students who weren't stressed. For first generation college students, the difference was 74.1 for the stressed students and 79.12 for the non-stressed students. Finally, for the 77 minority students in the sample, the average grade for stressed minority students was 66.8, while it was 70.3 for minority students who were not financially stressed.

	Financially Stressed	Not Stressed	Significance (p-value)
Table 4 **AVERAGE GRADES FOR AT-RISK GROUPS**			
Females	72.27 (11.89) n=64	78.85 (11.72) n=60	.001
First generation college students	74.1 (11.63) n=37	79.12 (13.15) n=33	.048
Minorities	66.8 (12.9) n=40	70.3 (9.99) n=37	.09

Table 4 illustrates the average grade for students in the at-risk group. These statistics suggest that students who are financially stressed belong to groups which are likely to be disadvantaged and who would benefit greatly from a college education that would increase their opportunities for economic and financial success. All students, but especially these groups, are burdened by the rising cost of higher education. Many have responded by working more hours, leaving less time to study, resulting in lower grades, all of which decreases the likelihood of success in college and beyond.

SUMMARY AND CONCLUSIONS

This research establishes a statistically significant link between financial stress and academic performance. Students who were worried about paying for college averaged 4.5 percentage points lower in class grades than students who were not worried about paying for college. There was a 3.7 point difference in the course grade for students who weren't able to afford to purchase the required textbooks. Students who stated that the financial stress affected their academic performance had course averages that were 6.6 points lower than those who were not financially stressed. It appears that certain groups of students were more affected by stress than others. A significantly higher proportion of the stressed students with lower scores were women, minorities, and first-generation college students, groups with below average rates of college attendance. Working more hours to meet financial obligations, they have less time to study, which has a negative impact on their academic performance. With lower grades, these financially stressed, often lower income, students are less likely to complete the college education that they need to improve their chances for a better future. The scope of the problem is even broader because students must repay large amounts of student debt, which can potentially have a negative impact on economic growth by hampering their ability to purchase big-ticket items.

This research implies that in order to help students get the education they need to become productive members of the economy, their financial stress should be reduced. This might be accomplished with efforts to improve students' financial literacy, especially concerning information on student loans, grants, co-ops, and scholarships, both at the high school and college level. At the federal level, financial aid for higher education, such as Pell grants, support for student loans, and other measures that help students from low income families afford college, should be increased. States need to increase their funding for higher education, while colleges must stop the annual higher than inflation-adjusted increases in tuition. In 1989 tuition made up 25% of the revenue at state universities. Now the tuition proportion is 47.1%, resulting in increased tuition costs for students, a major source of financial stress which, in many cases, leads to adverse academic and economic outcomes (Douglas-Gabriel).

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A ROADMAP FOR USING KOTTER'S ORGANIZATIONAL CHANGE MODEL TO BUILD FACULTY ENGAGEMENT IN ACCREDITATION

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ABSTRACT

Accreditation standards often require intense faculty involvement in activities directed at achieving accreditation. However, achieving that involvement often poses significant challenges, as faculty may be quite reluctant to participate in those activities. In this paper, Kotter's (1996) eight-step model of organizational change is used to develop strategies for encouraging faculty engagement and participation in accreditation activities. Specific implementation recommendations, as well as a discussion of the advantages and disadvantages of the process, are also presented.

INTRODUCTION

Accreditation has become vital for many universities in different countries. Accreditation may influence students in their decision of which university to attend, provide external validation and credibility, and assure accountability and quality to stakeholders (Brink & Smith, 2012). The Association to Advance Collegiate Schools of Business International (AACSB) is a leading international accreditor of business and accounting programs at all post-secondary levels of academics. Indeed, according to the AACSB website (AACSB, 2013), "AACSB Accreditation is known, worldwide, as the longest standing, most recognized form of specialized/professional accreditation an institution and its business programs can earn." AACSB's reputation for accreditation rigor rests on its accreditation standards, which "challenge post-secondary educators to pursue excellence and continuous improvement throughout their business programs" (AACSB, 2013). These standards were first promulgated in 1919 and are updated and revised for each accreditation cycle, most recently in 2013 (and updated in 2015).

A key driver in the successful achievement of these standards—whether by institutions seeking initial accreditation or for accredited institutions seeking to maintain their accreditation—is faculty. The AACSB 2013 business accreditation standards center on three key principles: engagement, innovation, and impact. Who is primarily responsible for implementing and evaluating these goals? Faculty. Given that today's faculty is likely to be over-committed, over-stressed, and under-appreciated, what is the best way to implement manageable, sustainable commitment to achieving AACSB standards? Top-down imposition by administrators is likely to be met by resistance or outright sabotage. Thus, understanding how to effectively and authentically engage faculty in the accreditation process is critical. Substantial research has shown that participation in decision-making about – and implementation of – organizational initiatives fosters greater understanding and acceptance of those initiatives. However, creating

environments and strategies engendering effective participation that support and sustain organizational goals can be challenging. One approach that has proven useful in that regard is Kotter's eight stage model of change management (Kotter, 1996). This model provides a roadmap for developing methods and tactics for creating and maintaining both participant engagement and continuous organizational improvement and is thus directly applicable to fostering faculty participation in accreditation activities.

In this paper, the authors first discuss the AACSB accreditation process and standards and how they involve faculty engagement. Kotter's model of change management is then used to develop a roadmap to promote faculty engagement. For each stage in the process, examples used in several accreditation efforts are provided. Lastly, the paper concludes with a discussion of the advantages and disadvantages of the process as well as future challenges.

LITERATURE REVIEW

AACSB Accreditation

AACSB provides specialized accreditation for business and accounting programs at the bachelor's, master's, and doctoral levels. AACSB accreditation is internationally recognized and highly sought after. There are currently 716 AACSB accredited business institutions located in 48 countries and territories (http://www.aacsb.edu/accreditation/accredited-members/).

Collegiate business schools offering accounting and business administration degrees may apply for an AACSB Accreditation review. Initially, the business school must establish its eligibility for accreditation. "During the initial accreditation process, the school is evaluated on how well it achieves AACSB's accreditation standards, through a process of self-evaluation and peer review. After earning AACSB accreditation, the business school undergoes periodic peer reviews of its strategic improvement to continue its accreditation" (AACSB 2013, 2015).

AACSB adopted new accreditation standards on April 8, 2013 and recently updated these standards on January 31, 2015. The standards for business accreditation are comprised of fifteen standards, broken down into four categories: 1) Strategic Management and Innovation (Standards 1-3); 2) Participants-Students, Faculty, and Professional Staff (Standards 4-7); 3) Learning and Teaching (Standards 8-12); and 4) Academic and Professional Engagement (Standards 13-15). See Table 1 for a summary of all of the business accreditation standards. All of these standards focus on three vital areas: engagement, innovation, and impact.

Table 1	
AACSB 2013 Standards for Business Accreditation	
Standard	**Description**
Strategic Management and Innovation	
Standard 1: Mission, Impact, Innovation	Clear and distinctive mission
Standard 2: Intellectual Contributions, Impact, and Alignment with Mission	High quality intellectual contributions consistent with mission and strategy
Standard 3: Financial Strategies and Allocation of Resources	Financial strategies to provide resources to support mission and strategy
Participants – Students, Faculty, and Professional Staff	
Standard 4: Student Admissions, Progression, and Career Development	Policies/procedures for student admission, degree completion, career development
Standard 5: Faculty Sufficiency and Deployment	Faculty sufficiency to ensure quality programs
Standard 6: Faculty Management and Support	Processes to support faculty throughout career
Standard 7: Professional Staff Sufficiency and Deployment	Professional staff/services sufficient to ensure quality programs
Learning and Teaching	
Standard 8: Curricula Management and Assurance of Learning	Processes for determining/revising degree program learning goals and curricula
Standard 9: Curriculum Content	Curriculum content is appropriate for degree program
Standard 10: Student-Faculty Interactions	Curricula facilitate student-faculty and student-student interaction
Standard 11: Degree Program Educational Level, Structure, and Equivalence	Degree program structure and design ensure high-quality outcomes
Standard 12: Teaching Effectiveness	Policies/procedures to enhance teaching effectiveness
Academic and Professional Engagement	
Standard 13: Student Academic and Professional Engagement	Curricula facilitate student academic and professional engagement
Standard 14: Executive Education	Executive education complements teaching/learning and intellectual contributions
Standard 15: Faculty Qualifications and Engagement	Maintain and strategically deploy participating and supporting faculty

Note: Adapted from AACSB Eligibility Procedures and Accreditation Standards for Business Accreditation. Retrieved February 20, 2015, from http://www.aacsb.edu/~/media/AACSB/Docs/Accreditation/Standards/2013_BusinessStds_Update-Jan2015_Final.ashx.

Standards 1 through 3 address three critical and related components: mission and strategy; scholarship and intellectual contributions; and financial strategies. The faculty and administration develop the mission and strategic vision of the school. Scholarship and intellectual contributions are the product of faculty research efforts. The financial strategies of the school are developed by the administration and faculty in an effort to effectively allocate scarce resources, of which faculty is a large component. Standards 4 through 7 focus on the admission, support, and progression of students, as well as on the deployment of sufficient faculty and professional staff to support the achievement of the school's mission. Two of these standards (5 and 6) directly affect faculty. Standards 8 through 12 relate to the critical areas of teaching and learning. These standards address curriculum content, management and assurance of learning, student-faculty interactions, degree program design, and teaching effectiveness. The last three standards (13 through 15) address student academic and professional engagement, executive education, and faculty qualification and engagement. Standards 8 through 15 all require faculty engagement.

Managing Organizational Change

As discussed above, faculty engagement, involvement, and participation form the bedrock for AACSB standards and are thus integral to a successful accreditation process and

outcome (e.g., Andrade, 2011; Eschenfelder, Bryan, & Lee, 2013; Zocco, 2011). Yet, many faculty are reluctant to participate in accreditation-related activities such as assessment and strategic planning – be it due to lack of interest, lack of time, lack of belief in the importance or suitability of accreditation for their colleges, or any of a plethora of other sources of resistance. Moreover, the normal degree of faculty participation and involvement varies greatly across institutions. Thus, in addition to persuading individual faculty members to support accreditation activities, substantive culture and organizational change at the college or school level is crucial to initiate and sustain faculty engagement.

Although models of organizational change abound, most rely on Lewin's (1947) classic framework which posits three phases of change: unfreezing, moving, and refreezing (Osland, Kolb, Rubin & Turner, 2007). In the initial phase, unfreezing, the focus is on creating a strong need for change – in other words, convincing potential participants (in this case, faculty) that change is crucial. The second phase, moving, involves relinquishing old behaviors and creating new ones. Finally, refreezing centers on making the new behaviors habitual or institutionalizing the change. Despite the popularity and intuitive appeal of this formulation, it has been criticized for somewhat vague recommendations regarding specific actions needed to produce change. One model that may address these criticisms is Kotter's (1996) eight-step model of organizational change, depicted in Figure 1. The steps are: 1) create a sense of urgency; 2) build a guiding team; 3) get the vision right; 4) communicate the vision for buy-in; 5) empower action; 6) create short-term wins; 7) don't let up; and 8) make change stick. An advantage of this model is that it incorporates more specific procedural recommendations and clearly identifies the new behaviors desired. Additionally, it explicitly focuses on behavioral, cognitive, and especially affective responses to change. Thus, change agents are provided with practical guidance on issues that have been identified as crucial to the success of change efforts (Oreg, Vakola, & Armenakis, 2011).
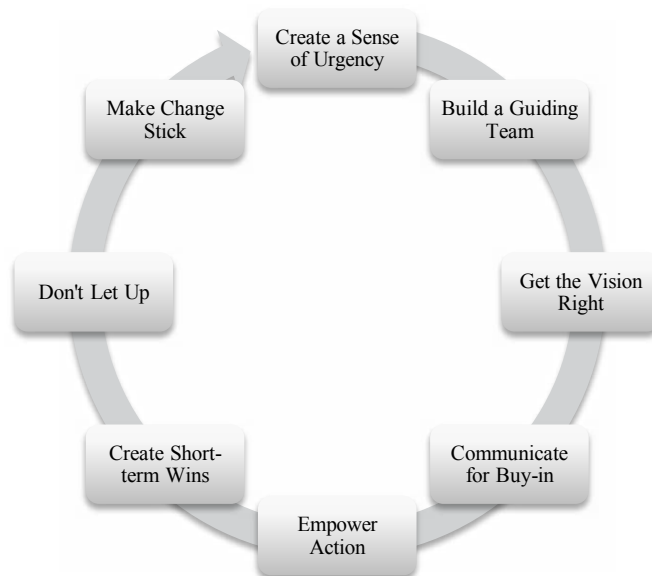

Figure 1: Kotter's (1996) Eight-Step Model of Organizational Change

A recent review concludes that, although no studies examine the full scope of this model, substantial literature supports the processes prescribed in the various stages of the model (Appelbaum, Habashy, Malo, & Shafiq, 2012). Other work has demonstrated the usefulness of

this model in higher-education environments including engineering (Borrego & Henderson, 2014), dentistry (Guzmán, Gely, Crespo, Matos, Sánchez, & Guerrero, 2011), and nursing (Springer, Clark, Strohfus, & Belcheir, 2012) settings. Thus, the model appears to be one useful approach to enhancing faculty participation and engagement in business accreditation activities.

A ROADMAP FOR ENHANCING FACULTY INVOLVEMENT

Table 2 provides an overview of each step in Kotter's model, describes specific procedural recommendations, and presents examples relevant to AACSB accreditation activities. The following sections discuss those issues in more detail.

Table 2
Applying Kotter's Eight-Step Model of Change to Build Faculty Buy-In for Accreditation

Step	How To Do It	Examples

1. Increase urgency: People endorse the need for change and begin to push for new behaviors	1. Provide tangible, vivid evidence of need for change, preferably from external sources
	2. Reduce complacency and negativity
	3. Appeal to specific interests and needs of recipients
		1. Used AACSB and WASC accreditation as a driver for change
		2. Presented both potential losses and gains by emphasizing
		  a. Instances of schools being put on continuing review by the accrediting bodies
		  b. Instances of successful implementation of assessment plans and data gathering that helped improve insight into student learning and achievement

2. Create a guiding coalition: Form a group powerful, influential, and knowledgeable enough to guide change and develop a sense of teamwork and trust	1. Create incentives and structures to encourage involvement from key participants 2. Reinforce teamwork	1. Department chairs and faculty nominated "opinion leaders" in their departments 2. Team meetings were conducted virtually – no face-face meetings were held. This was a significant inducement in recruiting team members 3. Team members functioned as ambassadors for the assessment process, informally lobbying others about the benefits and need for assessment
3. Get the vision right: Create a vision and strategy tailored to the change	1. Develop concise visions and strategies that touch the head and the heart that can clearly guide the change effort	1. Emphasized linkages between school mission and accreditation 2. Identified strategies supportive of widely endorsed values in the mission through college-wide surveys and meetings 3. Vision used to allay fears; demonstrate the value of key initiatives
4. Communicate for buy-in: Enhance understanding and acceptance of the change so that new behaviors begin to reflect that change	1. Communication should be trustworthy and easy to grasp 2. Adapt communication strategies to the needs, desires, and concerns of the potential change recipients 3. Ensure that communications are "heard" and make it through the typical communication clutter	1. Associate dean and dean continually communicated urgency and importance of accreditation and assessment via email and meetings 2. Widely communicated results of surveys demonstrating support for the efforts and areas for improvement, thus spurring further change efforts 3. Presentations to each department on assessment and AACSB guidelines 4. Working sessions to help design assessment plans 5. College committees consisting of elected faculty oversaw the process 6. Accreditation team served as ambassadors for accreditation

5. Empower action: Remove obstacles to action and reward behaviors that reinforce the change	1. Highlight actions of influential people that are supportive of the change
	2. Develop reward and recognition systems that celebrate efforts toward change
	3. Expand the range of participants
		1. Created and widely disseminated an assessment handbook
		2. Instituted early small experiments in assessment and other areas (new faculty orientation, mentorship program)
		  a. Gave faculty a sense that this process could be manageable and appealed to long-standing values
		3. Face-face meetings and on-line surveys to obtain faculty input
		  a. Communicated the results to all faculty within one week
		4. Created stipends to reward activities supporting accreditation

6. Create short-term wins: Support, communicate, reinforce efforts that move the change to reality	1. Identify "low-hanging fruit" and dedicate resources toward accomplishing successful efforts to encourage participation and support
	2. Widely communicate and celebrate wins
		1. Results of assessment experiments helped faculty see tangible outcomes
		2. Examples of significant wins:
		  a. Guiding team achieved an 83% faculty response rate for the assessment surveys that occurred early in the process
		  b. Securing approval of the assessment plan shortly after it was developed by the accreditation team also provided significant win

7. Don't let up: Continue to support continuously more challenging endeavors to promote the change	1. Do not be satisfied with the first improvements and changes 2. Continue reducing obstacles and streamlining processes, adapting to new data and evidence 3. Continue creating urgency	1. Continued communication (emails, internal web page, face-face meetings) 2. Attempts to streamline various reporting and compliance processes to ease faculty workload

Table 2
Applying Kotter's Eight-Step Model of Change to Build Faculty Buy-In for Accreditation

Step	How To Do It	Examples

8. Make change stick: New behavior become the norm	1. Establish tangible improvements
	2. Use orientations, training, other vehicles to instill/reinforce change
	3. Develop reward and recognition systems that institutionalize change
	4. Align resource systems with change
		1. Develop reward and recognition systems supporting of accreditation
		   a. Travel, course releases aligned to faculty qualifications
		   b. Support resources for data collection and analysis aligned with assessment efforts
		2. Develop processes that support continuous improvement
		   a. Develop curriculum management structures that facilitate curriculum review and enhancement

Note: Adapted from Appelbaum, Habashy, Malo, and Shafiq (2012), Kotter (1996), Kotter and Cohen (2002), and Osland, Kolb, Rubin, and Turner (2007).

Step 1—Create a Sense of Urgency

Traditionally, this first step of the model centers on articulating a compelling rationale for change and recognizing the importance of speed in implementing the change – in other words, addressing Lewin's (1947) unfreezing process. Often inherent in this stage is identifying and discussing potential crises or major opportunities. Change agents should focus on reducing complacency by providing dramatic, vivid rationales for the need for change, ideally including evidence from credible, external sources. It is important that the external source of urgency be both credible and valid for the change targets. For example, a top-down approach of "the Dean, the Provost, and the President are committed to re-accreditation" may motivate some faculty but fail to appeal to others. Thus, to be persuasive and effective, any strategies must be carefully crafted to meet the goals and needs of the faculty under consideration.

Identifying both potential losses and benefits was the most compelling approach to reach faculty at the authors' institution. The faculty Director of Accreditation made pitches at meetings of each department and in open faculty forums presenting both potential losses/crises—such as being put on continuing review or being denied accreditation altogether—and potential gains such as the improved insight into student learning and achievement that might be achieved from the successful implementation of assessment plans to gather helpful data. Examples from other institutions provided particularly vivid demonstrations of both the benefits of accreditation and the disadvantages of ultimately failing to meet accreditation standards. The director was careful to acknowledge that there was going to be more work for faculty (thus addressing the negative emotions that might arise), but also emphasized the opportunity for faculty: "How can re-accreditation be used to programmatically improve what is done for students and help achieve the goals of the faculty and college?" Again, it is critical that the evidence and rationale appeal to the interests and needs of the particular faculty involved. Thus, appeals to enhancing research, community engagement, or other issues of importance to faculty may be more appropriate in other institutions.

Step 2—Build a Guiding Team

Successful change efforts require the backing and on-going support of powerful and influential organizational decision-makers and stakeholders (e.g., Kanter, 2003). Thus, the task in this stage is to assemble a team with enough power and influence in the organization to lead the change effort and, importantly, to encourage and persuade others to support and implement the changes. Often, this also involves identifying the appropriate incentives (both monetary and/or non-monetary) to encourage that participation. In academic institutions, it is particularly critical that faculty and change recipients regard the guiding coalition as a team that is credible,

influential, and trustworthy. Again, both the composition of the team and incentives will vary depending on the characteristics of the organization and the faculty.

A guiding team composed of faculty opinion leaders representing all departments and ranks was believed to be most appropriate for the change effort at the authors' institution. The accreditation director asked department chairs to nominate faculty opinion leaders in their departments. Further, faculty from each rank (Professor, Associate Professor, Assistant Professor, Instructor) were also asked to nominate opinion leaders from within their rank to make sure that influential representatives from all career stages were heard. Team meetings were conducted virtually — a significant incentive in recruiting team members. These opinion leaders functioned as ambassadors for the accreditation process, both making sure that faculty input was communicated "upward" to administrators and also informally lobbying "outward" to other faculty regarding the benefits and necessity of accreditation. They also were influential in persuading their colleagues to develop and implement a number of accreditation activities.

Step 3—Get the Vision Right

Kotter's (1996) goal in this stage is to create a vision that clearly and concisely communicates the purpose of the change effort. Kotter notes that visions must appeal to both the head and the heart. Thus, an approach that engages faculty both cognitively and affectively is the most likely approach to engender faculty buy-in. The vision is critical as it is used to guide decisions and activities that support the change effort. Typically, a first draft is created by a team composed of influential participants and decision-makers (often the guiding team for the change effort). Input from key stakeholders is then obtained and the vision revised to reflect that input. This process continues until a version that is acceptable to the participants is obtained. A large body of research shows that, when appropriately implemented, participating in decision-making tends to increase comprehension of and support for those decisions, which in turn helps smooth and speed implementation (Leana, Locke, & Schweiger, 1990). Consequently, ensuring sufficient participation in the development of the vision is crucial.

An example of how this can be worked in practice is a process used to revise the College Mission, Vision, and Values Statement. The initial statements were developed several years previously by a team of faculty opinion leaders and key college administrators. The process for this new revision incorporated both the existing committee structure as well as open forums to incorporate faculty input. The initial draft of these revised statements was worked on by the Accreditation Director in concert with college administrators and the accreditation steering committee. This draft then was sent to the college committees including, among others, the Graduate and Undergraduate Curriculum Committees, the Research and Development Committee, and the Academic Planning Committee. This approach was particularly useful because the members of the college committees are elected by their peers and thus are seen as credible and trustworthy. The feedback and input was incorporated and the newly revised statements were taken to several open faculty forums for explanations, questions, and consideration. Finally, after incorporating feedback from these sessions, the resulting statements were voted on and approved by the college faculty. All the way through this process, linkages between the school mission and accreditation activities were emphasized.

A similar approach was used to revise program learning goals, obtaining input from standing committees and through faculty forums. In addition, the faculty ambassadors used the vision to allay fears about the change (e.g., assessment is about student learning, not about faculty teaching) and to demonstrate the value to attaining key strategic initiatives (e.g., the

results from the accreditation process can be used to truly improve student learning and the curriculum).

Step 4—Communicate the Vision for Buy-in

After establishing an inclusive, recursive system for generating the vision so that it is driven to some degree by faculty input (as was done in the previous step), it is important to communicate the vision—and to emphasize the importance of faculty input and shared institutional values in the vision. This will help faculty see that their desires and concerns have been heard and helps them take ownership of the vision, as they now have an investment in the vision. Communication should be simple and especially should be trustworthy. It must also be "heard" – in other words, communication must be both attended to and understood. Methods for accomplishing those objectives vary greatly and must be adapted to the needs, desires, and concerns of the change recipients (Kanter, 2003; Pratkanis, 2007).

The process employed in Step 3 helped foster buy-in by making faculty feel that their input had been heard, valued, and incorporated in the new vision. The Accreditation Director continued visits to each department, making presentations and fielding questions, concerns, and recommendations from faculty. The standing college committees, which already consisted of elected faculty representatives from each department, took on the work of overseeing how the vision would be implemented and the faculty ambassadors again took on the intermediary role in two-way informal communication with rank-and-file faculty. The Dean and Associate Dean also continually communicated the importance and urgency of this work and provided regular updates on its status.

A similar procedure was used to develop assessment plans for college degree programs. A survey of faculty opinions regarding appropriate learning goals and course content was conducted and results were communicated electronically and in a series of face-to-face meetings. Those results served as the springboard for discussions among program faculty regarding the development and revision of learning goals and the design and implementation of assessment plans. Goals and plans were reported to the college faculty. College committees (again consisting of elected representatives) oversaw the process. Finally, the accreditation team again served as ambassadors and informally communicated with faculty about assessment, stressing its importance and its potential to help faculty achieve their goals.

Step 5—Empower Action

Kotter (1996) suggests that the main job in this step is to make it easier for change action to occur, generally by removing obstacles to the change and by rewarding behaviors that support and reinforce the change. This process involves two key activities: developing reward and recognition systems that reinforce efforts and outcomes consistent with the change and, concomitantly, highlighting actions of influential participants that support the change. Research suggests these practices can be particularly effective in persuading people to support a course of action both through reinforcement via direct monetary and/or nonmonetary incentives and by providing "social proof" that others are enthusiastic about the change, thus inducing some peer pressure (Cialdini, 2006).

An example of how to remove obstacles through empowering faculty can be seen in another early task in accreditation, the assessment process. Assessment was of particular importance because this was the procedure that would produce evidence of what the team was

(or was not) attaining. When performed regularly over time, it also would provide benchmarks which enable the continuous improvement process prized by AACSB.

The guiding team for accreditation (Step 2) created an assessment handbook that had step-by-step guidelines for designing an assessment plan. This handbook was distributed to all committees, faculty, and chairs who were involved in assessment. This made the seemingly gargantuan task of designing and implementing assessment more manageable. In addition, early small-scale experiments in assessment were undertaken to give faculty an understanding of the process and to identify areas for process improvement. As noted above, both face-to-face meetings and on-line surveys were employed to get faculty input into the assessment process; thus faculty felt that they had input and some degree of control over the change. Periodic faculty surveys, focus groups, and forums demonstrated increasing agreement with the goals of the change; these results were communicated to all faculty within one week of data collection. Finally, stipends were secured from the Dean's office to reward assessment coordinators who worked with faculty to develop assessment plans and help implement the assessment activities.

Step 6—Create Short-term Wins

The desired change is more likely to be brought about when there are visible "quick wins" for the new process and faculty are recognized and rewarded for their efforts. Quick wins have the advantages of demonstrating the feasibility of the change effort, indicating growing support for change activities, and motivating others to participate. If combined with reinforcements such as recognition and reward, they become tangible symbols of the success of the change effort.

To continue with the assessment example, the handbook ameliorated uncertainty around the assessment process itself, as well as the "how" and "when" factors. The small-scale experiments demonstrated that faculty duties in executing the assessment would not be onerous and that interesting data would be forthcoming from the process—data that could be used by faculty to improve student learning and performance. Moreover, the faculty surveys achieved an 83% response rate—a significant win that could be easily and tangibly communicated. Finally, faculty were recognized for their contributions to the assessment process through, for example, public awards for performance of assessment duties and stipends for assessment coordinators.

Step 7—Don't Let Up

This step centers on consolidating the change and continuing to move forward by not allowing complacency to set in. Indeed, change efforts often fail because participants revert back to their prior habits, failing to continue to implement the change (Kanter, 2003; Kotter, 1996). Consequently, it is especially important that change continue to be reinforced and activities directed at the change effort continue to be supported and encouraged. Often, this requires a return to creating a sense of urgency or re-emphasizing the critical need for the change.

Executing this step involved both a macro- and a micro-level plan. On a macro-level basis, the team clearly communicated the completion of each part of the accreditation process (e.g., mission and vision statements, program learning goals, assessment rubrics and standards) as the necessary foundation for the next level of work toward accreditation and continually recognized faculty contributions to the outcomes. Moreover, upon gaining re-accreditation, the guiding team launched a series of communications and faculty interviews stressing the importance of not "having to do all this over again from scratch next time." This building on the

work accomplished resonated with faculty and served to keep them involved in the assessment and continuous improvement processes when it would have been easy to let down and say, "We're done for a few years."

On the micro-level, the team continued to pursue changes in the process itself. For example, the team improved the efficiency of data collection and analysis and made some changes in where (i.e., which courses) and when data was collected, providing qualitatively superior—and more useful—data, while simultaneously reducing faculty workload vis-à-vis assessment.

Step 8—Make Change Stick

In this stage, the goal is to institutionalize the change and anchor it in the organizational culture. Research on the long-term effectiveness of organizational change efforts paints a dismal picture of the sustainability of those efforts (Kanter, 2003). Therefore, this stage is perhaps one of the most important in the model. Accomplishing this stage requires that change become the status quo – in other words, it becomes the way "we do things around here." Accomplishing this can be particularly challenging, as culture change is extraordinarily difficult (Kant, Kutcher, Mahdavian, & Sprague, 2015; Kanter, 2003). Kotter (1996) suggests a number of methods for institutionalizing change including: demonstrating tangible performance improvements; using orientations, training, and other communication methods to instill the new behavior; aligning reward systems to support the change; and ensuring that resource allocation systems support the new behavior. A major selling point for faculty in institutionalizing the change was to avoid the "having to start over from scratch" issues identified in the previous step.

The approach to institutionalizing the changes at the authors' institution has encompassed adaptation of the reward system and the organizational structure to support the change efforts. Release time from teaching and/or stipend awards were instituted to keep faculty continuously in the Accreditation Director and Assessment Coordinator roles. Faculty have become accustomed to the rotational assessment schedules and the simplified processes for the assessment and accept it as part of the job if they want to teach the courses in which the assessment data is collected. Moreover, they see assessment as providing data that may be useful in improving their courses and in helping students succeed. In addition, the organization has begun to align some reward and recognition systems to support accreditation efforts. For example, travel support and course releases are now aligned with each faculty member's AACSB qualification status.

Structural changes have included creating a committee charged with aligning curriculum to program learning goals and creating assessment plans for the program. Additionally, task forces comprised of faculty experts were formed to support each program learning goal. Task forces were charged with working with faculty across the college to coordinate curricula concerning the learning goal and to encourage cross-disciplinary collaboration and innovation. To spur acculturation efforts, college-wide meetings prominently feature accreditation and the institutional commitment to continuous improvement that is aided by staying immersed in the accreditation process.

CONCLUSION

The authors suggest that faculty buy-in is crucial to the success of the accreditation process—whether for institutions seeking accreditation for the first time or for institutions seeking to maintain their accreditation, particularly with accrediting agencies' increased focus on

faculty engagement. Kotter's (1966) eight-stage model of change management has been employed to provide a heuristic for creating and sustaining systems that support faculty engagement in accreditation activities. Experience with implementing this model suggests that it has significant advantages. It provides clear and concise procedural recommendations focused on successfully managing and sustaining organizational change. Unlike other models, it explicitly focuses on both tangible behavioral aspects of change as well as the critical emotional factors that are inevitably engendered by change efforts.

However, implementing the model can present some challenges. First, it was often necessary to cycle back through prior stages before proceeding to the next. This was particularly the case after creating short-term wins. Faculty sometimes felt that these were sufficient and that efforts could then be suspended. To rectify that, the team again communicated the vision, created opportunities for empowerment, and developed activities that would support additional short-term wins. A second challenge was the model's lack of specification of interpersonal influence tactics. Although the model provides an excellent strategic perspective, it says little about how to effectively persuade individuals to comply. Fortunately, substantial research on interpersonal influence and persuasion provides useful insights (see, for example, Pratkanis, 2007). Finally, it is especially important to adapt the model to the needs of the particular organization and faculty. In the authors' institution, faculty input and consultation needed to be explicitly sought (that is, the communication needed to be two-way, not just top down) and be seen as impacting the accreditation process. Moreover, the process had to be transparent and explained and sold to faculty as to why this was right. Clearly, other institutions would have differing needs and the model as well as the influence tactics used would need to be specially developed to adapt to that institution.

At the authors' institution, efforts are being undertaken to leverage the culture of accreditation cycles to internalize the notion of continuous improvement for students and other stakeholders. Two initial areas of opportunity are important: 1) how to more effectively design faculty reward and evaluation processes and metrics so that accreditation is valued; and 2) how to build accreditation more fully into new faculty orientation programs. This will allow better communication to faculty of the importance of accreditation. Moreover, the process of continuous improvement and engagement will enable the institution to identify and leverage opportunities to better serve students and other constituencies – the true focus of accreditation efforts and the changes that support them.

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CONFLICTS ON TEAM SATISFACTION AND FACE LOSSAND THE MODERATING ROLE OF FACE WORK BEHAVIORS IN ONLINE DISCUSSIONS

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ABSTRACT

The purpose of this study is to explore the influence of conflicts (task, process, and relationship) on two outcomes of online discussion teams, satisfaction and face loss, and the effect of facework behaviors on that relationship. A total of 138 participants grouped in teams contributed to an online discussion board debating a controversial topic for a two weeks period. Results suggest that process conflict has a negative influence over satisfaction and that the dominating facework behaviors moderate the relationship between task conflict and satisfaction, and between process conflict and satisfaction. Moreover, in high levels of avoiding facework behaviors, relationship conflict has a positive influence on face loss; in high levels of integrating facework behaviors, process conflict has a positive influence on face loss; in high levels of dominating facework behaviors, relationship conflict has a positive influence on face loss; in high levels of dominating facework behaviors, task conflict has a positive influence on satisfaction; and in high levels of dominating facework behaviors, process conflict has a negative influence on satisfaction. This paper provides evidence of the moderating effect of the facework behaviors in online discussion boards.

Keyboards: Conflicts, Online Discussions, Satisfaction, and Facework Behaviors

INTRODUCTION

Discussion is an important form of human communication-one that is essential for collaboration, cooperation, learning, and many other social activities. Online discussions are a central component in education that goes beyond the traditional classroom setting (Levine, 2007). Online discussions allow students to read each other's ideas, share their own ideas, and collaboratively expand and deepen their mutual understanding of the discussion topic (Gunawardena, 1998).

An important aspect of interrelations among participants in a discussion is conflict. Conflict is defined as "the awareness by the parties involved of discrepancies, incompatible wishes, or irreconcilable desires" (Jehn & Mannix, 2001, p. 238, cr. Boulding, 1963). Studies on the influence of conflict on team performance show mixed results. For instance, the influence of relationship conflict on team performance is mostly negative (Jehn, 1997; De Jong, Schalk, & Curseu, 2008; De Dreu & Weingart, 2002; Jehn, 1995; and Shah & Jehn, 1993). Task conflict and process conflict do not show a clear positive or negative influence on team performance (De Jong, Theune & Hofs, 2008; Souren & Sumati, 2010; Jehn & Chadwick, 1997; De Dreu & Weingart, 2002; Hinds & Mortensen, 2005). Given these findings, we explore the influence of conflict on the outcomes of online discussions, not knowing the direction and strength of the influence.

During a discussion or other incidents, an important aspect to consider involving the interrelationships among participants, face-to-face or online, is *face*. Face is defined by Goffman (1967, p. 5) as "the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact." As an effect of a discussion, participants' social image may deteriorate (*Face Loss,* Chester and Bond, 2008), in consequence, participants may react in order to restore or protect such social image. Through *facework behaviors*, "the communicative strategies one uses to enact self-face and to uphold, support, or challenge another person's face" (Oetzel, Ting-Toomey, Yokochi, Masumoto, & Takai, 2000, p. 398), participants may manage their face. Existing studies show that face loss has direct consequences on future interpersonal interactions (Brown and Levinson, 1987; Hodgins, Liebeskind & Schwartz, 1996) and in relationship deterioration (Kam and Bond, 2008). Previous studies focused on participants' recollections of face-to-face discussions or conflict scenarios (Oetzel et al., 2000; Oetzel, Ting-Toomey, Masumoto, Yokochi, Pan, Takai, & Wilcox, 2001; Oetzel & Ting-Toomey, 2003; Oetzel, Ting-Toomey, Chew-Sanchez, Harris, Wilcox & Stumpf, 2003; Oetzel et al., 2007, Walsh, Gregory, Lake, and Gunawardena, 2003, Baranova, 2010). This paper explores the influence of (the degree of) facework behaviors on the relationship between conflicts and face loss and satisfaction in online discussions.

The structure of this paper is as follows. First, the concepts of face, facework behaviors, and conflicts are discussed and the research model and hypotheses are elaborated. Next the design and sample of the study are described, followed by an overview of the results. Lastly, the conclusion, discussion of the findings, implications for practice, limitations and recommendations for future research are presented.

BACKGROUND

In order to explain the research model used in this study, this section explores the concepts of face, facework behaviors, and conflict.

Face

In face-to-face or online discussions, the concept of face "the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact" (Goffman, 1967, p. 5) is present. Face is the image of an individual, or a group, that society sees and evaluates based on cultural norms and values (Ting-Toomey, 1988). Face is carried with the individual into every social encounter including online discussions. In online as in face-to-face discussions, face can be threatened by incompatibilities among participants, disagreements about which tasks to perform, and controversies about how to perform those tasks. Also, in online discussions face can be threatened by misunderstandings resulting from the lack of visual and verbal cues inherent in the online medium.

Face can be threatened in a number of ways, so its vulnerability is evident. During negotiations between individuals or among groups, if the face of one is threatened his/her behavior is likely to shift from cooperative to competitive. This shift reduces the possibility of reaching agreement and/or increases the possibility of reaching a less-cooperative agreement (White et al., 2004).

Face is the target of the facework behaviors. The study of the variables that are conducive to face loss is important because face loss has direct consequences on incipient and continuing interpersonal interactions (Brown & Levinson, 1987; Kam & Bond, 2008); in negotiation between individuals and among groups; and in learning and knowledge sharing. Kam and Bond (2008) found that emotions and relation among groups of individuals

deteriorate as face loss occurs. Lin (2010) showed that maintaining participants' face in a relationship is critical to maintaining harmonious relationships. Similarly, if face loss is likely to occur individuals may be unwilling to consider differing opinions or unlikely to ask questions to learn something they do not know (Tong & Mitra, 2009).

Facework Behaviors

Individuals manage their face through facework behaviors. According to Oetzel et al. (2007), facework behaviors can be adopted during conflicts in order to resolve, exacerbate, or avoid conflict; to protect a person's image; to challenge another person's positions; or to manage shared social identity. The concepts of face and facework help to determine the interest of individuals and the content of their messages in terms of a specific behavioral presence (Rogan and Hammer, 1994).

Oetzel et al. (2000) identified eleven facework behaviors. These are: 1) Aggression: degree to which a person tries to insult, hurt, or ridicule another person; 2) Problem Solve: degree to which a person attempts to resolve a conflict through compromising or integrating viewpoints; 3) Third Party: decision to involve an outside person to help to resolve the conflict; 4. Apologize: act of admitting that one made a mistake during the conflict and telling the other about it; 5. Defend: act of defending one's position without giving in; 6. Respect: act of showing sensitivity, attentiveness, and listening to the other person; 7. Pretend: act of pretending the there is no conflict or that one is not upset or hurt by what has happened; 8. Remain Calm: act of trying keeping one's composure, staying calm, and unemotional during a conflict; 9. Give in: act of accommodating the other person and let them win during the conflict; 10. Express Emotions: act of expressing how one is feeling without defending or attacking the other; and 11. Private Discussion: act of refusing to talk about the problem in public.

Facework behaviors are categorized in three groups or facework strategies: *integrating, avoiding, and dominating* (Oetzel et al., 2000). *Integrating* deals with the resolution of conflict and the preservation of the relationship (maintain self-face and other-face). This category includes the 'private discussion', 'apologize', 'problem solve', 'remain calm', 'respect', and 'express emotions' behaviors. *Avoiding* focuses on maintaining the relationship by not directly dealing with the conflict (maintain the face of the other person). This category includes the 'third party', 'pretend', and 'give in' behaviors. *Dominating* refers to presenting a believable image with the idea of winning the conflict (maintain ones-self). This category includes the 'aggression', 'defend', and 'express emotions' behaviors. The facework behavior 'express emotions' is associated to the *dominating* and *integrating* strategies. This study considers "express emotions" as part of both categories.

Face Negotiation Theory

Existing theories and models explaining face and facework behaviors have limitations in regards to the study of facework behaviors during conflict (Brown and Levinson, 1978, 1987; Cupach and Metts, 1994; Rogan and Hammer, 1994; Lim and Bowers, 1991). The models presented by Brown and Levinson (1978, 1987) and Lim and Bowers (1991) focus on general facework behaviors. They have not been applied to conflict situations (Oetzel et al., 2000). Face negotiation theory explains the relation between conflict and face (Ting-Toomey, 1988). This theory argues that face is a central component of an explanatory mechanism for facework across cultures during conflicts. The basic assumptions of the Face Negotiation theory are: 1) people in all cultures negotiate face during communication situations; 2) face plays an important role in uncertainty situations such as conflict; and 3) situational variables influence the use of facework behaviors in interpersonal and intergroup encounters (Oetzel et al., 2000).

Conflicts

Conflicts are inevitable in any team. Jehn and Mannix (2001, p. 238) define conflict as "the awareness by the parties involved of discrepancies, incompatible wishes, or irreconcilable desires". Conflicts play an important role in learning and according to Petraglia (1998) and Piaget (1977) "learning is particularly effective when collaborating students encounter conflicts, engage into argumentation and manage through negotiation to produce a shared solution." Jehn (1995, 1997) identified three types of conflicts: relationship, task, and process.

Relationship conflict refers to the awareness of interpersonal incompatibilities, which includes affective components such as feelings tension, friction, animosity, and annoyance among members of the group (Jehn, 1995). The connection between relationship conflict and team performance is mostly negative (Jehn, 1997; De Jong et al., 2008; De Dreu & Weingart, 2002).

Task conflict is an awareness of the differences among group members in terms of viewpoints and opinions about the group's tasks being performed (Jehn, 1995). There is no consistent pattern of influence between task conflict and online discussion outcomes. Some studies support the positive influence of this type of conflict on online discussion outcomes (De Jong et al., 2008; Gallenkamp et al., 2010; Souren and Sumati, 2010). Other studies support the negative influence of task conflicts on online discussion outcomes (Jehn and Chadwick, 1997; Jehn, 1995).

Process conflict (Jehn & Mannix, 2001) refers to the controversies that arise from aspects such as how task accomplishment will proceed; for instance, when group members disagree about whose responsibility it is to complete a specific task. According to Hinds and Mortensen (2005), process conflict is not as well understood as task and relationship conflict. In consequence, more studies are necessary to clarify this type of conflict. Existing studies suggest that process conflict has a negative influence on team outcomes. De Jong et al. (2008) found a significant negative impact of process conflict over perceived team performance.

Outcomes of Online Discussions

Powell et al. (2004), Martins et al. (2004), and Webster and Stapples (2006) reviewed a total of 324 studies about virtual teams. These authors, using the inputs-processes-outcomes (I-P-O) model as an analysis framework, established that satisfaction which may influence participants' willingness to collaborate and contribute to future team projects (Hackman, 1989, 1992) is a frequently studied virtual-team outcome. This study focuses on two satisfaction measures, *Outcome Satisfaction,* or participants' degree of satisfaction with the results of the team's work) and *Process Satisfaction,* or participants' perceived satisfaction with general group functioning and combines them under the term satisfaction. Also, this study focuses on face loss (the deterioration of one's social image, Kam and Bond, 2008), is considered given that when conflict arises face is threatened and negotiated through facework behaviors.

Research Model

This study analyses the influence of the types of conflicts on two outcomes of online discussions, satisfaction and face loss and the moderating effect of facework behaviors categories on the relationship between conflicts and satisfaction and face loss. Figure 1 illustrates the research model.
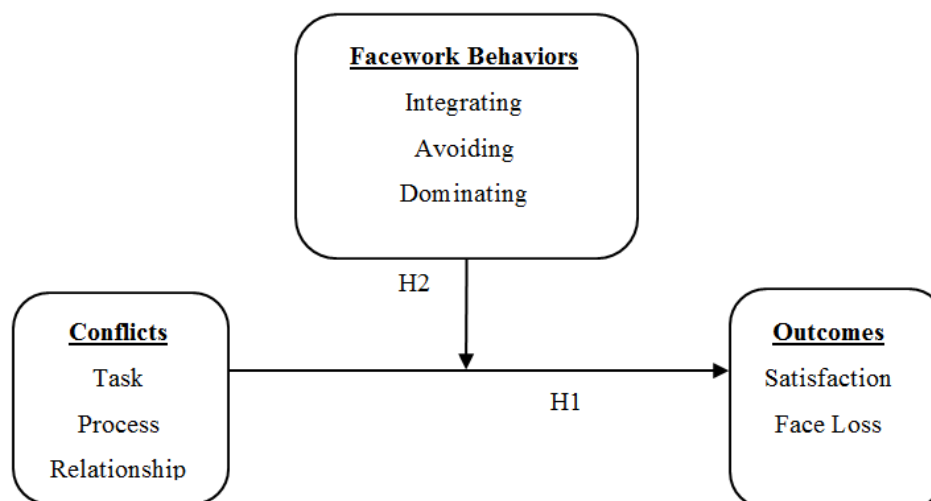
Figure 1
From the research model, two hypotheses are tested:

H1Conflict influences the outcomes of online discussion teams.
H2 Facework behaviors moderate the relation between conflict and the outcomes of online discussion teams.

METHODOLOGY

In this section we explain data collection procedures and describe some demographic characteristics of participants. Also, we present the measurement of the constructs.

Data Collection

Participants were randomly grouped in teams of four to five members to participate in an online discussion board in which they interacted with members of their team to discuss a controversial topic. The topic of discussion was selected based on its likelihood of generating conflict among discussion participants. Participants were asked to write a justification for their support or opposition to the topic and to continue participating for a two-week period. At the end of the discussion period, team members were asked to write their unified team's position about the topic and to complete an online survey individually. To obtain full credit for the assignment, each participant had to contribute six discussion posts at a minimum and to answer the online survey fully. The survey included items to measure the study's constructs.

Participants

One hundred and thirty eight (138) undergraduate students from a Western US University, 77 males (56 percent) and 61 females (44 percent) participated in the study and completed the online discussion task and the survey. The age of the participants was between 19 and 38 years (mean= 22.99). Teams were not balanced in terms of the number of male and female members.

Measures

Outcome Satisfaction was measured using four items in the survey; each was assessed on a 5-point Likert scale (1= Strongly Agree, 5=Strongly Disagree). These items were adopted from Liu, Magjuka, and Lee (2008). The Cronbach's alpha for perceived outcome satisfaction in Liu et al. was α = .72. For this study, it was α =.89. Minor changes were made

to the original questions. For example, the item "Looking back at the whole course, I am satisfied with our teamwork project" was replaced by "Looking back at the whole course, I am satisfied with our teamwork assignment"

Process Satisfaction was measured using six items in the survey; each was assessed on a 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree). These items were adopted from Strijbos, Martes, Jochems, and Broers (2007). The Cronbach's alpha for perceived process satisfaction in Strijbos et al. was α = .71. For this study, it was α =.79. Some items were adapted to the online setting. For instance, the item "I enjoyed talking with my group on the network" was changed to "I enjoyed with the other team members through the online discussion tool".

Face Loss was measured using five items extracted and adapted from Chester and Bond (2008) and Huis and Bond (2009). The Cronbach's alpha for face loss in these studies were respectively α = .71 for participants from the US and α = .66 for the participants form Hong Kong and α = .84 for the participants from the US and α = .82 for participants from Hong Kong. The five items were assessed on a 7-point Likert scale (1 = Definitely Not, 7 = Definitely). For this study, the Cronbach's alpha was α =.90.

Facework Behaviors was measured using sixty-two items each assessed on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). These items were adopted from Ting-Toomey and Oetzel (2001). The Cronbach's alpha for every one of the facework behaviors in this study and (in parenthesis) in Ting-Toomey and Oetzel were: Remain Calm α = .60 (α = .68), Apologize α = .84 (α = .82), Private Discussion α = .61 (α = .64), Third Party α = .76 (α = .81), Defend α = .69 (α = .82), Aggression α = .91 (α = .89), Give in α = .62 (α = .69), Pretend α = .75 (α = .75), Express Emotions α = .78 (α = .70), Respect α = .83 (α = .79), and Problem Solve α = .82 (α = .89). Some items from the original version of the Ting-Toomey and Oetzel survey were adapted to an online setting and to the nature of the assignment. For example, the item "I waited until we were by ourselves to talk about the problem" was updated to "I waited until we through a different private communication channel were able to talk about the problem."

Task Conflict was measured using three items; each was assessed on a 7-point Likert scale (1 = Not at all, 7 = A lot). These items were adopted from Jehn and Mannix (2001). The Cronbach's alpha for task conflict in Jehn and Mannix was α = .94. For this study, it was α =.77. Some items were adapted to the online setting. For instance, the item "How much relationship tension is there in your work group?" was changed to "How much relationship tension was there among members of your online discussion team?"

Process Conflict was measured using three items; each was assessed on a 7-point Likert scale (1 = Not at all, 7 = A lot). These items were adopted from Jehn and Mannix (2001). The Cronbach's alpha for task conflict in Jehn and Mannix was α = .93. For this study, it was α =.80. Some items were adapted to the online setting. For instance, the item "How much relationship tension is there in your work group?" was changed to "How often were there disagreements about who should do what in your online discussion team?"

Relationship Conflict was measured using three items; each assessed on a 7-point Likert scale (1 = Not at all, 7 = A lot). These items were adopted from Jehn and Mannix (2001). The Cronbach's alpha for task conflict in Jehn and Mannix was α = .94. For this study, it was α =.81. Some items were adapted to the online setting. For instance, the item "How often do people get angry while working in your group?" was changed to "How often did team members of your online discussion team get angry while working in your team?"

RESULTS

Preliminary

 We first examined the correlation between the study's constructs. Face loss was significantly and negatively correlated with satisfaction. The process and relationship conflicts were significantly and negatively correlated to satisfaction, meanwhile task conflict was negatively correlated to satisfaction but it was not significant. The three types of conflicts were significantly and positively correlated to face loss. Table 1 summarizes these results.

	Variable	ean	D									
r												
	Gender	--	--									
	Age	2.99*	3.29	-.194*								
	Satisfaction	7.47	9.03	.153	.007							
	Face Loss	7.15	3.36	.062	.061	.204*						
	Task Conflict	7.89	3.71	-.061	.004	.120	.177*					
	Relationship Conflict	5.29	3.06	.052	.047	.236**	393**	.469**				
	Process Conflict	5.71	3.27	.034	.049	.391**	300**	.475**	562**			
	Avoiding	8.80	6.12	.081	.064	.055	.155	-.193*	.080	.064		
	Integrating	5.71	4.57	.201*	.040	.293**	.100	-.148	.091	.097	399**	
0	Dominating	8.39	8.29	.021	.189*	.115	.316**	-.060	229**	196**	426**	169*

Table 1
DESCRIPTIVE STATISTICS AND CORRELATIONS

Notes: * $p < 0.05$; **$p < 0.01$;

 To assess the moderating effect of facework behaviors on the relation between conflict with satisfaction and face loss, cross-products (Task_Conflict×Avoiding, Task_Conflict×Integrating, Task_Conflict×Dominating, Process_Conflict×Avoiding, Process_Conflict×Integrating,Process_Conflict×Dominating, Relationship_Conflict×Avoiding, Relationship_Conflict×Integrating, and Relationship_Conflict×Dominating) between conflicts and facework behaviors were calculated and tested using three steps hierarchical linear regressions. On step 1 the predictors *sex* and *gender* (control variables) were entered, on step 2 the types of conflict and the facework behavior were entered, and on step 3 the interaction terms were included. To reduce multicollinearity effect, the independent variables of all regressions were centered before interaction terms were generated (Field, 2009).

Multiple Regression Analysis

The hierarchical multiple regressions and moderator analysis are presented, ordered by facework behavior category (avoiding, integrating, and dominating).

Avoiding: For satisfaction, in the first step the model was not statistically significant $F (2, 135) = 1.648$. On step 2 the total variance explained by the model as a whole was 20.1% ($F (6,131) = 5.501$; $p < 0.001$). The final model on step 3 was statistically significant and the total variance explained by the model was 22.3% ($F (9,128) = 4.076$; $p < 0.001$). The interaction terms were not significant. The control variable gender was significant. That is, females were more satisfied than males.

For face loss, in the first step the model was not statistically significant $F (2, 135) = 0.433$. On step 2 the total variance explained by the model as a whole was 20.4% ($F (6,131) = 5.587$; $p < 0.001$). The final model on step 3 was statistically significant and the total variance explained by the model was 31.9% ($F (9,128) = 6.649$; $p < 0.001$). For face loss the interaction term relationship conflict X avoiding was significant. Table 2 shows these results.

The effect of the level of avoiding facework behavior on the relation between relationship conflict and face loss is illustrated in Figure 2. The results show that the level of avoiding facework behaviors affects the relation between relationship conflict and face loss. In high levels of avoiding facework behaviors, relationship conflict has a positive influence on face loss; meanwhile in low levels of avoiding facework behaviors, relationship conflict has a negative influence on face loss.

Table 2
RESULTS OF HIERARCHICAL REGRESSION ANALYSIS (SATISFACTION, FACE LOSS, CONFLICTS, AND AVOIDING)

tep	Variable	Satisfaction			Face Loss		
		Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
	Age	.063	.129	.089	-.052	-.095	-.074
	Gender	2.850	3.298**	3.316**	.353	.050	.071
	Task Conflict		.355	.356		.000	-.026
	Process Conflict		-1.215*	-1.277*		.092	.084
	Relationship Conflict		-.183	-.176		.397*	.441*
	Avoiding		.130	.136		.101	.099**
	Task Conflict X Avoiding			.016			-.023
	Process Conflict X Avoiding			.024			.028
	Relationship Conflict X Avoiding			-.089			.046**
	R^2	.024	.201	.223	.006	.204	.319
	R^2 change	.024	.177	.021	.006	.199	.115
	F	1.648	5.501*	4.076*	.433	5.587*	6.649*

Notes: * $p < 0.001$; ** $p < 0.05$; Entries in the table represent unstandardized regression coefficients
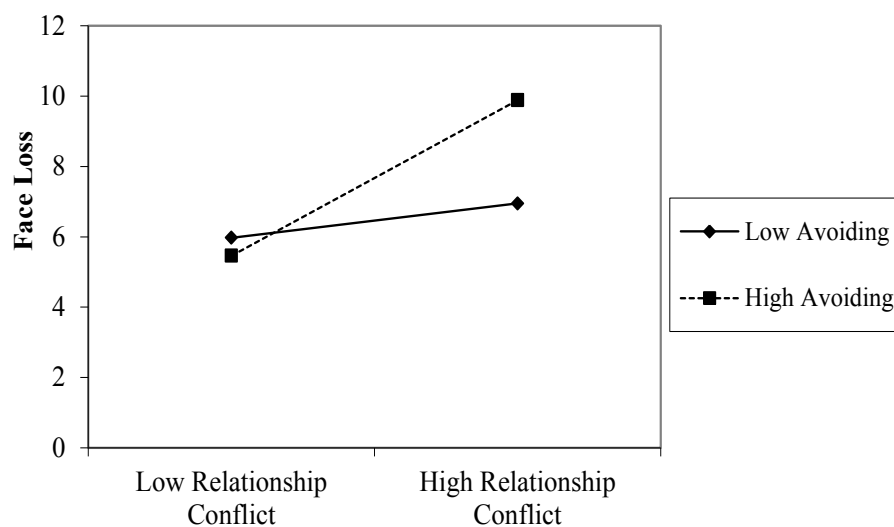
Figure 2

Integrating: For satisfaction, in the first step the model was not statistically significant $F_{(2, 135)} = 1.648$. On step 2 the total variance explained by the model as a whole was 25% ($F_{(6,131)} = 7.263$; $p < 0.001$). The final model on step 3 was statistically significant and the total variance explained by the model was 27.3% ($F_{(9,128)} = 5.340$; $p < 0.001$). The interaction terms were not significant.

For face loss, in the first step the model was not statistically significant $F_{(2, 135)} = 0.433$. On step 2 the total variance explained by the model as a whole was 17.8% ($F_{(6,131)} = 4.727$; $p < 0.001$). The final model on step 3 was statistically significant and the total variance explained by the model was 23% ($F_{(9,128)} = 4.239$; $p < 0.001$). For face loss the interaction term process conflict X integrating was significant. Table 3 shows these results.

Table 3
RESULTS OF HIERARCHICAL REGRESSION ANALYSIS (SATISFACTION, FACE LOSS, CONFLICTS, AND INTEGRATING)

step	Variable	Satisfaction			Face Loss		
		Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
	Age	.063	.146	.112	-.052	-.081	-.079
	Gender	2.850	2.548	2.448	.353	.246	.084
	Task Conflict		.362	.279		-.049	-.051
	Process Conflict		-1.134*	-1.065*		.134	.149
	Relationship Conflict		-.186	-.315		.374*	.356**
	Integrating		.151**	.160**		-.017	-.011
	Task Conflict X Integrating			-.019			-.003

Process Conflict X Integrating			.002			.026**
Relationship Conflict X Integrating			-.026			-.010
R^2	.024	.250	.273	.006	.178	.230
R^2 change	.024	.226	.023	.006	.172	.052
F	1.648	7.263*	5.340*	.433	4.727*	4.239*

Notes: * $p < 0.001$; **$p < 0.05$; Entries in the table represent unstandardized regression coefficients

The effect of the level of the integrating facework behavior on the relation between process conflict and face loss is illustrated in Figure 3. The results show that the level of integrating facework behaviors affects the relation between process conflict and face loss. In high levels of integrating facework behaviors, process conflict has a positive influence on face loss; meanwhile in low levels of integrating facework behaviors, process conflict has a negative influence on face loss.
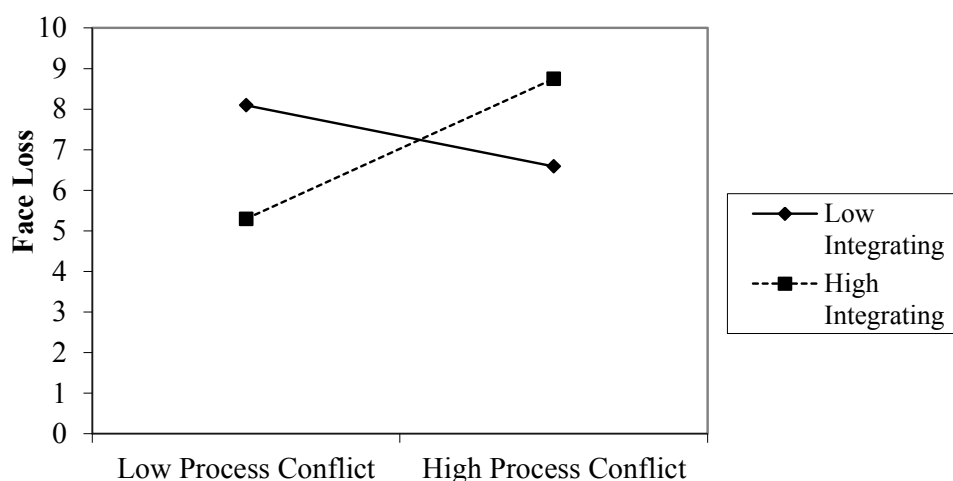
Figure 3

Dominating: For satisfaction, in the first step the model was not statistically significant F (2, 135) = 1.648. On step 2 the total variance explained by the model as a whole was 19.5% (F (6,131) = 5.281; $p < 0.001$). The final model on step 3 was statistically significant and the total variance explained by the model was 29.2% (F (9,128) = 5.855; $p < 0.001$). The interaction terms task conflict X dominating and process conflict X dominating were significant. The control variable gender was significant. That is, females were more satisfied that males.

For face loss, in the first step the model was not statistically significant F (2, 135) = 0.433. On step 2 the total variance explained by the model as a whole was 23.1% (F (6,131) = 6.542; $p < 0.001$). The final model on step 3 was statistically significant and the total variance explained by the model was 26.9% (F (9,128) = 5.231; $p < 0.001$). The interaction term relationship conflict X dominating was significant. Table 4 shows these results.

Table 4
RESULTS OF HIERARCHICAL REGRESSION ANALYSIS (SATISFACTION, FACE LOSS, CONFLICTS, AND DOMINATING)

tep	Variable	Satisfaction Step 1	Step 2	Step 3	Face Loss Step 1	Step 2	Step 3
	Age	.063	.159	.151	-.052	-.127	-.109
	Gender	2.850	3.431**	3.315**	.353	.109	.104
	Task Conflict		.284	.051		.018	.082
	Process Conflict		-1.145**	-.807**		.091	.120
	Relationship Conflict		-.190	-.014		.308**	.132
	Dominating		-.030	-.046		.105**	.110*
	Task Conflict X Dominating			.129*			-.005
	Process Conflict X Dominating			-.083**			-.004
	Relationship Conflict X Dominating			-.016			.030**
	R^2	.024	.195	.292	.006	.231	.269
	R^2 change	.024	.171	.097	.006	.224	.038
	F	1.648	5.281*	5.855*	.433	6.542*	5.231*

Notes: * $p < 0.001$; ** $p < 0.05$; Entries in the table represent unstandardized regression coefficients

The effect of the level of the dominating facework behavior on the relation between relationship conflict and face loss are illustrated in Figure 4. The results show that the level of dominating facework behaviors affects the relation between relationship conflict and face loss. In high levels of dominating facework behaviors relationship conflict has a positive influence on face loss; meanwhile in low levels of dominating facework behaviors relationship conflict has a negative influence on face loss.

The effect of the level of the dominating facework behavior on the relation between task conflict and satisfaction is illustrated in Figure 5. The results show that the level of dominating facework behaviors affects the relation between task conflict and satisfaction. In high levels of dominating facework behaviors task conflict has a positive influence on satisfaction; meanwhile in low levels of dominating facework behaviors task conflict has a negative influence on satisfaction.
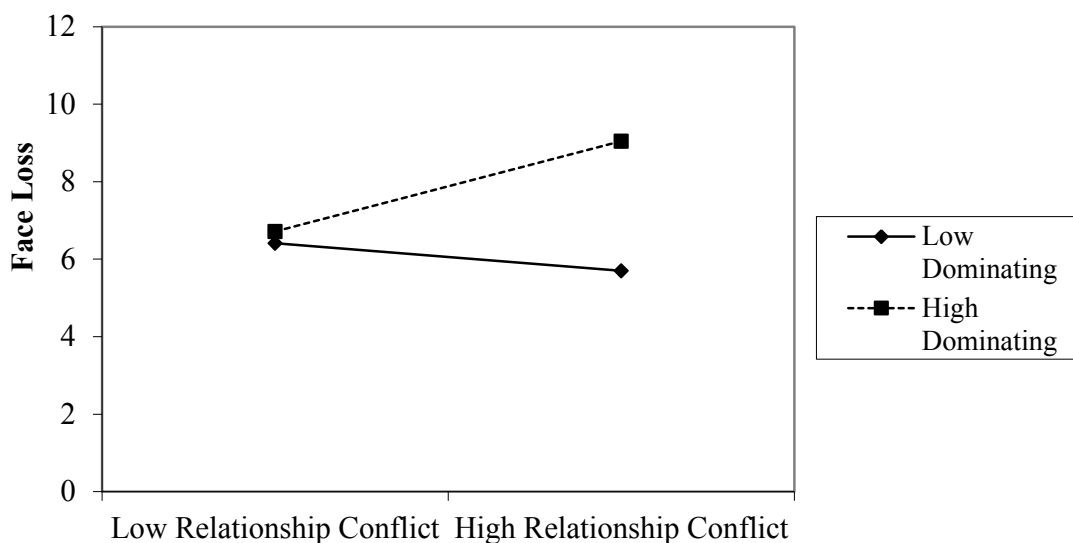
Figure 4
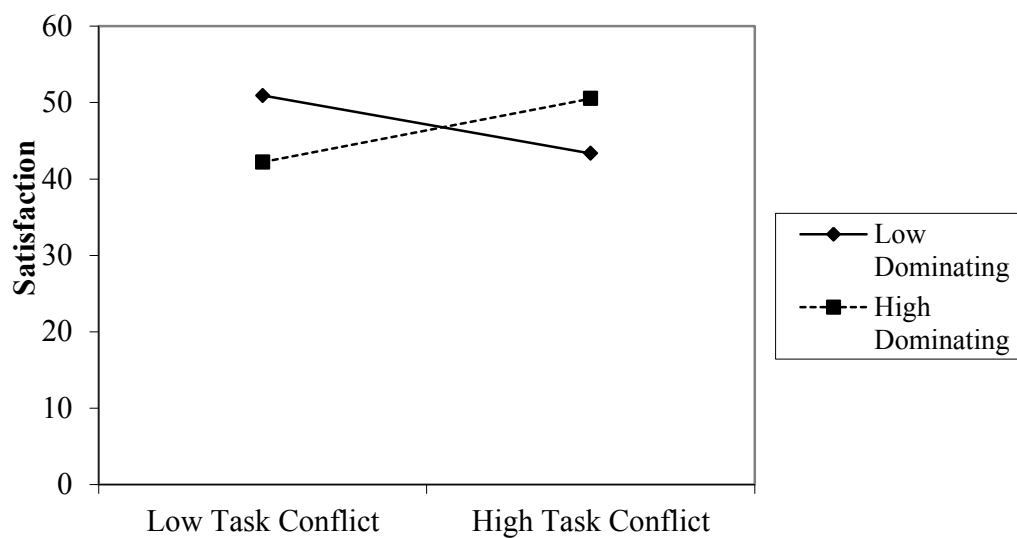
Figure 5

The effect of the level of the dominating facework behavior on the relation between process conflict and satisfaction are illustrated in Figure 6. The results show that the level of dominating facework behaviors affects the relation between process conflict and satisfaction. In high levels of dominating facework behaviors process conflict has a negative influence on satisfaction; meanwhile engaging in low levels of dominating facework behaviors process conflict has a positive influence on satisfaction.
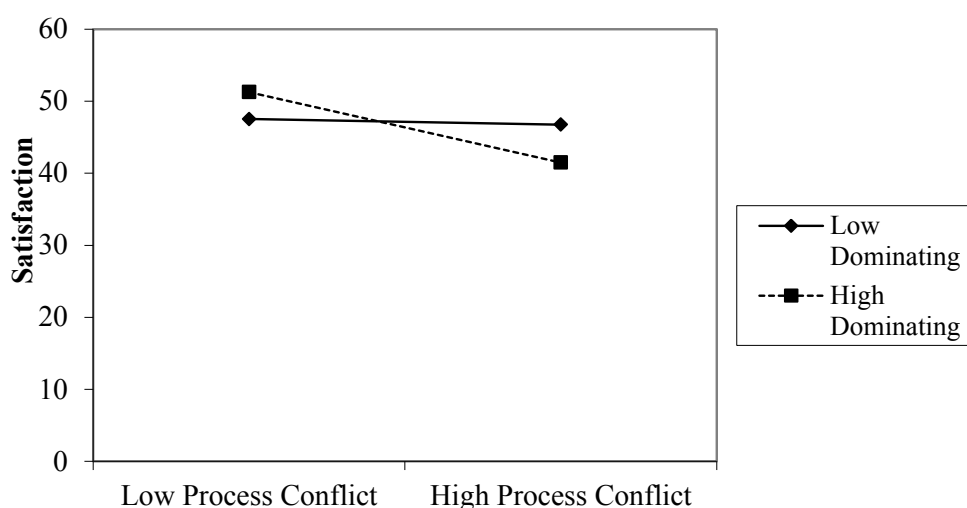
Figure 6

ANALISIS OF RESULTS

H1 is partially confirmed. First, the influence of conflict on satisfaction and then the influence of conflicts on face loss are presented. In terms of satisfaction, task conflict had a negative influence on satisfaction even though results were not significant. Process conflict had a significant negative influence on satisfaction, which supports the results from De Jong et al. (2008). Relationship conflict had a non-significant negative influence on satisfaction. Task conflict show mixed influences over face loss, nevertheless results were not significant. Process conflict has a positive influence over face loss, even though results were not significant. Meanwhile, relationship conflict shows a significant positive influence over face loss.

H2 is partially confirmed. Regression analyses confirmed the significant and positive moderating effect of avoiding facework behaviors on the relationship between relationship conflict and face loss; the significant and positive moderating effect of integrating facework behaviors on the relationship between process conflict and face loss; the significant and positive moderating effect of dominating facework behavior on the relationship between task conflict and satisfaction; the significant and negative moderating effect of dominating facework behavior on the relationship between process conflict and satisfaction; and the significant and positive moderating effect of dominating facework behavior on the relationship between relationship conflict and face loss. In the other cases, the moderating effects were not significant.

DISCUSSION

In this study, process conflict shows a significant negative influence on satisfaction, that is, the more process conflict the less the satisfaction. Specifically in the cases when avoiding and dominating facework behaviors were analyzed, the control variable gender was significant, that is, females were more satisfied than males. This result supports the findings of De Jong et. al. (2008). Relationship conflict shows a positive and significant influence on face loss when considering the avoiding and integrating facework behaviors; meanwhile considering dominating facework behavior, the relationship was also positive but not significant. This finding suggests that the more relationship conflict, the higher the

participants face loss. Based on Table 1, face loss has a negative and significant correlation with satisfaction, that is, the more satisfaction the less face loss.

In the case of satisfaction, in high levels of dominating facework behaviors, process conflict has a negative influence on satisfaction; the higher levels of dominating behaviors, the lower the participants' satisfaction. This finding suggests that on incidents of process conflict, dominating facework behaviors reduce participants' satisfaction. Meanwhile, in high levels of dominating facework behaviors, task conflict has a positive influence on satisfaction; the higher the level of dominating behaviors, the higher participants' satisfaction. In the previous two cases, process conflict also has a negative influence over satisfaction. In addition, gender influences participants' satisfaction, that is, women are more satisfied than males.

In the case of face loss, in high levels of avoiding facework behaviors relationship conflict has a positive influence on face loss, that is, during incidents of relationship conflict, avoiding facework behaviors have a positive impact on face loss; the higher the level of avoiding behaviors, the higher participants' face loss. In high levels of dominating facework behaviors, relationship conflict has a positive influence on face loss, that is, during incidents of relationship conflict, the dominating facework behaviors has a positive impact on face loss; the higher the level of dominating behaviors, the higher participants' face loss. This is similar to the case of the relationship between relationship conflict and face loss moderated by the avoiding facework behaviors. Even though the interaction term was not significant, in high levels of integrating facework behaviors, relationship conflict has a negative influence on face loss. This result suggests that participants prefer engaging in integrating facework behaviors to reduce their face loss. Also, in the case of high levels of integrating facework behaviors, process conflict positively influence face loss; the higher the levels of integrating behaviors, the higher the participants' face loss.

CONCLUSIONS

This study contributes evidence on the effect of task, process, and relationship conflicts on online discussion outcomes (satisfaction and face loss). The evidence suggests that the three types of conflicts have a negative and significant influence over satisfaction and a positive and significant influence over face loss. The implications of these findings on online discussions in educational settings may be that instructors should monitor the levels of conflict between participants in online discussion teams to increase the level of participants' satisfaction and to reduce the levels of participants' face loss. This study also explored the moderating effect of facework behaviors on the relation between conflict and the outcomes on online discussions.

Regarding satisfaction and task conflict, results are consistent with previous findings about the negative relationship between conflict and online discussion outcomes, nevertheless, some studies also suggest a positive relationship between task conflicts and online discussion outcomes. In consequence more studies are needed to clarify the circumstances in which the beneficial effects on the online discussions emerge. In terms of satisfaction and relationship conflict, results confirmed the negative relationship between conflicts and the online discussion outcomes. Also, the evidence supports the negative effect between process conflicts and satisfaction.

Lastly, the three types of conflicts have a positive and significant relationship with face loss, that is, the higher levels of conflicts the higher the face loss on online discussion participants.

Implications

The IS 2010 curriculum guidelines of the Association for Information Systems, categorize negotiation as one of the fundamental skills for the undergraduate degrees in information systems. Our findings offer some practical implications on negotiation. During negotiations, participants' *face* can be threatened in a certain opportunities (White et al. 1994, Miles, 2010). Given that results suggest that conflicts significantly and negatively influence face loss, it is important to monitor the level of conflict to reduce the level of face loss. Considering the level of conflict as an indicator of losing face is important because according to van Ginkel (2004) detecting that negotiation' participants are losing face can be elusive and highly intangible and even more so if participants do not know that they are losing face or if they are averse to admitting it. When participants during negotiations lose face, they engage in face-saving behaviors (to reestablishing their face), which may cause that 1) participants focus their attention in restoring their face more than in the negotiation itself; 2) the likelihood of impasse increase and 3) the chances that participants engage in an all-or-nothing approach increase (Folger et al., 2009).

This study finding contributes to the area of cross-cultural teams. According to the Institute of International Education in the USA, period 2011-2012, there were 764,495 international students enrolled in undergraduate, graduate, non-degree, and optional practical training programs. Anawati and Craig (2006) state that cross-cultural team members have to adapt their normal working behavior to participate in culturally diverse teams. The 60.7% of participants on the Anawati and Craig study (2006) manifested that they changed their written communication to adapt to team diversity, especially when written communication did not allow participants, like in a spoken communication, to adapt their communication on the fly based on the immediate reaction from the listener. Also, team members have to be more careful because written communication is more easily misinterpreted. A training session could be useful for members of cross-cultural teams to help them identify face loss and the different categories of facework behaviors as a way to reduce the negative consequences of losing face. This might be more important for new students because according to Anawati and Craig (2006), after six months cross-cultural teams are aware of their differences and they start adapting their behavior.

Limitations

The limitations of this study are: 1) data was collected in an educational setting; which limits relevance to other settings; 2) topics selected for discussion were restricted to only those deemed suitable for educational setting; 3) the online discussion board used during discussions allowed only for written communication, and 4) based on the duration of the assignment, participants may have not been concerned about working together as a team in the future.

Future Research

Future studies should widen the age-range of the participants. This study also raises some questions: would the results be different if participants were grouped by gender with male- or female-only teams? Does it matter if the interaction is online? Does it matter that the most important outcome for these students was the credit for participation? Findings of these studies may increase the relevance of this study's results.

Acknowledgment

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PRIORITIZING KEY ACADEMIC SUPPORT SYSTEMS FOR LATINO ENGLISH LANGUAGE LEARNERS IN NORTHERN ILLINOIS PUBLIC SCHOOL DISTRICTS

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ABSTRACT

This study examined potential factors that contribute to the academic literacy success of Latino English Language Learners (ELLs) in varying public school districts throughout Northeast Illinois. This goal was accomplished in several phases of analysis.

A description of the historical background of the educational framework and programming options available for English Language Learners coupled with learning theories and the second language acquisition process created a foundational background for this study. The review of literature included an examination of the Common Core Standards, English Language Proficiency standards, the Illinois Five Fundamental's Framework, and national academic success stories of Latino ELLs.

The study was conducted in several phases. It entailed an institutional review of state reading scores of at least two hundred public school districts throughout Northeast Illinois at two grade level benchmarks in 2007 and 2011. The results of this "cohort" approach were, subsequently, merged in a statistical analysis with an anonymous teacher and administrator survey of a subset of participating districts. This survey, conducted initially as a pilot study, was comprised of variables derived from the literature review as being, potentially, highly supportive of the academic needs of Latino ELLs. The findings enabled the researcher to determine, statistically, which support systems, educational policies and practices were most relevant to the academic learning needs of Latino ELLs. An examination of current Northeast Illinois state reading assessment scores, for participating survey districts at the eighth grade benchmark, provided both a conclusion and recommendation for further study.

INTRODUCTION

Concerns and frustration continue to mount regarding the academic literacy outcomes of Latino English Language Learners (ELLs). Only 26% of Latino children, ages 3 to 5 years old, have prerequisite school readiness skills (U.S. Department of Education, 2009). Nationally, approximately 5.3 million students in grades K-12 are English Language Learners. These numbers are expected to reach 40% of the nation's schools by 2030 (Wingert, 2014). Latino students typically perform worse as they progress to the next grade level. For example, in Illinois, of those Latino students entering high school, 76 to 84% do not meet the Illinois Learning Standards in reading or mathematics. Approximately 50% of Latinos attain a high school diploma and only 13% earn a bachelor's degree. As a group, Latinos have the lowest educational attainment in the nation (The White House, 2011).

Scant scholarly literature exists regarding statistically robust indicators of high academic literacy outcomes for Latino ELLs. The rigor of academic grade level expectations continues to increase, and with it, a concern for the academic performance of at-risk students. As such, this paper describes how an online survey of Illinois public educators (N=334) and an ensuing multivariate analysis may directly impact the learning outcomes of Latino ELLs.

DEFINITION OF TERMS

The following items are defined here to provide a clear understanding and focus of the study:

1. *English Language or Second Language Learners*: Student whose first language is not English and who is in the process of learning English (Ariza, 2010).

2. *Latino/a English Language Learners*: Latino/a students whose first language is not English and are in the process of learning English (Ariza, 2010). The term "Latino" is often used in studies that include people who trace their origins to Spanish-speaking parts of Latin America and the Caribbean (Suarez-Orozco & Paez, 2002). Many studies of educational outcomes group students into a single category (Latino/Latina) but rarely provide disaggregated data by generation or parents' country of origin; in spite of these limitations those studies with valuable data on Latino and Latina students will be referenced in this paper.

3. *Limited English Proficient:* A term used to describe students who are in the process of acquiring English language skills and knowledge. The federal government refers to this student population as English Language Learners, or ELL. Beginning with the 2005 National Assessment of Educational Progress (NAEP) assessment the terminology changed to ELL from LEP (NAEP, 2009).

4. *Educational Assessment*: Includes process documenting, usually in measurable terms, knowledge, skills, attitudes and beliefs. Assessment can focus on the individual learner, the learning community (class, workshop, or other organized group of learners), the institution, or the educational system as a whole (Ariza, 2010).

5. *No Child Left Behind*: The No Child Left Behind Act of 2001 (NCLB) was passed by Congress to set accountability standards for learning in public school including low-income students, students from each major racial and ethnic group, limited English proficient students and students with disabilities. Under NCLB if a school doesn't make AYP for one of these groups, it doesn't make AYP (Wiener, 2003).

6. *Adequate Yearly Progress*: Adequate Yearly Progress, or AYP, is a measurement defined by the United States federal No Child Left Behind Act that allows the U.S. Department of Education to determine how every public school and school district in the country is performing academically according to results on standardized tests. Each state sets benchmark goals to measure whether schools and districts are making AYP with regard to students learning what is determined that they need to know (Wiener, 2003).

7. *National Assessment of Educational Progress*: The National Assessment of Educational Progress is a periodic assessment of student progress conducted in the United States by the National Center for Education Statistics, a division of the U.S. Department of Education. The assessment covers the areas of mathematics, reading, writing, and science (Daggett & Gendron, 2010).

8. *Common Core Standards Initiative:* A state-led effort coordinated by the National Governors Association Center for Best Practices and the Council of Chief State School Officers. The standards were developed in collaboration with teachers, school administrators, and experts, to provide a clear and consistent framework to prepare public school students for college and the workforce (Common Core Standards, 2012).

9. *Expectation Gaps:* International benchmarks that examine the difference between what students are expected to learn from state to state as determined by the Department of Education for any particular state (Phillips, 2010).

10. *Lexile Ranges:* Similar to the readability formulas that have been used in

American schools for almost a century, the lexile range of a text is established through an algorithm that considers sentence length and word fluency. The computation produces a lexile that can be placed on a scale which spans 0 (easiest texts) to 2000 (most complex texts). As an example, the middle 50% of students in grade 4 have lexile levels between 445L and 810L and in the 8th grade the levels are between 805L and 1100L (Daggett & Gendron, 2011).

        11.   *Low Income or Socio-economic Status:* Socio-economic status is defined as the actual or perceived influences of familial financial circumstances relative to the student's ability to complete school work and participate in school activities (U.S. Department of Education, 2009). Low income or socioeconomic Status is defined in this report as twice the federal poverty level or $40,000 for a family of four in 2006. A school is considered "low income" if the total enrollment is 40% or more low income (U.S. Department of Education, 2013).

        12.   *Cognitive Academic Language Proficiency*: This term refers to proficiency in using language that is supported by few or no contextual clues to meaning and, at the same time, is about difficult topics that require abstract thought, making them cognitively demanding. This type of language characterizes most academic learning (Cummins, 1994).

        13.   *Highly Qualified:* No Child Left Behinds requires that all public school teachers hired to teach core academic courses are highly qualified. Teachers that are highly qualified are generally have full certification for the content they teach, a bachelor's degree, and demonstrated competence in subject knowledge and teaching (U.S. Department of Education, 2012).

THEORETICAL FRAME WORK

The premise of this study was based on the results of extensive cognitive development language learning theories (Cummins, 2000; Krashen, 2003; Schutz, 2007). The premise of this study was based on these specific cognitive development learning theories that embody decades of extensive research and active study with regard to the student learning process. These theories continue to be highly relevant today. They are critical to the academic success of ELLs.

It is important to note that the cognitive learning theories, in and of themselves, can be used as for initializing the Latino ELL student learning process. However, these theories may require specific support systems, which may not be present in some school systems, but are a necessity for Latino (ELLs) as they strive to attain academic English literacy proficiency.

Learning theory is vital to the field of education with regard to understanding and improving the student learning process. Several theorists are strongly linked to the language acquisition process of second language learners. Specifically, the closely knitted frameworks of Cummins, Bruner, Krashen and Vygotsky are highly relevant. Their emphasis regarding how students acquire, make sense of, and utilize language, provide essential information to educators supporting the literacy needs of Latino ELLs (Bruner, 1978; Cummins, 1984, 2000b; Krashen,1982; Murray 1993; Vygotsky, 1978, 1985).

The original concept of Zone of Proximal Development (ZPD) was developed by psychologist Lev Vygotsky. Many current teaching models and strategies regarding scaffolding and stages of learning development utilized in classrooms are based on Vygotsky's work. He discovered that learners are generally not able to bridge a large gap of learning without some cognitively related prior knowledge. This established knowledge is necessary to connect and support the new information (Vygotsky, 1978).

Specifically, this "gap" is the difference between the learner's current developmental level as determined by independent problem-solving ability and the learner's potential of

development. This growth or development is determined by the ability to solve problems under adult guidance or in collaboration with more capable peers. ZPD represents the difference between the child's capacity to solve problems on his own and his capacity to solve them with assistance. The actual developmental level refers to the summation of the functions and activities a child is able to perform without assistance (Vygotsky, 1978).

When children have "gaps" scaffolding is a strategy that allows students to grow naturally in terms of social and intellectual development in a non-intrusive manner. According to Vygotsky (1978), an essential feature of learning is that it awakens numerous developmental processes that operate when a student is in the action of interacting with people in his environment and in cooperation with his peers. With regard to language learning, the authenticity of a child's surroundings and the potential to learn with all around him are essential for the learner to feel part of his environment. A combination of all of these elements is not predominant in conventional classrooms (Vygotsky, 1985).

However, if the teacher follows the ZPD model and finds the correct balance between boredom and anxiety by utilizing the proper scaffolding students will grow to learn more independently. For instance, Vygotsky notes that one learns best when he or she starts with what is already known and then is assisted with scaffolding to work to the unknown. If students can work independently with no assistance and are not acquiring new material then they are not learning. In other words, students need to be challenged but in such a way that they are being assisted as they question and acquire new information with which they are not entirely familiar or do not know how to apply to previous schema (Vygotsky, 1985).

Stephen Krashen (Krashen, 1982, 2003; Schutz, 2007) also has significant expertise with regard to second language acquisition. His primary focus on second language acquisition is based on what he termed the Monitor Model (1982). One of the five hypotheses within the Monitor Model was termed the "Gap i +1" Theory. The "i" in the equation stands for the current level of proficiency. The "1" reflects learning just beyond the means of current knowledge.

Krashen proposes that learning at a rate of "i+6" or "i+13" is unrealistic. The input must be understood to be relevant to student learning (Krashen, 1982).

Krashen's Monitor Model has many useful applications for the modern mainstream classroom. When a learner begins at a particular level of learning (*i)* the student will be able to move to the next stage of development (*+1)* if students are given comprehensible input.

Practical applications can extended in an infinite number of ways at all stages of lesson delivery. Utilizing comprehensive input such as visuals, grouping, guarded vocabulary, and hands-on activities, in part, is an effective instructional tool to maximize the learning potential of ELLs (Herrera, S., Perez, Kavidmandan, S & Wessels, S., 2013).

His comprehensible input hypothesis addresses a gap that involves the input that an ELL student needs in order to make progress in acquiring English. Krashen notes that input given to students can stretch their knowledge but should if the content is reasonable for them. In other words, including content that is one step beyond them is reasonable provided that the student is engaged in comfortable as he or she is learning. If this learning or input is one step beyond a student's knowledgebase "stage i" will allow the student to maximize language acquisition (Schutz, 2007).

Additional research regarding other factors that impact language acquisition was conducted by Gardner and Lambert (1972). Their studies indicate that motivation or engagement is a key indicator of student learning. Engagement is described as a combination of effort plus desire to achieve the goal of learning the language. Their findings concluded that attitude and motivation correlate higher with successful second language acquisition (L2) than with intelligence (Gardner & Lambert, 1972). These findings are also supported by psychologists concerned with learning methodology (Peters, 1983). Overwhelmingly,

empirical studies and research have proven that academic success, especially for at-risk students such as Latino ELLs, is linked to anxiety and self-esteem. Lowering anxiety and assisting students to tolerate high anxiety coupled with encouraging students to take risks enables students to reach higher levels of student success (Peters, 1983). Further, a classroom climate that supports reasonable learning and builds on a classroom climate that supports relationships among and between students and with the teacher is a win-win situation for all students (Herrera et al., 2013). The environment in which students learn and its impacts on their educational success is discussed later in this chapter.

Jerome Bruner followed and expounded upon the teachings of Vygotsky. Bruner's theories are useful in second language acquisition because of his theory of scaffolding. He emphasized that in order to make sense of language, students must be provided comprehensible input in order to reach the zone of proximal development (Bruner, 1978).

This "zone" complements the model presented by Krashen regarding the gap between a learner's current level of development and the learner's emerging or potential level of development. Further, Vygotsky's "internalization of language" theory and Krashen's language acquisition theory both require appropriate support for optimal learning which is based on interactions with others (Schutz, 2007).

In terms of practical application in classrooms, scaffolding is evident in numerous classrooms and is generally well accepted as a powerful tool for use in lesson plans of all disciplines. It is used often to develop language and writing including genre analysis to integrate understandings of audience, purpose, and text structure. Scaffolding all lessons, especially those associated with different types of literature, is crucial for language understanding and development (Gibbons, 2002). Instructional scaffolding utilizing graphic organizers is an effective pre-reading tool to prepare students for a chapter or unit of content reading will enhance student learning. For example, graphic organizers can be utilized to illustrate a chapter's text structure with regard to comparative or chronological order (Echevarria, J., Vogt M., & Short, D., 2012).

Gibbons (2002) explains that learning is not a linear process. It involves an ongoing development of skills for a range of purposes for all students. Specifically, this approach is a result of social contexts and interactions in which learning occurs. Gibbons stresses a need for teaching that includes a scaffolding of language in all content areas through a holistic approach. She envisions that the second language learning process develops as students learn new vocabulary and concepts in a way that is simultaneous and natural (Gibbons, 2002).

Scaffolding language is further supported by the research agency, Education Northwest (Stepanek, Raphael, Autio, Deussen, & Thompson, 2010). It stresses that ELLs require comprehensible input as they move through the process of acquiring English proficiency.

Therefore, teachers should scaffold their instruction by using multiple methods to convey information. In this way, educators will promote student interaction that is structured and supported (Stepanek et al., 2010). Similarly, Vygotsky also recognized the need for visual scaffolding as an important way to provide comprehensible input for all students (Murray, 1993).

It should be noted that while cognitive learning theories, in and of themselves, can be used to initialize the Latino ELL student learning process. However, Latino (ELLs) likely need additional key support measures to acquire high academic English proficiency. This skill will strengthen the ability of Latinos, and other at-risk populations, to more competitively pursue higher education opportunities.

LITERATURE REVIEW

A culmination of the preceding learning theories, coupled with support components identified as being instrumental to ELL's academic success, offer meaningful insight to this study. Particularly, a combination of strategies and applications offered throughout the following literature review may assist school districts in determining why some ELLs are finding higher levels of academic literacy than others.

The emergent findings from the literature review serve as a framework for understanding the underlying variables that continue to impede the literacy proficiency of many Latino ELLs in Illinois. Further, this investigation examines current educational practices and support systems that, potentially, have the highest impact on the academic literacy rates of Latino ELLs in Illinois.

Figure 1 is a Support System Path diagram illustrating potential variables that impact ELL standardized test scores or in the case of this study academic literacy proficiency. This literature review includes the following categories as they relate to the three independent variables that may impact literacy performance: Readiness to Learn and The Role of Schools, Family and Educational Policymaking. As noted in Figure 1, Socio-Economic Status (SES), Teacher Preparation and Involvement, and District Organizational Practices may have their own unique impact on the outcome variable, academic performance. For the purposes of this study, socio-economic status will be noted as having a significant impact on academic outcomes as evidenced by a wide body of ongoing scholarly research. As such, what institutions can do to support the overall academic and social needs of students is paramount to this study.
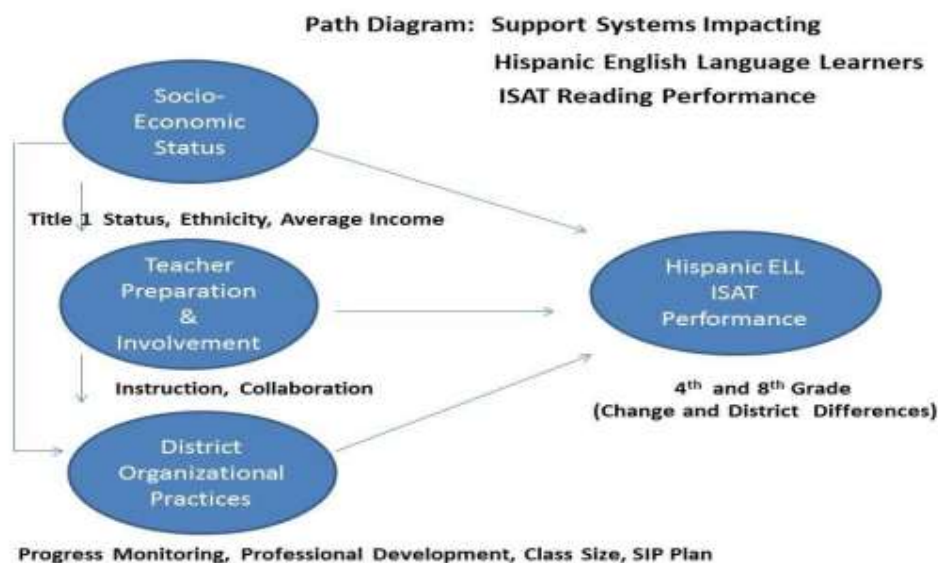
Figure 1: Support Systems Path

Readiness to Learn

According to the report conducted by the Council of the Great City Schools of 2011, 27% of Latino children lived in poverty compared with 10% of White children in 2007. As a contributing result, nearly half of all four-year-old Latino children participated in home-based care programs or had no regular non-parental care. In 2008, at least 39% of Latino children

had a parent with less than a high school diploma; 29% had a parent with a high school diploma, and at least 12% had some college experience (Simon et al., 2011).

Parental involvement is noted in many studies with regard to reading readiness skills for incoming Kindergarten students. The Census Bureau conducted the American Council Community Survey in 2007 that reported Latino children between the ages of 3 to 5 years-old were less likely to have parents involved in home literacy activities than White or Black children (Simon et al., 2011).

With regard to the parental involvement statistic, the survey similarly found that Latino children between the ages of 3 to 5 years-old, were least likely to have school readiness skills than White or Black Children (U.S. Department of Education, 2009).

The skills surveyed were the recognition of all letters, counts to 20 or higher, writes name, reads or pretends to read storybooks, and has three to four school readiness skills. In every category, Latino children scored at least 15 to 20% lower than Blacks or Whites. With regard to a compilation of these skills, only 26% of Latino children in the age category noted had three to four of the readiness to learn skills as compared to 44% for Blacks and 46% of Whites (U.S. Department of Education, 2009).

While "readiness to learn" is noted as being helpful in preparing students for education, numerous other factors may also impact academic student achievement. In particular, Latino ELL's literacy proficiency is a concern due to a number of variables that may impact their academic performance. For instance, research has established that a child's language development hinges on the quality and quantity of maternal speech noted as a variable directly linked to socioeconomic status. In other words, SES impacts the developmental trajectory of language depending on a child's learning experiences (Hoff, 2003).

Several academic proficiency studies for Latinos and the general student population have been conducted in Illinois. However, much of this research focuses on the Chicago Public Schools (CPS). Due to the high concentration of Latino ELLs in the CPS system, this study will review the history and current educational support services available to students. It is important to note that the findings noted in the CPS study are not necessarily generalizable to all school districts in Northeast Illinois as examined later in this study.

At a time when public school performance was at its worst, an extensive study of Chicago Public Schools (CPS) was conducted in the 1990s. According to William Bennett in 1988, the Secretary of Education at that time, Chicago Public Schools were "the worst in the nation" (p. 13). The school system was plagued with high dropout rates, extremely low academic achievement, constant labor strife, unstable leadership, and a clear lack of political and public support. By 1990, nine of ten CPS students were classified as low-income (Bryk, Sebring, Allensworth, Luppescu & Easton, 2010).

Almost 30% of the CPS population, at this time, was Latino and ELLs. A timely study was published in 2010 by the Consortium on Chicago Public Research (CCPR) that analyzed the CPS system from 1990 to 1997. This timeframe was characterized as having undergone a radical decentralization and recentralization in the CPS system that resulted in more substantial control for individual schools. The study revealed numerous findings and key variables impacting student learning (Payne, 2008).

Payne (2008) described the CCPR as a prominent longitudinal study of documented research whose process of change may only be paralleled by the Manhattan Project. While Payne sees mixed results with regards to future implications as a result of this study, he notes that important findings indicate "beginnings of a literature on successful urban school districts" which were not evident when the decentralization and other key initiatives were set forth for CPS in 1990. According to Payne, the framework of this study is called the Five Fundamentals for school improvement. These factors are noted in a wide body of research as

having a significant impact on the literacy proficiency of minority students including Latino ELLs. The Five Essential Fundamentals include the following components:

• *Instructional Leadership* which includes principal instruction leadership and teacher-principal trust.

• *Professional Capacity* which includes the quality of professional development available in a school, teacher collaboration, and the degree to which the adults in a building take collective responsibility for what happens in their schools.

• *Learning Climate* which includes the degree to which students perceive high expectations, feel that teachers are personally attentive to them, and feel safe.

• *Family and Community Involvement* which includes how teachers and parents communicate and the level of human and social resources in the community.

• *Quality of Instruction* which includes the level of intellectual challenge in instruction and the degree to which students are academically engaged. (Sebring, Allensworth, Bryk, Easton, & Luppescu, 2006)

The Consortium amassed extensive data to support the predictive power regarding how this Essential Framework, or Fast Five as it is commonly referred to, predicts overall student achievement. In their words, "We found that schools strong in most of the essential supports were at least ten times more likely than schools weak in most of the supports to show substantial gains in both reading and mathematics" (Sebring et al., 2006). For schools that were able to implement and sustain the Fast Five, most of the students achieved higher reading proficiency rates. This detailed study offers a number of insights regarding the needed impetus for change. The following factors are noted by the Consortium as a "high priority" or as having a marked influence on the overall achievement of at-risk students which includes Latino ELLs (Payne, 2008).

The Consortium study revealed that integrated schools had the highest improvement rate and the lowest stagnation rate with regard to reading achievement. In other words, integrated and racially diverse schools were much more likely to progress than schools that were predominately minority (a combination of Latino and African-American) students. This particular group of students tended to be clustered in the middle of the socio-economic range when compared to other schools with different racial and ethnic composition (Bryk et al., 2010).

The study also found that community social capital is a critical resource for advancing school improvement. Bourdieu (1986) defines social capital as an "aggregate of the actual or potential resources which are linked to possession of a durable network or membership to a group which provides each of its members with the backing of a collectivity-owned capital" (p. 23). The presence of social capital can predict why the essential supports took root in some CPS schools but not in others. Schools with high densities of low socio-economic status (SES) and living under extraordinary circumstances were almost exclusively unable to achieve broad-based organizational change during the seven-year period of the CPS study (Bryk et al., 2010).

Understanding the premise of social capital and the extent to which SES can impact student achievement is crucial to this study. Understanding key support factors needed for all students, especially those severely lacking in social capital, was a priority to this study.

In the fall of 2012, further credence was given to the CPS study and specifically the Five Essentials. The ISBE, in collaboration with the University of Chicago and its Urban Education Institute, conducted a state-wide survey in all public education settings based on the Fast Five. ISBE notes that Illinois led the nation by providing a unique opportunity for teachers, students and parents to have a voice in improving their schools. ISBE asked administrators in nearly 4,000 Illinois public schools to give the 15 minute research-based survey to parents, teachers and students within their districts (ISBE, 2012a).

The purpose of disseminating the survey across the state was to identify strengths and weaknesses in the Five Essential areas, previously noted by the CCPR in its CPS longitudinal study, as being a key indicator in high student achievement. In summary, the framework will embed questions related to instruction, environment, leaders, teachers and families.

Information provided on ISBE's website further indicates that the survey will target particular variables within the Five Essentials that will be measured by specific indicators. The "essential" variables are summarized in the following manner:

1. Effective Leaders (All Teacher Measures)
2. Collaborative Teachers (All Teacher Measures)
3. Involved Families (Mostly Teacher Measures)
4. Supportive Environment (Mostly Student Measures)
5. Ambitious Instruction (Mostly Student Measures)

Each of the Five Essentials are identified as being a necessary "piece to the puzzle" with regard to successful academic achievement with sufficient preparation for post high school study and careers. One piece missing may indicate a "gap" in achievement that may be difficult to fill (Williams & Montgomery, 2012).

The Illinois School Board of Education noted that it intended to use the survey for school improvement planning in order to create a robust picture of school performance on report cards beyond test scores. ISBE notes that the survey *may* be used for principal evaluation and accountability. Finally, ISBE indicates that the survey *will not* be used for identifying respondents (indicating that responses are completely anonymous) nor will be utilized in determining personnel decisions (Williams & Montgomery, 2012). The results of the survey to date have not been published.

Following the CPS longitudinal study, the Urban Education Institute or "U Impact Chicago" compiled information which were used as a basis for the ISBE Fast Five survey. Of particular interest to this researcher's study, the Five Essentials indicate that schools strong in three or more of the five essentials are 10 times more likely to make substantial gains in math and reading (Williams & Montgomery, 2012).

ISBE indicated which of the five frameworks demonstrates substantial improvement in student test score growth. In particular, schools that have effective leaders and collaborative teachers will find a 34% growth in student math scores and a 31% increase in reading achievement. If schools are weak in essentials 1 and 2, effective leadership and teacher collaboration, math growth is only 13% and reading is limited to 10%. Conversely, schools strong in essentials 3-5, (involved families, supportive environment, and ambitious instruction), note an increase in student test growth from 8% to 38% in math and 50% in reading achievement. Hence, schools that exhibit combined strengths in all Five Essentials are 10 times more likely to improve substantially (Williams & Montgomery, 2012). ISBE (2012b) is confident that this study, required under state legislature last year, will assist schools in targeting areas of improvement and identify positive developments that may not be evident in test scores.

The Five Essentials were initially developed and researched, as previously discussed, in the CPS longitudinal study published in 2010 by the Consortium on Chicago Public Research (CCPR). While a number of schools did not receive high marks in the five components earmarked as essential to attaining and sustaining academic achievement, the CCPR did reveal exceptions to these findings which included Herbie Hancock Elementary School. It is located in a high-crime neighborhood but was credited for creating strong links with organizations both within and outside the community (Bryk et al., 2010).

The school built relational trust among school community members while pursuing a coherent program of improvement which was both academic and social. Further, it aligned curriculum with standards school-wide, built common instructionally embedded assignments and utilized them regularly for internal accountability. In addition, the Hancock's administrative team created extensive supports for professional development and paid particular attention to recruiting and nurturing capable new staff that was committed to teaching in a "school community" environment (Bryk et al., 2010).

As an exemplar, this school established a sense of safety and organizational order from the onset of its reorganizational efforts. It assembled a core social services support team with access to external program services which became a key and necessary instrument in its school reform agenda. A final milestone for this school was its ability to reconnect families and support them in the education of their children. The Hancock School instituted an array of initiatives that brought family and community members into more active and supportive relations with students (Bryk et al., 2010). This particular partnership, as noted by this researcher, is a component that is challenging and, at times, very difficult to initiate or sustain in school settings nation-wide.

Hancock overcame many obstacles by creating a well-rounded community school model whose success was directly and indirectly impacted by numerous stakeholders. Clearly, administration, teachers, students, service providers, and the community at-large created an impetus for change. The CCPR found that a strong base of community social capital had a significant impact on student achievement. However, the study also found that it is important to recognize that this success was in part due to the core institutions of local communities. The school in turn also strengthens the overall efficacy of a neighborhood. The CCPR noted that often times the whole community is needed to raise a child (Payne, 2008).

Statistically, Hancock Elementary School had high attendance rates throughout the duration of this seven year study from 1990 to 1997. High attendance is not often noted in the type of school environment such as Hancock. However it was able to make an additional, although slight improvement from 92.1 to 92.6% attendance by the end of this study. With regard to its standardized test scores, Hancock made a 10% reading gain during this time period. It also made a 19% mathematics gain. In comparison to similar elementary schools that underwent drastic decentralization initiatives, the average CPS reading improvement was 5%.

Almost 70% of all schools noted an improvement in reading. However, Hancock Elementary achieved reading scores that were an additional 5% higher than its counterparts.

These gains in reading and mathematics place Hancock solidly in the top quartile of elementary schools in Chicago with regard to improvements in academic productivity. When compared to its counterparts, the CCPR found that a compilation of Hancock's initiatives in conjunction with sustained efforts enabled it to attain gains that were not possible in schools that did not create or maintain a similar framework (Byrk et al., 2010). As a result, the researcher included Hancock Elementary as a potential example of a school that exhibits support needs as identified in the Support System Path.

Payne (2008) published further insights regarding this CPS study in his book entitled *So Much Reform, So Little Change.* In this work, he concurred that the CCPR outcomes achieved by the Hancock initiative were significant. The combination of social support and academic press when present at high levels can have a significant and direct impact on student achievement. Importantly, he noted, that these sustained improvements are even possible in urban settings characterized with high poverty, low-income, and elevated levels of minority students.

Further, Payne emphasized the need for not only reform but also the importance of maintaining programs long enough to see if they work well. In other words, understand what

needs to be changed, make mid-course corrections, but don't continue to make drastic changes just for the sake of change. Continued growth is instrumental, according to Payne, and making fundamental changes to any of the Five Essentials could hinder their development and long-range sustainability. In a time of high stakes testing and accountability, perhaps a number of districts could benefit from Payne's findings (Payne, 2008). With regard to the Support System Path, all three independent variables are well represented in the CPS study and may have a clear impact on Latino ELL literacy performance.

The Role of Schools, Families, and Education Policymakers Regarding Literacy Support

At a time when schools are facing government takeover if they do not repeatedly meet AYP but are often faced with less funding, a vast amount of research is emerging to help schools "fix" their problems. This study elaborates on areas for improvement previously introduced in this study as well as additional factors that are emphasized and repeated in numerous studies regarding measures to improve student achievement. While not all of these studies directly notate improved literacy techniques for Latino ELLs, all of them are directed toward school environments that often serve this population.

Historically, school and classroom size has been debated in a number of studies regarding whether it has a significant impact on the social and academic success of students. Sawhill and Ludwig directed a study on the long-term effect of class size. It noted a significant impact especially with regards to the intervening in the lives of disadvantaged children before the age of ten (Sawhill & Ludwig, 2007). The study was linked to an historical study that inaugurated systematic empirical analysis of educational inequality conducted by James Coleman entitled *Equality of Educational Opportunity* (1966).

It was perhaps the most costly social science research project conducted at that time. One of its most significant findings focused on *fate control*. This term was defined as an individual's confidence that he or she has some control over his or her own destiny. In Coleman's study fate control turned out to have a stronger relationship to achievement than all school-related factors put together. The study also found that minority students without much educational strength are placed with schoolmates with strong educational back grounds, their achievement is likely to increase (Coleman, 1966).

Similar studies note a trend in these finding regarding the strength of the correlation between fate control and achievement and the ability to control their environment. Ferguson (2006) noted in surveys of suburban students that especially minority students were worried about whether people think they are smart. This low self-concept continues through college and persists in the form of not seeking help when needed. In addition, Ferguson (2001) noted in his review of literature that race, ethnicity, and class all affect teacher perception and all affect teacher behavior.

How could school size impact academic success for Latino ELLs? According to Resnick and Zurawsky (2003), small classes can deliver lasting benefits, especially for minority and low- income students. Resnick and Zurawsky found that most education research has confirmed that small classes yield benefits. Specifically, it found that at least two years spent in a smaller class yields the highest academic improvement. Smaller settings can shrink the achievement gap, reduce grade retention, result in fewer disciplinary actions, less dropping out, and more college- entrance test taking (Resnick & Zurawsky, 2003).

Resnick noted that one way to reduce the costs of having smaller classes might be shifting resources away from ineffective educational interventions, such as extra teachers in a school that do not have regular classroom assignments. In order to have maximum impact, the study suggests the following:

1.   Early intervention is needed and should begin by first grade.
2.   The number of students per class should ideally be 13 to 17.
3.   If resources are a concern, target implementation for at-risk students (Resnick & Zurawsky, 2003).

Additional research also contemplates how small a "small school" must be to encourage student learning and development. For instance, evidence suggests that schools with the largest number of students, particularly minorities, have the lowest academic performance and tend to have the least experienced teachers (Wasley, 2002). This is of particular interest to this study as ELLs have not only particular academic needs but also require teachers that are able to meet their specific language needs. Wasley states that both class and school size influence whether teachers are able to engage students in meaningful discussions leading to increased trust and crucial citizenship skills. This evidence is also reiterated following a drastic reform to replace larger schools with smaller learning communities. Data included in the New York City Department of Education Progress Report found that schools with 500 students or less had higher academic outcomes particularly in schools with a Latino and ELL majority (Flores & Chu, 2011). The study further noted a need for additional research in more fluid language support that is not necessarily grounded in the dichotomy of bilingual or dual language instructions vs. ESL. In other words, perhaps more research is needed regarding basic "best practices" for ELLs that are good for all students (Flores & Chu, 2011).

The results of the New York City study are also similar to the context of Illinois. Specifically, a report focusing on Latino majority schools noted parallel findings discussed in the Consortium Report on the CPS system (Valdez & Espino, 2003). However, it further detailed that a majority of the schools continue to be overcrowded, have high mobility rates, elevated teacher turnover and traditionally poor academic achievement. The study found that an overwhelming majority of the students do not meet or exceed the Illinois Learning Standards in reading or mathematics (Valdez & Espino, 2003).

Students typically perform worse as they progress to the next grade level. As a result, by the time many Latino/Latina students reach high school, 76 to 84% do not meet the Illinois Learning Standards in reading or mathematics. Discouragingly, these Latino students also have high dropout rates and low graduation rates (Valdez & Espino, 2003). According to Fry (2003), dropout rates are a key performance measure for the American Education Center. A report generated by the Pew Hispanic Center notes that there is a standard method for calculating the dropout rate which leads to a distorted picture of the status of Latino students in U.S. schools (Fry, 2003).

Notably, a number of incoming immigrants dropped out of school in their respective countries prior to coming to American public schools. Learning a new language and undergoing employment training is a long-term policy challenge for Latino youth and the American economy. Unfortunately, data for Latinos dropping out of U.S. schools indicate a grave, long-term problem for the Latino community and society as a whole (Fry, 2003). In order to improve the academic literacy rates for Latino ELLs, the educational system will need to better address how to keep this population of students engaged and in school.

Lack of student engagement may be of key importance to this study as it relates to academic performance. The pressure on schools to meet AYP under federal NCLB guidelines makes Limited English Proficient, or ELL, students a liability for schools and thus creates an incentive for them to encourage these students to drop out (Bajaj, 2009). The result is often pressure felt by ELL students to learn English in a short time frame. Statistically, this process cannot be too rushed as it normally takes ELL students five to seven years to master academic English (Collier & Thomas, 2009; Hakuta et al., 2000).

This section of the literature review is represented by each of the independent variables of the Support System Path. For example, fate control, class size, factors impacting student drop-out rates and student engagement are represented by SES, teacher involvement, practices, district organizational policies such as professional development offerings, and finally student engagement as represented by the dependent variable, student literacy proficiency.

A culmination of the literature review entails an examination of the national and state trends of literacy academic achievement as represented by the dependent variable of the Support System Path, academic literacy achievement. In this case, the level of achievement is measured by the National Assessment of Educational Progress.

METHODOLOGY

This study focused on how Latino ELLs learn and what key supports best influence their academic literacy outcomes. The online survey consisted primarily of teachers in thirteen participating northeast Illinois public school districts with at least a 20% Latino ELL population (N=334). This survey was based on key support system variables identified in the literature review as being strong indicators of academic literacy proficiency. This questionnaire, or survey, was conducted online with teachers and administrators from thirteen participating districts.

Those districts represented in the aggregated data phase of this study were solicited to participate in the online survey. Thirteen districts agreed to participate (N=334). All school districts had at least a twenty percent Latino ELL population for solicitation in order to create a potentially similar demographic representation of this student population from district to district.

School districts that represented the highest number of respondents came from primarily inner-ring suburbs with a few representing more suburban locations. Virtually all of these districts is located in the Chicago metropolitan area. While not all school settings represent exactly the same demographics, this baseline percentage created a pattern of consistency for similar Latino ELL populations represented in this study.

With regard to the survey's content, the first eleven questions included background information regarding the respondent's role, level and nature of teaching experience, and classroom composition. The remaining nineteen questions were derived from the literature review as having an impact on ELL student academic success, were represented by a minimum of one survey item. More than half of these questions were quantitatively represented in multiple versions to increase the reliability of the study.

The online survey was analyzed to identify and compare individual questionnaire items.

Data reduction was accomplished by constructing potentially relevant indices. These survey questions were then checked for reliability and the resulting indices were then linked to perceptions about Latino ELL student academic engagement (academic proficiency) by using a linear multiple regression analysis.

The study addressed the following questions:
1.   Within participating survey districts, to what extent do instructional practices impact the literacy outcomes of Latino ELLs?
2.   Within participating survey districts, to what extent do organizational practices impact the academic needs of individual Latino ELLs?

A pilot study was initially conducted in a public school district not included in the actual survey. This pre-test or pilot was reviewed by an "expert panel" of education

professionals. The researcher used their feedback to refine the survey instrument. The actual survey results were analyzed by SPSS data analysis. The survey responses were coded and analyzed with a mixed- methods approach. Responses to rating scale items were treated as continuous data for data analysis (Fink, 2006). The development of the survey instrument utilized diverse methods, (e.g. Likert scale, expert panel review, factor analysis, and multiple regression analysis) to ensure that the instrument was valid and reliable (Cresswell, 2008).

Validity and Reliability

The research design of this study includes a mixed study of quantitative and qualitative analysis and additional f measures to ensure validity and reliability. Quantitative data collection techniques allowed the researcher to check for content, criterion related and construct validity to create a sound and valid study (Creswell, 2008). Leedy and Ormrod (2005) note that by collecting two distinct, but related, sets of data from multiple resources, the researcher will be able to formulate a meaningful description of a complex, multifaceted study. In conclusion, the use of multiple means of data collection including aggregated institutional data, a pilot survey reviewed by an "expert panel" or external auditors, and the survey itself, were measured by SPSS data analysis produced results that readers can interpret with at least general confidence. Any known limitations and delimitations that may impact the reliability of the data analysis are described in the following section of this study.

Limitations of Study

This study examined the literacy rates of English Language Learning and native English speaking students at the fourth and eighth grade benchmarks. Specifically, the study earmarked Northeastern Illinois public school districts with a Latino ELL population of at least 20%.

1.   Two exceptions to this percentage cut-off were made for districts that maintained at least an 18% Latino ELL population and if the researcher noted a significant, recent, rise in the Latino ELL composition of the district in question. As a result, most, if not all, of the districts were similar in demographic composition especially with regard to the Latino ELL population which was all governed by ISBE regulations.

2.   While the sample size should be adequate survey participants (N=334), the results of this study may not, necessarily, be generalized to all school districts in Illinois. In addition, a mixed-studies survey derived from a subset of the demographic institutional district quantitative analysis was employed. This survey included Northeastern Illinois teachers and administrators from 13 districts and addressed potential factors impacting literacy achievement. All survey questions were based on variables derived from the literature review and specifically a compilation of variables representing repeated, scholarly references.

3.   A number of the survey questions were asked at least twice in varying ways in order to repeatedly address independent variables. This was done to increase the reliability and validity of the findings. While not every question was addressed more than once, many were and included groupings under the indexes of teacher practices, policies and administrator involvement, policies to strengthen the nature of this study. The study also included three qualitative, open-ended questions which further validated findings noted in the quantitative section of this survey.

4.   While the information from the surveys contributed valuable information to this study because these educational professionals work directly with Latino ELLs in a wide variety of schools settings, creating a reliable base for analysis, the findings may not be representative of all Illinois schools or populations with similar demographics or school support systems. Thus, any generalizations derived from this research and its findings should

be made with caution.

     5.   The researcher relaxed the confidence level from .05 to .10 for several aspects of this study. Generally, the confidence level in educational research is .05. (Ary, Jacobs, & Razavieh, 1996; Field 2009). However, Bartlett et al. (2001) note that an alpha level of .10 or lower may be used if the researcher is interested in identifying potential marginal differences or other statistical phenomena as a precursor to further studies (p. 45).

     In addition, Lind et al. (2010) note that there is no one level of significance that is applied to all tests. Traditionally, the confidence level is set at the .05, .01, or the .10 level depending on the type of research being conducted (p. 330). With this in mind, Lind et. al note the importance of the researcher deciding upon on the level of significance before formulating the decision rule and collecting sample data (Lind et al., 2010). In this case, the researcher did so understanding, in advance, the nature of this exploratory, mixed-methods educational research.

     Due to the nature of this unique study, for which there is no known previously published research identical to this study, several exceptions to the .05 confidence limit were made based on the rationale outlined by Bartlet et al. and Lind et al.

     Based on the wide-body of literature review, open-ended and quantitative question responses, those survey questions that collectively were most likely to impact student engagement were considered as being most significant to the analysis of section five of this study. While some variables were dropped as being, potentially, much less significant than other variables the possibility exists that some of these variables may have been impactful to analysis and could be considered for future research.

     6.   The author of this study also notes that while bias is not the intention, a researcher's reporting may be impacted by his or her own ethnicity and cultural upbringing (Chun Hsiung, 2013). As a result, the researcher employed reflexivity (Chun Hsiung, 2013) throughout the dissertation process. Qualitative interviewing, or in this case surveys involves a continuous process of reflection on the research. Reflexivity is the process of examining both oneself as researcher, and the research relationship (Chun Hsiung, 2013). Self-searching involves examining one's "conceptual baggage," one's assumptions and preconceptions, and how these affect research decisions, particularly, the selection and wording of questions (Chun Hsiung, 2013).

     Chun Hsiung (2013) notes that reflexivity involves making the research process itself a focus of inquiry, laying open pre-conceptions and becoming aware of situational dynamics in which the interviewer and respondent are jointly involved in knowledge production.

     The researcher of this study continually reflected upon this reflexivity as she investigated the academic support needs of Latino ELLs. While it is impossible to be entirely objective, the author based her findings on research such as standardized test scores and survey information.

Data

     This survey was exploratory in nature. Accordingly, the level of significance was relaxed to .01 in order to capture a number of potentially impactful support systems that affect Latino ELL educational outcomes (Bartlett et al. 2001); (Lind et al. 2010). A factor analysis was constructed from those survey questions that collectively were most likely to impact academic outcomes. A wide body of research indicated that student engagement was a strong indicator of academic achievement. Because actual test scores were not available, student engagement was used as the dependent variable of analysis. The results of the survey construction and ensuing bivariate Pearson correlation as predictors of Latino ELL student engagement are included, below, in Tables 1 and 2 respectively.

Variable and attribute information, including factor loadings and Chronbach's alpha scores for reliability, are included in Table 1. Three indices emerged from the factor analysis: Teacher Needs, Administrator Involvement, and Student Characteristics. The questions included within each index are included in Table 1. Each met the criterion for factor loading at .4 or higher and index alphas for reliability of greater than .6. These combined measures were used as predictors of engagement in bivariate correlational and multiple linear regression analysis.

Table 1
SURVEY CONSTRUCTION

Index Name	Questions	Attributes	Factor Loading	Cronbach's Alpha
Teacher Need	Level of professional development to instruct Latino ELLs	1= Little to None, 2=Low, 3=Medium,4=High	.70	
	Frequency with which teachers meet to discuss ELL needs	1=Rarely, 2=Sometimes, 3=Often	.63	
	Teacher level of involvement in key decision-making	1=Little to None, 2=Some/Not Enough, 3=Sufficient	.69	.63*
Administrator Involvement	Extent to which school missionstatement involvesacademic learning needs of ELLs	1= Little to None, 2= Low, 3=Medium, 4=High	.63	
	Degree to which ELL program best fits literacy needs of your school's ELLs	1= Little to None, 2= 3=Sufficient	.72	
	Extent to which enough highly qualified ELL staff work at your school	1=Little to None, 2=Some/NotEnough, 3=Sufficient	.47	

| Involvement of ELL students in civic/community opportunities | 1= Little to None, 2= Low, 3=Medium | .57 | .77* |

| Emphasis on parental involvement in child's education | 1= Little to None, 2=Sufficient 3=Sufficient | .65 | |

| Data tracking regularly shared monitor ELL academic performance | 1= Yes 2=No | .56 | |

| ELL Class Size | ELL classroom size | 1= 0-10, 2= 11-20, 3= 21-30 4= >30 | -.91 | |

| ELLlanguage proficiency in classroom | 1= Low English Proficiency 2=Medium Proficiency 3= High | . 47 | .52* |

*Chronbach's Alpha Score for Indicated Index Name

Table 2					
BIVARIATE PEARSON'S CORRELATIONS AS A PREDICTORS OF LATINO ELL STUDENT ENGAGEMENT					
Indicator Name	Classroom Characteristics	Teacher Needs	Administrative Involvment	Data Targets Individual Performance	Academic Student Engagement
Teacher Needs	.22*		.74*	.50*	.45*
Administrative Involvement	.05	.74*		.55*	.46*
Academic Student Engagement	.07	.45*	.46*	.31*	

***Correlation is significant at the 0.01 level (2 tailed) Bartlett et al. (2001); Lind et al. (2010)

Results

In order to more fully substantiate and verify the strength of the relationship between the independent variables and student achievement, a multiple regression analysis was conducted. Two independent variables, teacher needs (index), and administrative

involvement (index), are included and academic engagement of Latino ELL students (single item) is retained as the dependent variable. The coefficient of determination or R^2 is .23 indicating that twenty-three percent of the variance in the dependent variable is explained or accounted for by the independent variables in the model. Since the coefficient of determination is a PRE (i.e. proportional reduction in error) measure, the variables in the model improve predictions for the dependent variable scores by over one-fifth as compared to random guessing. The overall fit of the model is assessed with an analysis of variance (p=.000). As a result, this model adequately represents these relationships and provides a reasonable fit for these data. More importantly, the beta weight estimates for this model indicate an independent effect for the "instructor needs index" (Beta=.22, p=.01) and a slightly stronger influence of administrative involvement (Beta=.27, p=.003).

The single variable measure about whether data is used to track individual Latino ELL students was no longer significantly related to the dependent variable on student academic engagement. This indicates that the bi-variate relationship is not significant when controlling for the two indices on "instructor needs" and "administrative involvement" (Beta=.06, p=.41). This finding indicated that using data to assess individual Latino ELL students does relate to student academic engagement outcomes. However, the relationship is indirect as it relates to instructor needs and administrative involvement indices.

The conclusion to be drawn from the multivariate analyses is that teacher and school characteristics predict perceptions of strong student academic engagement for Latino ELLs. The two indexes had independent, unique effects on perceptions of student engagement. In other words, teacher needs indicated a predictive validity independent of administrative involvement.

Holistically, school characteristics can be identified as teacher needs and administrative involvement. Of these two, administrative involvement is about one-sixth more important in predicting student engagement than teacher characteristics.

A summary of these findings indicate that the future research of administrative involvement and teacher characteristics, as they relate to the "supply" side of the education equation, are related but not exactly the same. If student learning outcomes are the "demand" side of this equation, then some significant inputs to student academic engagement from the "supply" side include teacher and administrative background, resources and characteristics. This analysis suggests that what the school brings to the table in enhancing student academic engagement has two relevant sub-parts: teacher and administrator practices and resources.

CONCLUSIONS AND RECOMMENDATIONS

All of the survey variables noted by respondents as being marginally utilized in schools but potentially vital to student success are embedded in the Five Essentials Framework. The framework was first introduced as being instrumental to the academic success of Latino ELLs and at-risk students in general at Carson Elementary in Chicago.

A unique, longitudinal study conducted in the Chicago Public Schools from 1990-1997, as previously describe in this research study, was the impetus of the Five Essentials Framework. The University of Chicago and the Urban Research Center have joined with the Illinois School Board of Education to support this framework because it may be instrumental for future student academic success. Each concept of this framework addresses and aligns with the research questions, hypotheses and the findings of this study. Survey respondents from participating districts indicated that the use of support variables, as identified in this survey, could be improved upon to better meet the academic literacy needs of Latino ELLs.

High-stakes testing, conducted in English, appears to have no end in the United States. Most recently, the Common Core initiative is the new variance to this theme. Reliance

on such programming and policies, including Common Core and NCLB, are noted by Wright and Choi (2006) as putting intense pressure on schools and administrators to raise the test scores of ELLs. In fact, many school districts feel that English instruction for many ELLs continues because the 'high-stakes tests' are also in English.

The need to improve test performance puts pressure on schools to decide which language program models should be utilized for ELLs. De Jong (2011) describes the long history of debates regarding ELL program models and their underlying assumptions. This ongoing discussion and conflict indicates that, nationally, there are different views regarding how to educate ELLs. De Jong notes that the focus and design of language programs are influenced by high stakes testing and can clearly limit the focus and scope of how students are educated (De Jong, 2011). Because research methods and results are never absolute, most findings are open to criticism and the debate continues to exist (Peregoy & Boyle, 2013).

A recommendation would be to more closely analyze the variables and its subcomponents of this multivariate analysis as a means for determining what is occurring in school environments. For instance, within any given school district, what emphasis is given to each of these variables? In addition, are all of these support variables consistently present and effectively measured? Districts could then compare their Five Essentials survey results and examine its combined use with the ranked support variables. These comparisons should include an open dialog among school districts regarding their findings including what programs and support factors consistently have the highest impact on their students' Latino academic literacy performance.

Finally, engagement was a recurrent theme in this study. High-stakes testing does not parallel with engagement as it relates to low-stress ELL student learning (Bajaj, 2009). For decades research has proven that fate control and student achievement or engagement are interchangeably linked (Coleman, 1966; Ferguson 2001). Unreasonably rushing students to learn and creating expectations beyond their reach is unreasonable (Collier & Thomas 2009; Hakuta et al., 2000). In order to fully address Latino literacy proficiency, the preceding recommendations must also include open, on-going collaboration among state and federal educational departments, educationally affiliated political organizations, local school districts and their respective communities. All of these entities must be vested in employing and monitoring sound, effective ELL instruction, assessment, and monitoring practices to ensure every student has the opportunity to be academically prepared for secondary education and beyond.

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DEVELOPING AN EVIDENCE-BASED MANAGEMENT APPROACH FOR CREATING HIGH-PERFORMANCE HIGHER EDUCATIONAL INSTITUTIONS

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ABSTRACT

Effective higher educational institutions are an essential building block in a country's development. In recent times these institutions have come increasingly under pressure from the global trend toward massification of higher education, i.e. the large influx of new students, and increasing student demands for better and more diverse education, while concurrently public funding is experiencing severe budget cuts. As a consequence, institutions have been forced to expand, improve, and diversify. Those institutions that manage to thrive under these challenging circumstances by dividing their attention equally between improving the quality of education and optimizing the internal organisation, are known as high-performance higher educational institutions. This article describes an evidence-based management approach for creating these high-performance higher educational institutions, i.e. institutions which deliberately make decisions that help them move forward and transform into long-term high performers.

INTRODUCTION

Traditionally, research in the field of education has often focused on improving the quality of teaching in higher educational institutions (Kennedy, 2011; Almayali & Bin Ahmad, 2012; Díaz-Méndez & Gummesson, 2012; Al-Khasawneh & Moh'd Futa, 2013) and, to a lesser degree, on the quantity and quality of research output (Abdulsalam & Mawoli, 2012; Aydin, 2012; Nisei & Nisei, 2013). This does not really come as a surprise considering that a high quality of teaching is generally seen as an important driver for the development of a country (Wang, 2001, Salmi, 2009; Ramaprasad, 2011). In recent years, the quality of teaching has come increasingly under pressure from the global trend toward massification and internationalization of higher education, i.e. the large influx of new students, and increasing numbers of (international) students looking for better and more diverse education, while at the same time education budgets are under pressure because of the aftereffects of the economic crisis (Auguste et al., 2010; Parker, 2013). This forces institutions to expand, improve and diversify while having fewer resources available. They have to manage the expanding student body as well as the accompanying increases in facilities, staff, lectures, and courses; maintain and improve the quality of teaching, facilities, and curriculum; obtain sustainable funding; improve labour market attractiveness of students; increase managerial

and staff capacities, and innovate both the teaching and management processes of the institution (Harrison-Walker, 2009; Păcuraru, 2012). Some scholars even predict 'an avalanche' which is going to change the education sector fundamentally, because three fundamental challenges need to be addressed globally: (1) universities and new providers need to ensure that the education they provide to their students will increase their employability; (2) the cost of education and the quality of education (and research) need to be separated so both can be managed individually; and (3) the entire learning ecosystem needs to be redesigned in order to support alternative providers which tailor to the future needs of both the work environment and new students (Barber et al., 2013).

Higher education institutions that manage to thrive in this dynamic environment and achieve sustainable high results are qualified as high performing institutions. Unfortunately, to paraphrase Altbach (2004), the paradox of these high performing institutions is that 'everyone wants one, no one knows what it is, and no one knows how to get one.' The literature, however, does provide several characteristics of high-performance higher educational institutions. Auguste et al. (2010) describe the strategies of highly productive institutions, which define productivity as the percentage of students that graduate within a set period of time, by systematically enabling students to reach graduation, reducing non-productive credit courses, redesigning the delivery of teaching, redesigning core support services, and optimizing non-core services and other operations. Based on research at Brazilian universities, Zoghbi et al. (2013) argue that students' social-economical characteristics, student/faculty ratio, and capital input play a role in the productivity of an educational institution. Altbach & Salmi (2011) identified, in their review of world-class research universities, the following key success factors: attract, recruit, and retain leading academics; have abundant funding in place for setting up first-rate facilities and physical infrastructures and for attracting and retaining high-level academics; and have an appropriate regulatory framework with strong and inspiring leadership. They also identified five 'accelerating factors' that may further the creation of world-class research universities: (1) convince large numbers of overseas scholars to return to their country of origin; (2) use English as the institution's main language; (3) limit the number of disciplines; (4) use benchmarking to compare oneself with other excellent institutions and to learn from that comparison; and (5) introduce a distinctive curriculum and pedagogical innovations. Mok & Cheung (2011) describe the major policies introduced by Hong Kong to create world-class high education institutions: creating 'politics of competition' among institutions for both state and non-state resources; recruiting and retaining global talent; and internationalizing curricula in order to achieve global aspirations. Waal & Chachage (2011) list the characteristics of a world-class university: an excellent research institution that is recognized by peers and which enjoys academic freedom and an atmosphere of intellectual excitement, a place where the best academics want to be, enrolling only the best undergraduates, having a low student/faculty ratio, excelling in a large number of disciplines but not necessarily in all, having excellent research and teaching facilities, having an international outlook, enjoying substantial funding to support its research and teaching activities, making effective use of international networks and alliances, producing well-qualified graduates who are in high demand on the labour market, having a clear governance structure that ensures good control, and being well-managed while at the same time pursuing excellence in its management systems.

One thing that research into high-performance higher educational institutions shows is that they pay attention to teaching aspects as well as organisational and managerial aspects, which they think need to have an equal level of high quality in order for the institution to become world-class. Academic research in the field of education should therefore not only look into ways to increase the quality and delivery of teaching but also into ways to increase

the organisational and managerial capacities of education institutions. The current literature on capacity development has yielded quite a few insights and viewpoints on how institutions can move forward in this respect, but there is still no consensus on which method is the most effective. To work towards reaching a consensus on a development approach toward high-performance higher educational institutions, we propose in this article an evidence-based management approach for creating these institutions. Interest in evidence-based management in general is growing as a logical consequence of the increased need for well-informed decision-making in today's highly complex world (Baba & Hakem Zadeh, 2012). In the literature evidence-based management is defined as "the systematic application of the best available evidence to the evaluation of managerial strategies" (Kovner & Rundall, 2006, p.6). Although evidence-based management is a relatively young research field, a fair number of researchers have already proposed a framework for applying evidence-based management (for instance Marr, 2009, and Del Junco et al., 2010). One such a framework is that of Rousseau & Barends (2011) which consists of four steps to apply evidence-based management in practice: (1) use the best available scientific evidence from peer-reviewed sources (literature review); (2) gather systematically organisational facts, indicators and metrics to obtain evidence from practice (field research); (3) make an evaluation assisted by procedures, practices and frameworks that reduce bias and improve the quality of the decision-making; and (4) make an ethical consideration weighing the short- and long-term impacts of decisions on stakeholders. Our research objective thus is defined as follows: *to develop an evidence-based management approach for creating high-performance higher educational institutions*. Our research approach is twofold: firstly applying only techniques validated in previous research to develop our approach for creating high-performance higher educational institutions, and secondly validating our newly developed approach in practice. To achieve the research objective, we have systematically applied the four-step framework of Rousseau & Barends.

ROUSSEAU & BARENDS' STEP 1: LITERATURE REVIEW

The first step in achieving our research objective consisted of a review of the literature. The purpose of the review was to build a framework with which high-performance higher education institutions can be created. We initially focused on studying strategic management literature because any organisational transition starts with determining the organisation's future strategic position. The strategic management literature gave us the first building block of the framework: setting the strategic position. Then we looked at literature dealing with the consequences of the chosen strategic position for the educational side and the internal organisational side of the higher education institution, including goal-setting in which the strategic position is translated in tangible goals for the organisation. Subsequently we also looked at literature which described how to implement and monitor the various actions coming from goal-setting, to strength the educational and internal organisational aspects of the institution.

Building block 1: Determining the strategic position

During strategy setting the strategic position of the higher educational institution is decided upon and the actual strategy is formulated by the management. Harrison-Walker (2009, p.103) states "The positioning decision is often the crucial strategic decision for a company or a brand because the position can be central to customers' perception and choice decisions." A clear strategic position is important for education institutions because Kotler & Fox (1994, p.229) note that "Many schools and institutions of higher education are fundamentally good and worthy, but they have done little to forge strong, individual identities

for themselves. The institutions should strive to have a clear, positive image and a distinctive memorable identity." A higher educational institution that has chosen a clear and unambiguous strategic position is able to convey to prospective students what it is and what it does, and it can maintain a coherence in its activities according to Lowry & Owens (2001). These authors argue that a strategic position comes from the choices an educational institution makes regarding the 4Ps: product (curriculum offered), price (tuition and funding options), promotion (marketing of the curriculum), and place (the institution itself where the academic programs are delivered).

Aaker & Shansby (1982) describe a process for developing a strategic position, which is applied by Harrison-Walker (2009) on the education sector. In activity 1 the competitors of the organisation are identified, which in the case of an educational institution is anybody that may attract (potential) students' attention as an alternative to the offerings of the institution itself. During activity 2 it is determined how each of the competitors is perceived and evaluated by (potential) students, followed by activity 3 in which the positions currently held by all competing education institutions are identified. In activity 4 the (potential) student base is analysed, as subgroups within the (potential) student population may have different perceptions of the institution and its competitors. Then, in activity 5, the strategic position is decided upon, entailing choosing a limited number of strategic segments (e.g. student groups, academic offerings) with financial potential for the foreseeable future, thereby ensuring the institution can successfully achieve its strategic position and its strategic goals. The chosen strategic position will have consequences for both the educational and the internal organisational sides of the institution. Finally, during activity 6, the organisation's strategic position is monitored over time and adjustments to it are made when necessary.

Building block 2: Strengthening the educational side

The chosen strategic position will directly influence the educational side of the institution, in the sense that the manner in which students will be serviced and the nature of educational programs which will be offered (i.e. the curriculum) have to be looked at and subsequently strengthened. This article is limited to the organisational and managerial aspects of becoming a high-performance higher educational institution. As there is an abundance of literature on the aspects of importance for addressing and strengthening the educational side, and because this field is generally the domain of educational specialists, this article does not go further into this building block.

Building block 3: Setting the goals

During goal-setting an organisation translates its strategic position down to the lower levels in the organisation. An educational institution could use a generic framework to do this, such as the Balanced Scorecard (Umashankar & Dutta, 2007), the EFQM model (Hides et al., 2004) or the Malcolm Baldrige Award model (Ruben et al., 2007), or it could use a framework specifically developed for the educational sector such as the U-map (Vught et al., 2005). A widely used generic framework to cascade strategy throughout the organisation is the Performance Measurement Pyramid (Waal, 2013). This framework translates an organisation's strategy into objectives, critical success factors and key performance indicators for each level in the organisation. The fact that the Performance Measurement Pyramid framework has been internationally applied in many different sectors, including education (Waal, 2013), makes it suitable for the goal-setting building block (see Figure 1).

Figure 1: The Performance Measurement Pyramid (Waal, 2013)

The Performance Measurement Pyramid consists of five building blocks:

1.   *Mission and strategy*. To formulate its mission the institution has to answer the question: "What do we, as an institution, want to accomplish?" To formulate its strategy, the institution has to answer the questions: "How are we, as an institution, going to achieve our mission?" and "How can we accomplish what we want?"

2.   *Strategic objectives, critical success factors and key performance indicators*. In order to make the strategy workable the institution needs to formulate strategic objectives. By clearly defining one or more strategic objectives the institution gets a good idea which activities need to be performed to implement the strategy successfully. Strategic objectives can be measured with strategic critical success factors and key performance indicators, to see whether they are being achieved. These strategic indicators are included in management reports which are used by the senior management team.

3.   *Unit objectives, critical success factors and key performance indicators*. Organisational units can execute the institution's mission and strategy by translating the strategic objectives into specific unit objectives. The results of unit objectives can be measured with unit critical success factors and key performance indicators. These unit indicators are used by unit managers to measure progress. Because organisational units each contribute in their own way to achieving the strategic objectives, they should formulate the unit objectives themselves. It is management's responsibility to make sure that the unit objectives are aligned with the institution-wide strategic objectives. If this is not the case, the unit objectives need to be redefined to secure alignment.

4.   *Key processes, critical success factors and key performance indicators*. Every institution has key processes in place to achieve its objectives. There are two types of key processes. The first one, the direct key processes, directly influence the results of an objective

and can therefore be directly linked to that objective. The second one, the indirect key processes, "make the business tick" and must always be executed properly to ensure the continuity of the institution, regardless of the strategic objectives. The execution of key processes is measured with key process critical success factors and key performance indicators. These operational indicators are used by managers who are directly involved in the execution of the key processes.

5. *Environmental parameters*. If the institution wants to know how its operation is influenced by external factors, it needs to identify indicators that provide information on the business environment and developments affecting the institution. These are usually factors fully or partially outside the control of the institution and which may have a considerable impact on the results of the institution. This is why managers, especially during the goal-setting process for key performance indicators, have to take into account the influence of environmental factors.

Building block 4: Strengthening the internal organisation

The chosen strategic position will also have an organisational impact, in the sense that the internal organisation of the institution has to be strong enough to be able to achieve the strategy and the goals successfully. Therefore the institution needs to be analysed on its current and needed capabilities. The management literature describes a variety of models and frameworks which can provide such a tool, but many of these have not been scientifically validated and are therefore not meeting the requirements of an evidence-based management approach. A framework which has been scientifically validated multiple times is Waal's High Performance Organisation (HPO) Framework (Waal, 2012a+b). In addition, this framework has been applied in the education sector (Waal & Chachage, 2011; Waal & Sultan, 2012) which makes it suitable for inclusion in our development framework for high-performance higher education institutions.

The HPO Framework was developed based on an extensive review of academic and practitioner literature on high organisational performance and a worldwide distributed questionnaire (Waal, 2006 rev. 2010). An HPO is in this framework defined as *"an organisation that achieves financial and non-financial results that are exceedingly better than those of its peer group over a period of time of five years or more, by focusing in a disciplined way on that what really matters to the organisation."* The HPO Framework identifies five factors, and 35 underlying characteristics that make an organisation an HPO (see Appendix 1). The five factors are:

1. *Management Quality*. An HPO has managers that are reliable, trustworthy, integer, committed, enthusiastic, and respectful. These managers have a decisive, action-focused decision-making style. They hold people accountable for their results, and they regularly communicate values and strategy throughout the organisation.

2. *Openness and Action-Orientation*. An HPO promotes an open organisational culture in which management values the opinions of employees and involves them in important organisational processes. Making mistakes is allowed and is regarded as an opportunity to learn. Employees spend a lot of time on dialogue, knowledge exchange and learning to develop new ideas aimed at increasing performance and making the organisation more performance-driven. Managers are personally involved in experimenting, fostering an environment of change in the organisation.

3. *Long-term Orientation*. An HPO grows through partnerships with suppliers and customers and creates long-term commitments with all stakeholders. Vacancies are first filled by high-potential internal candidates, and people are encouraged to become leaders. A high performance organisation creates a safe and secure workplace (physically and mentally), and dismisses employees only as a last resort.

4.   *Continuous Improvement and Renewal*. An HPO compensates for dying strategies by renewing these and making them unique. The organisation is continuously improving, simplifying and aligning its processes and innovating its products and services, to create new sources of competitive advantage to be able to anticipate and respond to market developments. An HPO manages its core competences efficiently, and outsources non- core competences.

5.   *Employee Quality*. An HPO assembles and recruits a diverse and complementary management team and workforce with maximum work flexibility. Employees are trained in resilience skills and are encouraged to develop skills to accomplish extraordinary results. These employees want accountability and want to be held responsible for their performance.

The research underlying the HPO Framework shows a direct and positive relationship between the five HPO factors and competitive performance: the higher the scores on the HPO factors, the better the results of the organisation; and the lower the scores the lower the competitive performance. It also shows that, when measured, the scores on the HPO factors need to be equal. An institution can evaluate its HPO status by means of an HPO questionnaire, to be filled in by managers and employees, with questions pertaining to the 35 characteristics of a high performance organisation, followed by a calculation of the average scores on the HPO factors. These average scores indicate the areas in which the organisation has to take action to improve in order to become a high performance organisation.

Building block 5: Implementing

During implementation the institution collects, categorizes and prioritizes the strategic actions developed in the previous four building blocks. For categorizing purposes the institution first has to identify which HPO factors these actions need to address. After all, strategic actions have to improve at least one and preferably more of these factors. Secondly, the institution has to determine the nature of the strategic actions. For this purpose it could use the classification scheme of Warren (2008), who distinguishes three types of organisational attributes which can be influenced by the action-taking: (1) tangible resources, defined as resources which can be seen and touched, such as customers, products, employees and cash (TR); (2) intangible resources, defined as 'soft' resources which cannot be touched, such as employee morale, trust, customer satisfaction, and knowledge (ITR); and (3) capabilities (or competences), defined as those activities that an organisation is able to do well (C). By combining the HPO factors and Warren's classification scheme for actions a classification matrix can be designed for the formulated strategic actions (Figure 2). In this format the order of the strategic actions is decided by the priority the institution gives each action.

	Management Quality	Openness & Action Orient.	Long-Term Orientation	Continuous Improvement	Workforce Quality
Tangible resources actions	• TR1 • TR2	• TR3		• TR4 • TR5	
Intangible resources actions		• ITR1	• ITR2 • ITR3	• ITR4 • ITR5	• ITR6
Capabilities actions			• C1 • C2	• C3	• C4 • C5

Figure 2: The classification matrix for strategic actions

Building block 6: Monitoring

The strategic actions which have been developed and categorised in the classification matrix have to be monitored on their successful execution. Over the years many tools have been developed to support the performance management of organisations. A frequently used performance monitoring tool in many sectors, as well as in the education sector, is the Balanced Scorecard. We include this tool as monitoring component in our development framework for high-performance higher education institutions (Umayal & Suganthi, 2010; Philbin, 2011a; Al-Zwyalif, 2012; Taylor & Baines, 2012).

Bringing it all together

Figure 3 gives a schematic overview of the building blocks which together give the approach which an educational institution has to follow in order to become a high-performance higher educational institution. Building block 1 *Determining the strategic position* drives activities to be undertaken during the strengthening of the educational side of the higher education institution (building block 2), and also drives activities in building block 3 where the institution's strategic position is translated into goals. Goals are also set by the activities developed in building block 2, as changes in the educational set-up will yield new or adapted goals. Building block 2 *strengthening the educational side* has a dotted line as we do not discuss this building block in detail in this article. The goals the institution wants to achieve, as developed in building block 3, are matched in building block 4 *strengthening the internal organisation* with the current strengths and capabilities of the institution's internal organisation. The complete set of actions identified during building blocks 2, 3 and 4 are in building block 5 *Implementing* collected, prioritized and put in a classification matrix. Finally, during building block 6 *Monitoring* the execution of the actions is monitored and, based on the results of the monitoring, adaptations will take place in the actions in the classification matrix (denoted by the dotted line from building block 6 to building block 5).
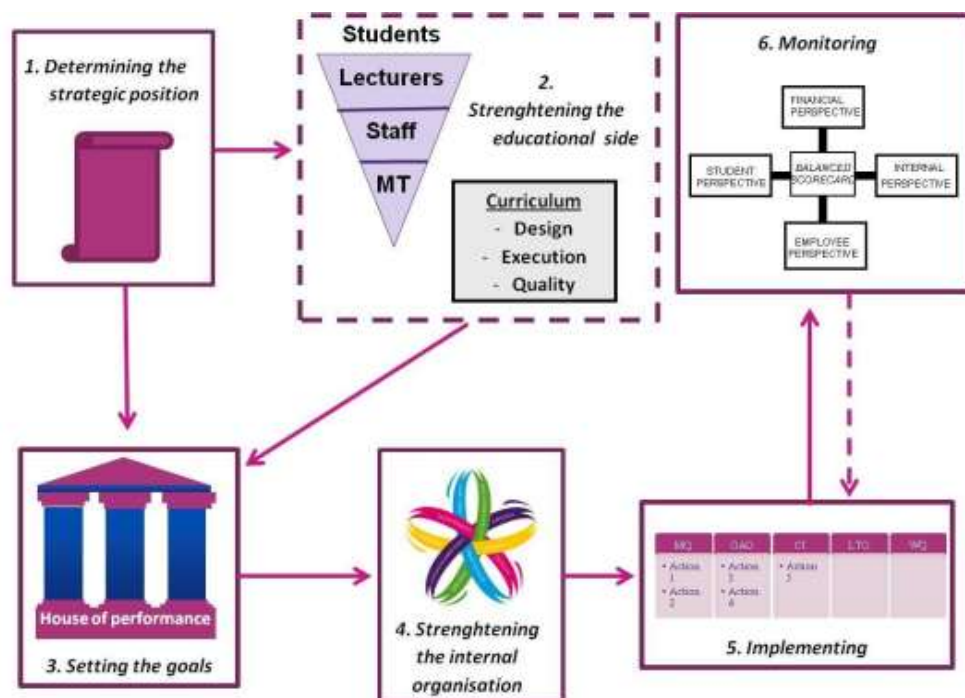
Figure 3: The building blocks of the development framework for high-performance higher educational institutions

ROUSSEAU & BARENDS' STEP 2: SYSTEMATIC TESTING OF THE FRAMEWORK

In this section we first describe the case organisation where the development framework for high-performance higher educational institutions was tested, after which we discuss the research approach for the testing.

Hue University of Agriculture And Forestry

Hue University of Agriculture and Forestry, based in Hue City in Vietnam, is one of the four largest agricultural universities for life sciences in the country. The university provides undergraduate and graduate training programs in agriculture, forestry, fisheries and rural development. Furthermore the university carries out research and transfers technology in its aforementioned specializations in the central region of Vietnam. By the year 2015 the university aims to have 25 bachelor program, 12 MSc programs, and 5 PhD programs. Annual enrolment is approximately 1700 full-time students and 500 to 700 part-time students, 150 MSc students and 10 PhD students. Hue University of Agriculture and Forestry is cooperating on a large scale with development actors in the Vietnamese society, such as ministries, bureaus and institutions for agricultural and rural development, and with labour market representatives. Funding for the variety of research projects undertaken by the university is provided by the state, ministries, provinces, the university itself, and by international organisations and donors.

At the time of the research, the university was still in the process of improving its internal organisation. Management recognized that present monitoring and evaluation systems were no longer adequate to support the university in its ambition to grow. Therefore Hue University of Agriculture and Forestry was setting up formal systems for organisational learning, internal monitoring and evaluation. While drafting a new strategic plan, a key weakness of the university came to the surface: there was inadequate planning of the use of university resources and also inadequate development of human resources. In addition, one of the most important aims of the university producing graduates that could find their way to the labour market was in danger as the investigation and evaluation process of labour market demands was consider inadequate and needed to be improved on short notice. This was all the more relevant since the Vietnamese government had just allowed a substantial number of new universities to be established in the country, thus increasing competition among universities in trying to attract students. This development had already affected the enrolment figures of Hue University negatively.

Research at Hue University

The Maastricht School of Management and Wageningen University in the Netherlands were commissioned for strengthening the institutional and leadership components of Hue University of Agriculture and Forestry in such a way that the university could eventually become a high-performance higher educational institution. One of the authors was directly involved in this sub-project, which was part of a larger project funded by Nuffic, called ACCCU, which dealt with supporting the integration in agricultural curricula of climate change concerns at Universities of Agriculture in Northern Vietnam. The first step in the project consisted of planning a series of three workshops for the leaders of the university and its faculties. These workshops fitted into a larger framework of making the university a more strategy-focused organisation while enhancing its strategic capabilities. The workshops covered three topics: developing a strategy; operationalizing a strategy into activities and key metrics; and implementing and monitoring the strategy. The first workshop, which took place in the fall of 2012, was aimed at creating awareness and knowledge about

the strategic positioning process for the university. This was badly needed as the planning and formulation process at Hue University of Agriculture and Forestry was deeply rooted in traditions and was operational in nature rather than strategic. An important part of this first workshop was drawing up a 'house of performance' (see the next step of Rousseau & Barend's framework). The second workshop, held in March 2013, focused on the implementation of the university's strategic plan, especially the development of the university's key performance indicators. During this workshop the data needed for applying the HPO Framework were also collected. The third workshop was conducted in December 2013 and dealt with the implementation and monitoring activities needed to be executed in order for Hue University of Agriculture and Forestry to become a high-performance higher educational institution.

ROUSSEAU & BARENDS' STEP 3: EVALUATION

In this section the research results are described and discussed, by filling in the building blocks (except building block 2) from the development framework for high-performance higher educational institutions (given in Figure 3) for the case organisation, Hue University of Agriculture and Forestry.

Building block 1: Determining the strategic position

During the first workshop at Hue University of Agriculture and Forestry, the university's strategic team (consisting of the rector and the department managers) and senior-level representatives of several staff departments (15 persons in total) first reviewed the documentation on the current strategy of the university. This review yielded an overview of the university's vision, mission, strategic objectives, strategic activities already carried out by the university, and the completeness of strategy-related documentation. The vision of Hue University of Agriculture and Forestry was described in the *Vision to 2020* positioning paper ('How and where will Hue University of Agriculture and Forestry be in 2020?'). The review showed that the processes of strategy formulation and strategy dissemination to the departments were not very effective. Most 'strategic' plans predominately dealt with operational issues and thus another approach for strategy formulation was needed. This new approach consisted of two activities. First, the university carried out a strengths-weakness-opportunities-threats analysis of the present strategy. And secondly, it made an assessment of its strategic position against other universities and higher educational institutions. These two activities provided the input that participants needed to reach consensus on the new strategic position and strategic themes of the university. The strategic team decided that the university had to transform itself into a leading North Vietnamese university that provided education for young people to prepare them for both national and international jobs in the agricultural field. To achieve this, the university's strategy had to centre around three themes: (1) adaptation to developments in the agricultural labour market, (2) introduction of labour market needs by redesigning the current curricula, and (3) quality assurance and improvement of teaching and knowledge transfer.

Building block 3: Setting the goals

During goal-setting the strategic objectives for each strategic theme were developed on the basis of the strategic choices made during the formulation of the university's strategic position. They were developed using the Performance Measurement Pyramid (Waal, 2013) and subsequently categorized into a so-called House of Performance (Figure 4).
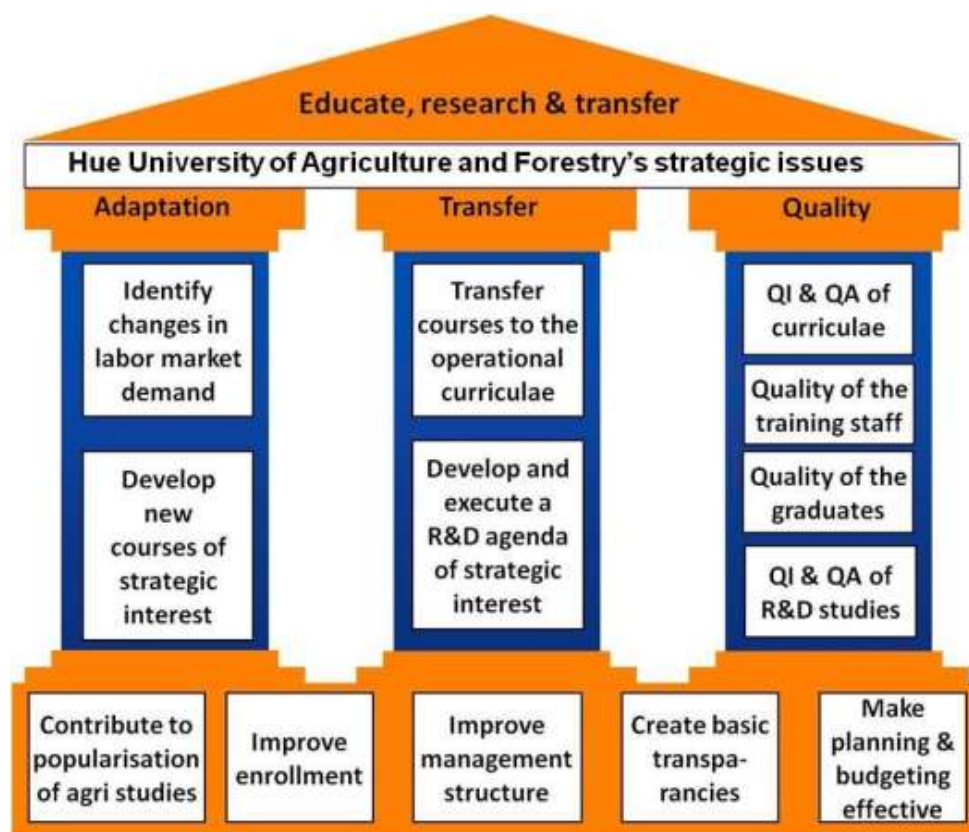
Figure 4: The House of Performance of Hue University of Agriculture and Forestry

The roof of the House of Performance represents the *vision* and *mission* of the university. As mentioned earlier, the vision of Hue University of Agriculture and Forestry was laid down in the *Vision to 2020* positioning paper and during the workshop the participants decided that the content and intention of it were still valid. The mission of the university stated that the university should be a highly qualified education centre for teaching, research and transfer of new technology to the central region of Vietnam. The roof (vision/mission) is supported by a number of pillars. In the case of Hue University of Agriculture and Forestry these pillars are the three strategic themes identified during the formulation of the university's strategic position:

- *Adaptation*. External developments could lead to changing demands of the labour market for agricultural graduates. This could mean that students need other or additional skills and knowledge. Therefore these developments have to be incorporated in new courses.

- *Transfer*. Newly developed courses have to be transferred in the curricula and in programs to develop teachers and gather material, classrooms and promotional material, needed to attract and cater for students interested in these new courses. The external developments can affect the research & development agenda of the university, as new research programs have to be developed to deal with new developments. The output of these programs can then be incorporated in the new courses.

- *Quality*. Quality control of all the strategic actions is necessary to safeguard quality assurance and improvement in teaching and knowledge transfer. The quality of the graduates can also be safeguarded that way.

The foundation of the House of Performance represents the enabling conditions. It relates to the fundamental structures and core capabilities that the university needs to have to

be able to achieve its strategic objectives. The participants agreed that Hue University of Agriculture and Forestry had to excel in three capabilities: (1) contributing to the popularization of agricultural studies as business and technical studies were rapidly increasing in popularity to the detriment of more traditional studies; (2) improving enrolment, since competition of other higher educational institutions was increasing because government was supporting the opening of new universities; (3) effective planning and budgeting, as current processes were complex and thus time-consuming. In regard to structures, the current management structure had to be strengthened as it was considered by the participants to be defective; and 'basic transparencies' (indicators needed for managing and monitoring) had to be made available.

The House of Performance was built in two steps. The first step consisted of a brainstorming session in small groups in order to 'fill' each pillar with strategic objectives; this resulted in the first draft of the university's House of Performance. The second step comprised of a lengthy discussion on each pillar so that the participants could gain a better understanding of what they encompassed. Eventually, the second and final draft of the House of Performance was made.

Building block 4: Strengthening the internal organisation

During the second workshop (March 2013) university's management completed the HPO questionnaire. The average scores for the factors of the high performance organisation were calculated and depicted in a graph (see Figure 5). With an average score of 6.8 Hue University of Agriculture and Forestry did not qualify as a high performance organisation, as this requires an average score of 8.5 (Waal, 2012b). Compared to the average scores of universities worldwide (6.4), provided in the HPO Center database (The HPO Center based in the Netherlands collects all the data of the HPO questionnaires distributed worldwide, to compile a database that can be used for benchmark purposes), Hue University of Agriculture and Forestry scores slightly higher. The graphs for Hue University of Agriculture and Forestry and the universities worldwide are similar in shape which indicates these universities are facing similar issues.

	Management quality	Openness & action orientation	Long-term orientation	Continuous improvement & renewal	Employee quality
HUAF (r=13)	6,6	6,7	7,2	6,8	6,6
Universities worldwide (r=440)	6,4	6,4	6,9	5,9	6,3
HPO	8,5	8,5	8,5	8,5	8,5
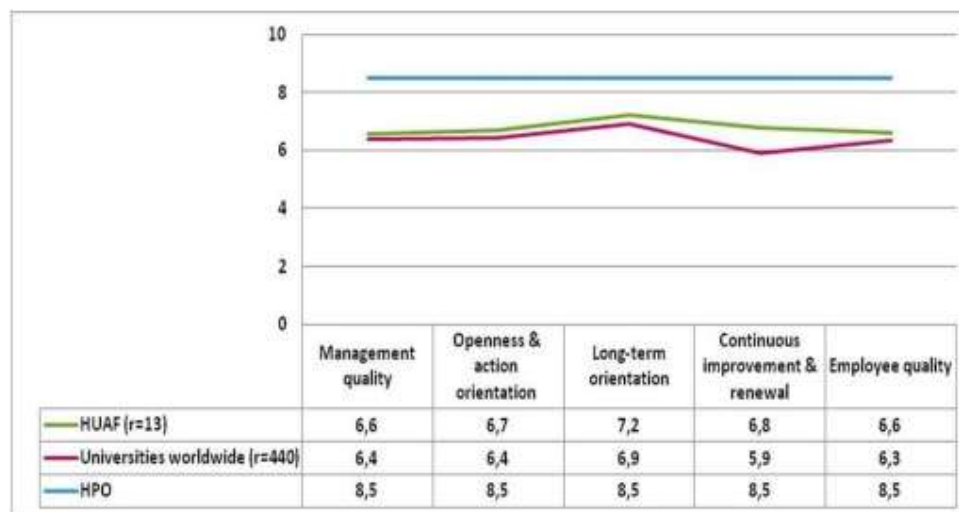
Figure 5: The HPO scores and graphs for Hue University of Agriculture and Forestry and universities worldwide

Analysis of the detailed scores on the HPO characteristics (see Appendix 1) revealed that Hue University of Agriculture and Forestry had to focus on the following issues, in order

to become a high-performance higher educational institution:

Strengthening the improvement process of the processes (HPO characteristics 2, 3, 4). Although there were enough ideas for improving the processes of Hue University of Agriculture and Forestry, the university was not very effective in this area as processes were insufficiently simplified and only just adequately aligned. The process of improving the university's processes therefore needed to be further developed. A complication in achieving this was the complexity and lengthiness of the decision procedure for adapting and improving existing processes and procedures. These needed to be simplified first.

Improving the performance management process (HPO characteristics 5, 6, 9). The respondents felt that only a minimum of the university's critical success factors and key performance indicators were identified, and that the reports providing information on these were insufficiently distributed across the university. This required further study of the university's performance management process, to be able to improve both content and distribution of the university's performance management information.

Increasing the effectiveness of management (HPO characteristics 18, 19, 22). Managers at Hue University of Agriculture and Forestry were perceived as slow decision makers and slow action takers, and the pace of change of the university was considered too slow and management not as effective as it should be. Management therefore had to look at the obstacles that slowed down the speed of their decision-making and action-taking. The local situation played an important role in this: because of the party system in Vietnam the universities were obliged to follow complex approval procedures for their major decisions, including managerial appointments.

Increasing the firmness of management (HPO characteristics 25, 26). Managers at Hue University of Agriculture and Forestry were also seen as too lenient towards staff who did not perform up to standard. They were generally not holding people accountable for their results and not dealing with non-performers in a quick and decisive way. Thus, management had to look for ways to strengthen its attitude toward holding people (and themselves) accountable in a professional way, and ways to deal with people who were not performing in the desired way while at the same time taking the cultural contexts of Vietnam and the university into consideration.

Increasing the quality of the staff (HPO characteristics 28, 29). Managers at Hue University of Agriculture and Forestry and the Human Resource department had to look for methods for university staff to develop themselves in a way that would prepare them for the transition to a high-performance higher educational institution.

Strengthening the performance-drive of the university (HPO characteristics 12, 14, 20, 27). Hue University of Agriculture and Forestry had already started a process to increase its organisational and managerial capabilities and to eventually become a high-performance higher educational institution. However, the results of the HPO Questionnaire showed staff in general lacked ambition. University management therefore had to first address this issue with its staff and discuss the desirability of becoming a high-performance higher educational institution. A complication was the fact that a majority of managers thought the quality of the lecturers needed to be improved drastically before the university was to make any progress on whatever topic. However, this could take years, creating delays in essential improvements.

University management formulated one or more actions for each of the issues, and after that discussed and determined the priorities of these actions. Subsequently they transferred the prioritized actions to the classification matrix for strategic actions (as given in Figure 2).

Building block 5: Implementing

In the development framework for high-performance higher educational institutions

the implementation phase is not so much dealing with the execution of the strategy itself but rather with the readiness of Hue University of Agriculture and Forestry to execute its strategy. In this regard, the main issues were to develop and plan the relevant activities for realizing the strategic objectives, and install a management dashboard that would enable monitoring the execution of the strategic activities. The implementation phase at Hue University of Agriculture and Forestry was estimated to take about one year. This might be considered as lengthy, however decisions made by university management in the Vietnamese context generally required quite some time, and in addition the development of a dashboard with critical success factors and key performance indicators was a relatively unknown phenomenon in the Vietnamese educational sector. On top of this, Hue University of Agriculture and Forestry was participating in a large project aimed at integrating climate change studies in its agricultural curricula. As a consequence, dealing with the managerial issues described above became just one of the many ongoing projects.

During the second workshop the Implementation phase was started, with two goals to establish: (1) how to operationalize strategic objectives into short-term activities; and (2) how to measure progress on the execution of strategic and operational objectives. The first goal had to result in the planning of operational activities, i.e. a filled-in classification matrix for strategic actions. The second goal had to result in a dashboard showing the critical success factors and key performance indicators which would enable university management to monitor progress against the strategic objectives (see Figure 4).
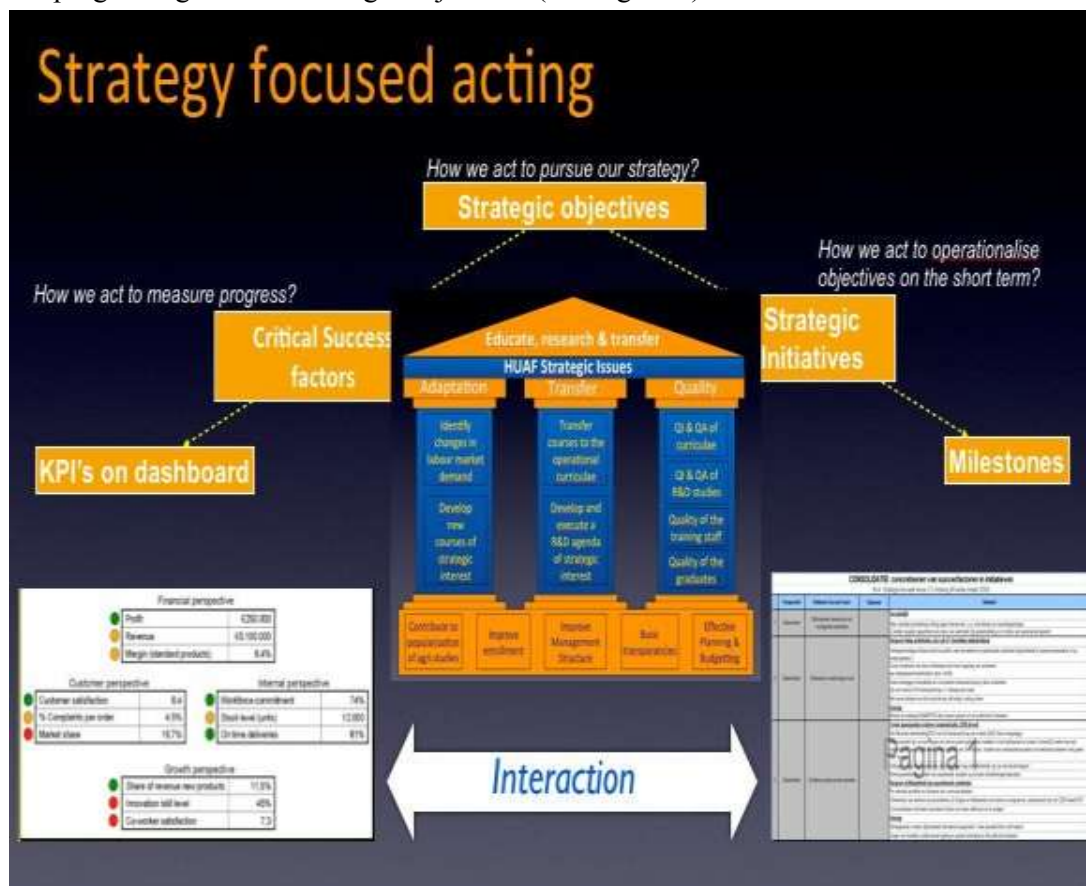
Figure 4: The goals set during the implementing building block

Building block 6: Monitoring

At the time of writing this article this building block was not yet addressed, as the

implementation was still in progress. Initially the results of this building block were to be discussed during a workshop planned in December 2013 but because of several external developments this workshop was postponed. Thus more information will become available in time but could not be incorporated in this article yet.

ROUSSEAU & BARENDS' STEP 4: ETHICAL CONSIDERATIONS

As Hue University of Agriculture and Forestry is still engaged in the implementing building block and has not yet started addressing the monitoring building block, it is too early to tell which ethical questions will have to be addressed. Possible questions for reflection however are: Does faculty need further study or acquire a PhD in order to function in the high performance organisation? Would faculty get a higher salary if they engage in further study? Does faculty need a new lecturing methodology and new ways of testing and examination? How often do programs and the curriculum need updating? Should there be a higher teacher/student ratio? How can feedback from the labour market and the students be organized efficiently and processed effectively? It is also too early to state with certainty that the development framework for high-performance higher educational institutions, described in this article, is applicable for creating high-performance higher educational institutions in practice. However, up to now the workshops participants who have been using the framework have responded favourably and found it a useful tool for in setting the strategy, evaluating the strength of Hue University of Agriculture and Forestry's organisation, and developing critical success factors and key performance indicators. They have unequivocally stated that they will continue to use the framework in the third workshop. The initial signals about the usefulness of the development framework for high-performance higher educational institutions appear to be positive.

The major limitation of the study is that it is still in progress and that therefore the research results are preliminary. A second limitation is that the development framework for high-performance higher educational institutions has only been tested at a single university in a specific country context. It should also be tested at other universities, different countries, and at other types of higher educational institutions to establish its validity. The last limitation is that longitudinal research has not taken place. In this type of research, the actual financial and non-financial results of using the development framework for high-performance higher educational institutions can be evaluated, and whether these results are lasting can be determined.

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APPENDIX 1

The Table in this Appendix summarizes the five HPO factors (column 1) and the 35 underlying characteristics (columns 2 and 3), accompanied with the scores for the higher education institutions in the database of the HPO Center (column 4).

HPO	No.	HPO characteristic	Score
Continuous Improvement & Renewal	1	Our organization has adopted a strategy that sets it clearly apart from other organizations.	7.8
Continuous Improvement & Renewal	2	In our organization processes are continuously improved.	7.0
Continuous Improvement & Renewal	3	In our organization processes are continuously simplified.	6.0
Continuous Improvement & Renewal	4	In our organization processes are continuously aligned.	6.5
Continuous Improvement & Renewal	5	In our organization everything that matters to the organization's performance is explicitly reported.	6.5
Continuous Improvement & Renewal	6	In our organization both financial and non-financial information is reported to organizational members.	6.1
Continuous Improvement & Renewal	7	Our organization continuously innovates its core competencies.	7.2
Continuous Improvement & Renewal	8	Our organization continuously innovates its products, processes and services.	6.9
Openness & Action Orientation	9	The management of our organization frequently engages in a dialogue with employees.	6.5
Openness & Action Orientation	10	Organizational members spend much time on communication, knowledge exchange and learning.	7.0
Openness & Action Orientation	11	Organizational members are always involved in important processes.	7.3
Openness & Action Orientation	12	The management of our organization allows making mistakes.	5.9
Openness & Action Orientation	13	The management of our organization welcomes change.	6.8
Openness & Action Orientation	14	Our organization is performance driven.	6.5
Management Quality	15	The management of our organization is trusted by organizational members.	7.0
Management Quality	16	The management of our organization has integrity.	6.8
Management Quality	17	The management of our organization is a role model for organizational members.	6.8
Management Quality	18	The management of our organization applies fast decision making.	5.3
Management Quality	19	The management of our organization applies fast action taking.	5.6
Management Quality	20	The management of our organization coaches organizational members to achieve better results.	6.5
Management Quality	21	The management of our organization focuses on achieving results.	7.1

Management Quality	22	The management of our organization is very effective.	6.5
Management Quality	23	The management of our organization applies strong leadership.	7.5
Management Quality	24	The management of our organization is confident.	7.3
Management Quality	25	The management of our organization is decisive with regard to non-performers.	5.9
Employee Quality	26	The management of our organization always holds organizational members responsible for their results.	6.8
Employee Quality	27	The management of our organization inspires organizational members to accomplish extraordinary results.	6.2
Employee Quality	28	Organizational members are trained to be resilient and flexible.	6.2
Employee Quality	29	Our organization has a diverse and complementary workforce.	6.8
Long-Term Orientation	30	Our organization grows through partnerships with suppliers and/or customers.	7.1
Long-Term Orientation	31	Our organization maintains good and long-term relationships with all stakeholders.	7.3
Long-Term Orientation	32	Our organization is aimed at servicing the customers as best as possible.	6.9
Long-Term Orientation	33	The management of our organization has been with the company for a long time.	7.0
Long-Term Orientation	34	New management is promoted from within the organization.	7.5
Long-Term Orientation	35	Our organization is a secure workplace for organizational members.	7.3

EMOTIONAL INTELLIGENCE: THE LINK TO SUCCESS AND FAILURE OF LEADERSHIP

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ABSTRACT

Leadership training is a multi-billion dollar business in the United States. Despite the huge investment by organizations, an increasing number of studies have been showing that leaders have not been performing well in their leadership capacities. The role of IQ has been questioned and the demand for answers has led to the proliferation of studies on emotional intelligence (EI). Recently, EI is being identified in the Leadership and Organizational Behavior literature as accounting for the success and failure of leadership. Even though the debate is still ongoing, there are neurobiological explanations attesting that emotions are largely responsible for decisions made during complex and challenging times, similar to what leaders face. Some leadership training programs are now being tailored with these neurobiological explanations in mind. Despite resounding results with successful leadership development programs that incorporate the principles of emotional intelligence in their training, skepticism still abounds. Therefore this article looks at the neurobiological contributions in emotional intelligence training programs and proposes a model explaining these interactions.

Keywords: Emotional Intelligence, Leadership, success, training

INTRODUCTION

"*Everyone knows that high IQ is no guarantee of success, happiness, or virtue, but until **Emotional Intelligence**, we could only guess why*"

- Daniel Goleman

Emotional intelligence (EI) was introduced in the 1990s and has been gaining a lot of attention in the Psychological, Human Resource, Management and Consultancy fields. The rise in popularity has been attributed to the role of emotional intelligence in success and failure of leadership rather than experience, knowledge and competency (Williams, 2013). If so, then what is Emotional intelligence? Research refers to EI as the capacity for recognizing our own feelings and those of others, as well as the ability to effectively manage our feelings as we interact with others. At base, there are variations in definitions and components; emotional intelligence is usually assessed on four dimensions: Self-awareness, Self-management, Social awareness and Relationship management.

EI is confirmed as a key component for effective leadership and leaders with high EI competencies are able to identify, assess, predict as well as take control of their own emotions as well as that of their team members (Goleman 1995, Mayer & Salovey, 1997, Davies, Stankov, & Roberts, 1998). What happens then to leaders who are clueless on these ideologies? Do these leaders last long in their leadership positions?

Therefore, this article focuses on clarifying the concept of Emotional Intelligence and synthesizing the research to provide a review on the exchange of ideas pertaining to the link between EI and leadership success or failure, within the scope and context of organizations.

EMOTIONAL INTELLIGENCE

Emotional intelligence encompasses abilities such as being able to motivate one self and persist in the face of frustrations; to control impulse and delay gratification; to regulate one's moods and keep distress from swamping the ability to think; to empathize and to hope (Goleman, 1995, p. xii). Prior to the introduction of EI, the traditional concept of "intelligence quotient" (IQ) as the reason behind our cognitive ability prevailed. Increasingly, however, scholars assert that emotions do facilitate rational thinking and decision making. For example, Haidt (2001) questioned rationalist models and proposed that emotions and intuition drive judgment and reasoning. In addition, Hanoch (2002) agreed that emotion and reason are interconnected. The author suggested that emotions work together with rational thinking and thereby function as an additional source of bounded rationality.

EI has also been defined as "the capacity to reason about emotions, and of emotions to enhance thinking. This includes the abilities to accurately perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" (Mayer, Salovey & Caruso, 2004, p.197). Therefore, EI is arguably a type of intellect that requires insight and cleverness.

Even though attention has been garnered towards EI as an alternative or even replacement of IQ, EI is not without criticism. The major criticisms leveled against EI are that the definition of EI is too broad and of little use (Locke, 2005, Hedlund & Sternberg, 2000). In addition, assessment of the concept is psychometrically weak (Davies, Stankov & Roberts, 1998). Locke (2005) was most forceful in calling EI a misinterpretation of what is constructed as intelligence. In effect, Locke (2005) asserted that EI is not another form of intelligence but rather the ability to grasp abstractions, only that in this case it is specific to emotions.

Furthermore, Locke called for relabeling of the concept because he wanted EI to be classified as a skill. The critics argue that EI has not undergone intense scrutiny in peer reviewed journals (Murphy, 2006). Does all this criticism deter proponents of EI and propel them to cave in? If anything, these disparagements seem to have bolstered interest and research both in academia and in non-academic locales. An area of study that has consistently been at the center of this impasse is Leadership Development. Before exploring leadership development, it is only fitting to clarify the ideas to which the advocates of EI adhere.

EMOTIONAL INTELLIGENCE MODELS

Lately, EI is defined into two broad categories ability based models and expansive models (Murphy, 2006). Definitions with the ability connotations are usually found in the social science research while definitions with a wider appeal are usually found in the marketing or popular literature (Sadri, 2012). The commonality with ability models is that EI is made up of four abilities: the ability to perceive emotion, the ability to use emotions to influence thought processes, the ability to understand emotions and the ability to manage emotion (Mayer, Salovey, & Caruso, 2004). Chief proponents of these ability approaches more often than not develop scales to measure, train and improve people's emotional intelligence. An example is the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer, Salovey, & Caruso, (2002).

On the other hand, the popular model that seems to be appealing to a wide range of populations (except some social science researchers) has been championed by Daniel Goleman (1995) who used his journalistic prowess to his advantage. This model (oftentimes referred to as the mixed model) is made up of five dimensions instead of four: 1) Self-

Awareness this involves knowing one's internal states, preferences, resources, and intuitions. 2) Self-Regulation that is managing one's internal states, impulses, and resources. 3) Motivation this has to do with emotional tendencies that guide or facilitate reaching goals. 4) Empathy- awareness of others' feelings, needs, and concerns. 5) Social Skills this involves adeptness at inducing desirable responses in others (Goleman, 1998).

Proponents of mixed models view EI as a combination of abilities, personality-like traits, motivation and skills (Byrne, Dominick, Smither, & Reilly, 2007). As regards the mixed model, two instruments are used to measure the competencies. The first is the Emotional Competence Inventory (ECI) (Sala, 2002) and the second is the Emotional and Social Competency Inventory (ESCI) (Boyatzis, 2007; 2011).

LEADERSHIP DEVELOPMENT

Leadership remains one of the most researched and discussed topics in Organizational sciences. However, while theories have been proposed, and scales and measurements have been developed to measure the construct in diverse contexts, leadership remains an enigma (Prince, 2005). Researchers, for example, Meindl (1990) suggested that the focus on leadership is just an illusion; and that leadership might be a form of creation in the minds of the led or followers than it is actually a trait of individuals occupying a certain position. Not only that, some researchers have even argued for and supported the motion that leaders do not need EI (Antonakis, Ashkanasy, & Dasborough, 2009).

Nevertheless, leadership development remains an organizational need and leadership training continues to be a multi-billion dollar industry. US companies, for example, spend about $14 billion annually to develop their leaders (Gurdjian, Halbeisen, & Lane, 2014).

One does not need to go far to realize the importance of leadership, whether in the realm of politics on US Capitol Hill or catalogs of Universities and Colleges offering courses on leadership. Hence, what is leadership development? Even though leader development is often used interchangeably with leadership development, the Center for Creative Leadership (CCL) provides a succinct distinction between the two. While leader development focuses on "expansion of a person's capacity to be effective in leadership roles and processes" (Van Velsor, McCauley, and Ruderman. (Eds), 2010, p.2) leadership development refers to "the expansion of a collective's capacity to produce direction, alignment, and commitment." (Van Velsor, McCauley, and Ruderman. (Eds), 2010, p.20). Specifically, when the focus is on an individual, it is better to use the term "*leader development.*" If the development involves more than just one person, such as teams, organizations, or nations, leadership development would be appropriate. Moreover, it is necessary to point out that the development of an individual can influence the development of a team or an organization and vice versa.

Leadership development has moved past the debate as to whether leaders are born or made! McCall (1998) in his book High Flyers: developing the next generation of leaders, concur that leaders are born *and* made (but mostly made). Thus, leader development and its variant leadership development are allotted a sizeable 21 percent of training budgets in the US (Bersin, 2008). Organizations are spending considerable amounts of money in an effort to develop leaders. The result is a proliferation of leadership development programs, some promising huge returns on investment.

EI and Leadership Failures

There are unanswered questions pertaining to leaders who are intelligent and yet failed woefully to the extent that some individuals question the role of intelligence. An emphasis on high IQ alone is insufficient when recruiting for leadership positions. According to Dulewicz and Higgs (2000), the combination of intellectual intelligence and emotional

intelligence is a more powerful predictor of "success." Together, IQ and EI help determine successful performance outcomes. CEOs are constantly being moved from their positions at the high rate of 7.6 every business day (Challenger, Gray & Christmas, 2006). In addition, more than 28% of these leaders had only been in that position for less than three years (Challenger, Gray & Christmas, 2006). In all probability, these leaders were highly intelligent intellectually. Can it be that their emotional intelligence was lacking?

One case that is often mentioned is Jeffrey Skilling of Enron. Having taken over from the founder of Enron, Kenneth Lay; this leader was on record as having transformed Enron into the largest wholesale producer of Gas and Electricity with $27 billion traded in just one quarter (Skilling J.K., 2014). The end of Enron, however, was bankruptcy, fraud and criminality.

British Petroleum's (BP) Deepwater Horizon oil spill leadership issues are also well documented. BP's reputation as well as CEO, Tony Hayward's public opinion turned south, not only with the disaster itself but also the handling of the disaster connecting (or failing to connect) to people's emotions. Tony Hayward is noted to have made the comment '*I'd like my life back.*' While oil was still gushing out, he was reportedly watching his yacht race (Lyons, 2011). Even though BP compensated with $42.2 billion, the company's image took a negative hit, and the CEO paid the ultimate price for failing to make the valuable connection to prevailing public emotions.

The leadership management of Hurricane Katrina is another example of a failed leadership case that is often cited in the discussion of emotional intelligence. While some political leaders pinpoint some specific leaders for not acting when people are stranded on roof tops, some social commentators simply label it a national leadership failure.

These examples show leaders' failure to identify, assess and control their own emotions without having these emotions engulf and entrap them, as well as leaders' inability to understand their audience's emotions and to effectively manage relationships. When making decisions in speech and/or actions, leaders should consider the consequences of their decisions, including the emotional impact these decisions will have on the involved parties.

EI and Leadership Successes

Conversely, the handling of the Apollo 13 mission is a classic leadership example that is often talked about or labelled as a *successful failure*. Not only was Eugene Francis Kranz (Flight Director) able to make decisions in aborting the mission by saying the famous quote "Failure is not an option", but he was also able to connect with his crew as his first priority to land the astronauts on earth safely irrespective of the mission's original intent (Kranz, 2000).

Another case in point is the world's largest cargo airline FedEx. FedEx took skepticism off the picture and overhauled their worldwide leadership program with one they labelled as 'people-first leadership'. In this, they incorporated emotional intelligence assessment and development models into a six months program for their managers. This resulted in an 8-11 % increase in core leadership areas. This program also accounted for a 72% increase in decision making and a 60% increase in quality of life of their managers (Freedman, 2014).

AT&T, one of the world's largest provider of communication services noted that high EQ leaders in their management (line supervisors and senior executives) accounted for 20% more in their productivity than leaders who are low in EQ. In addition, EQ was the explanatory variable in explaining 60% of job performance in their organization (Bradberry, 2002).

A successful case often mentioned in leadership circles is Jack Welch of General Electric, who did not only spend about 50% of his time on development of people, but knew more than 1000 of his employees and their roles. Yes, Mr. Welch, is also described by many

as a narcissist. Narcissists are often accused of displaying stereotypically negative traits and behaviors such as arrogance, entitlement, and an abrasive interpersonal style (Grijalva & Harms, 2014). These descriptions connote emotional isolation and a lack of empathy. However, Maccoby (2000) asserts that Welch is a productive narcissist, and explains that there is a kind of emotional intelligence associated with narcissists (although it is more street smarts than empathy), as these leaders are acutely aware of whether or not people are with them wholeheartedly. Productive narcissists, like Jack Welch, are gifted and creative strategists, but they are also charmers (Maccoby, 2000). These cases reflect the importance of not only recognizing human emotions in making financial decisions but also the value of identifying with the emotions of others.

THE NEUROBIOLOGY BEHIND EI'S LINK TO SUCCESS OR FAILURE OF LEADERSHIP

In order to verify the role of the brain in regulating our emotions, there are a few studies that set out to explore and explain the biological dimensions underpinning emotional intelligence. Are there drives, neuron networks that are responsible for our emotions? Harvard Professors (Lawrence & Nohira, 2002) concur. Neuroscientists have observed that the structure of the brain allows for a competitive relationship between a rational component and an emotional component of the brain. Due to our genetic makeup, this emotion component of the brain, referred to as the amygdala, usually dominates over the neocortex, the rational component.

However, in difficult situations where we are challenged, as leaders face in decision making, the amygdala tends to prevent the decision maker from cognitively evaluating the situation in order to make an "intelligent" choice at the end (Holland & Gallagher, 1990). In other words, our emotions are set loose at this point and the decision maker is unable to control his or her own emotions. Goleman (1995) labels this as being emotionally less intelligent. Le Doux (2000) also conducted research on the amygdala, (shaped like an almond) and concluded that, not only is the amygdala the control room of all emotions, but it can trigger emotions without the cognitive processing center of the brain noticing or regulating it.

With studies in animals, Le Doux (2000) explained that in challenging moments, the amygdala reacts quicker than the cortex. This quick reaction is what triggers fear emotions with the sole purpose of protecting the decision maker from danger thus settling for less retributive options. In a broader context, when our brains receive information through the thalamus, the thalamus does the interpretation of the nature of the message and then forwards the message to the appropriate regions of the brain for subsequent action. In normal modes, the cortex receives these messages for rational and logical decisions to be made. However, as Le Doux (2000) explains, in cases of emergencies, the thalamus by default thinks of subsequent danger and thus bypasses the cortex and relays this sensitive information to the amygdala for quick response.

Researchers know that there are instances of emergencies that are not always dangerous or result in fatalities. The handling of all emergencies as potential danger deserves more explanation! So, while the amygdala wastes no time waiting for rational response from the slow cortex, the autonomous amygdala sets out the fear alarm in the decision maker. Peptides and hormones are thus released into the blood for the decision maker to act fast in order to avoid the impending 'danger' (Day, Therrien, & Carrol, 2005). The end result is that the decision maker ends up making emotionally less intelligent decisions. The inability of leaders who are inundated with decisions on a daily basis (some with overinflated perceptions

of consequences) to recognize and more importantly to intentionally regulate their emotions and that of others, leads to leadership failures.

CONNECTING EI, LEADER DEVELOPMENT AND SUCCESS AND FAILURE OF LEADERS

The goal of leadership development programs with an emphasis on emotional intelligence is to design programs to train leaders to recognize, regulate or manage their emotions and actions when faced with decision making. How does this happen? Brain Scientist, Antonio Damasio (1994) asserted that leaders who are able to sense their emotions early and then activate the cortex become successful in regulating and inculcating positive emotions to dilute the negative emotions of themselves and others. The ability to manage and efficiently balance the interplay of the amygdala and the cortex varies from individual to individual. This constitutes the measure of emotional intelligence the ability to train the brain to recognize that one's emotions have been hijacked by the amygdala (Goleman, 1995).

These programs use self-report inventories and peer appraisals to identify the disposition of an individual's rational and emotional balance. Kunnanatt (2004) compiled a list of processes involved in these biologically oriented EI development programs. These include emotional mapping, emotional diagnosis, emotional authentication, emotional navigation, empathy building, and building social skills. Emotional mapping activities enable individuals to understand, separate and name their emotions, and to understand their causes and effects, especially how emotions trigger thoughts and result in actions. Emotional diagnosis activities take participants through the neural pathways and how they impede or promote their relationship with others. Strategies in the form of beliefs and other support systems are then identified to counteract the emotions. Emotional authentication activities are introduced for participants to assess the costs and benefits of their emotions and reactions in the past and present so that participants can check, control, and even limit or delay gratifying the emotion. Emotional navigation exercises on the other hand, offer participants opportunities to experience concealed emotions. For instance instead of entertaining anger emotions, emotional navigation exercises teach participants to experience the excitement instead of anger emotions. This is to slowly but consciously slow down the amygdala in order to give chance to the cortex. Mayer et al., (2002) indicated that navigating through your emotions in this manner leads to emotionally intelligent and socially productive behaviors. Also, building social skills (for example, developing empathy) empowers participants to understand and experience the emotions of others. Through empathy workshops, the participants become aware of their strengths and weaknesses and are led through the process of building and maintaining relationships with others. These enable leaders to not only delay making hasty decisions in the heat of the moment but to consciously and intentionally control the process by becoming aware of the internal dynamics playing out unknown to them.
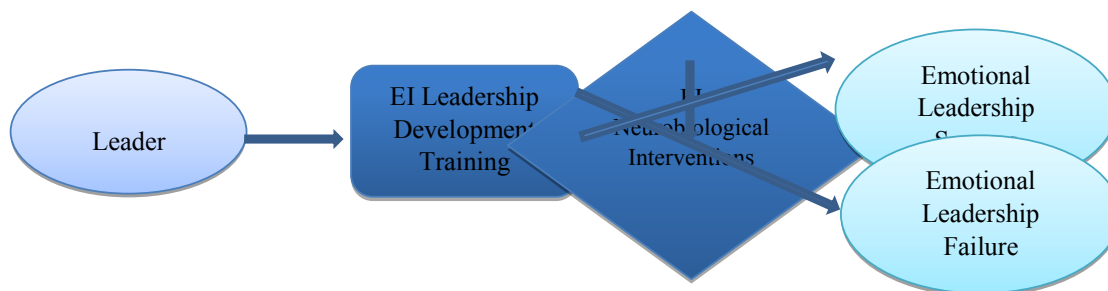
Figure 1. Conceptual model of the interaction between leadership and EI

The diagram represents the conceptual model of the interaction between leadership and EI. The model hypothesis that with leader development aspects such as training the success or failure of the leader will be moderated by neurobiological interventions.

DISCUSSION AND FUTURE INQUIRY

There is support for the hypothesis that leaders who are trained or developed to increase their EI are more successful or make more of a difference than those with low or no emotional intelligence (George, J.M., 2000; Prati, L. M., Douglas, C , Eerris, G.R., Ammeter, A. P, & Buckley, M. R., 2003). Further studies should be conducted in different cultural domains to determine if the cultural context matters. In other words, does culture moderate the relationship between emotional intelligence and the success or failure of leaders? If it *does*, findings should be used to aid in the design and development of leadership development programs. National culture as well as organizational culture should be considered. Future inquiry should also determine whether the benefits of emotional intelligence for leaders are industry-specific or even job specific. Are there contexts where leaders can be successful without EI?

Emotional intelligence does not only influence leadership success. Employees who are aware of their emotions and have the ability to control them effectively become successful in life as well as at their workplace (Goleman, 1995). Also, EI is correlated with performance and other organizational outcomes (Boyatzis, 2001). Fortune 400 insurance companies, for example, have emotional intelligence scores that correlated highly with percent merit increases and company ranks, as well as higher peer ratings and supervisor ratings (Lopez, Cote, Grewal, Salovey, Kadis & Gall, 2004). In terms of team performance, Lopes, Cote, and Salovey (2004) showed that students who scored higher on Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) were also given higher rates on initiating ideas and goals for the group. The study does control for personality traits and demographics, but the relationship between emotional intelligence and proposing of ideas (and in effect inspiring a shared vision) was significant. The study indicated that emotionally intelligent individuals outperform their colleagues, and it is generally acknowledged that effective leaders are proactive visionaries. These findings have implications for the selection process of high potential employees as candidates for leadership development programs.

Unfortunately, leadership development does not always lead to an increase in EI. Muyia and Kacirek (2009) compared the EI pre and post scores of leaders who participated in an Emerging Leaders Training Program (ELTP). This study used the Bar-On (1997) EQ-I testing instrument to measure EI. The results showed no significant differences in the EI scores prior to participating and after completing the ELTP. This is one of the studies that falls in line with the argument that the media and popular press have overestimated the influence of emotional intelligence. However, it has been noted that training programs, especially on EI, will take time, since learning to manage one's emotions can be a life-long endeavor (Muyia & Kacirek, 2009). Studies that are more longitudinal in nature should be conducted. It may be that participants need to devote more time to leadership development programs that emphasize EI to reap the full benefits. Muyia and Kacirek (2009) do admit, however, that learning about emotions will enable individuals to pay better attention to the emotional dynamics either within oneself or in relation to others or both. This accomplishment, in itself, would be a signal of growth and leadership development.

CONCLUSION

The information and studies presented in this paper show that EI does contribute to success and failure of leadership although it is not the sole contributing factor. Even though there are some variations in the conceptualization of EI there are also major commonalities, and leaders and organizations that integrate EI concepts in their leadership development programs can experience significant results. Neurobiological studies have provided further explanations concerning emotions, and this added enlightenment can be drawn upon as leadership programs are designed and developed. These training programs should incorporate elements of the neurobiological explanations so that they can be better tailored to serve the developmental needs of leaders as they strive to be more emotionally intelligent.

Leaders in decision making roles are constantly being faced with situations where the ability to recognize, understand and manage emotions in themselves and others, and to empathize and connect with individuals and teams is worthwhile, if not necessary. For a long time, IQ has been a predominant explanatory variable for successful leadership in organizations. EQ, a competing and convincing concept has offered an alternative to understanding our emotions and in addition, leadership success and failure. As a construct, IQ is tried and tested. Antonakis (2004) acknowledges that it has been validated and proven reliable, and that studies show that it is related to leadership effectiveness. However, instead of prematurely dismissing EQ, researchers and the community of scholars should conduct further studies. Zaccaro, Kemp, and Bader (2004) noted that additional research is necessary to identify the unique contributions of emotional intelligence beyond other conceptually similar constructs.

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TEACHER QUALITIES VALUED BY STUDENTS: A PILOT VALIDATION OF THE TEACHER QUALITIES (T-Q) INSTRUMENT

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ABSTRACT

This study characterizes the psychometric properties of an instrument, named T-Q, developed to measure perceptions of teacher qualities most valued by students in the university setting. The T-Q instrument was administered to 458 economics students at two universities. The study demonstrated the reliability and construct validity of T-Q. The validated instrument will be of interest to faculty who wish to better understand students' perspectives regarding ideal qualities of faculty. Use of the instrument may help to more broadly inform faculty and educational researchers regarding approaches to instruction and pedagogy. Use of the instrument may also provide a means for improving student evaluation of teaching instruments (SETS) and establishing a context for the interpretation of SETS data.

INTRODUCTION & BACKGROUND

Introduction

This study characterizes the psychometric properties of an instrument, named T-Q, developed to measure perceptions of teacher qualities most valued by students in the university setting. Descriptions of reliability and construct validity of the T-Q instrument serve as indicators of the instrument's quality. The validation results will be of interest to faculty who wish to better understand students' perspectives regarding ideal qualities of faculty. Use of the instrument may help to more broadly inform faculty regarding their approaches to instruction and pedagogy.

Teacher Evaluations

Many post-secondary institutions encourage faculty to strive for continuous improvement regarding their quality of teaching. Some universities fund a Center for Teaching and Learning or similar entity that provides workshops and training opportunities for faculty to improve their instructional skills. As universities are rewarding performance in terms of promotion, tenure, awards and bonuses, the measurement of the quality of teaching activities becomes very important (Gray & Bergmann, 2003; Wines & Lau, 2006). However, it is difficult to fairly assess the quality of teaching skills. A common instrument utilized in higher education to assess quality teaching is the student evaluation of teaching. At the end of each semester, in higher education classrooms across the United States, students routinely critique the effectiveness of each course instructor. "Student evaluations are the most commonly used method of assessing an instructor's effectiveness in the classroom," (University of Nebraska-Lincoln, Center for Teaching and Learning, 2015, p.1). Student evaluation of teaching is a keenly debated issue (Langbein, 2008). It is one of the most criticized (Ellis, Burke, Lomire & McCormack, 2003; Wright, 2006) and yet the most prevalent (Richardson, 2005) practices in higher education.

The majority of faculty members are evaluated by their peers regarding their scholarship and service contributions. When it comes to teaching, however, "Faculty members are usually evaluated anonymously by their students" (Wines and Lau, 2006, p. 169). Teacher evaluation systems are designed to measure teaching quality. Ideally, evaluations should serve to help teachers identify strengths and areas for development, as they work to improve their practice. Student evaluations do not focus on the teacher's content expertise; rather, they serve to provide input to the faculty member from the students regarding their view of instructional effectiveness. Student evaluations indicate how students feel about specific teaching strategies; however, high ratings are not guaranteed indicators of effective instruction and low ratings, likewise, are not always indicators of ineffective instructional strategies.

A common objection to student ratings is that they are not valid or reliable measures of teaching effectiveness; that students are not able to assess good teaching and therefore evaluations represent nothing more than a popularity contest (Emery, Kramer, & Tian, 2003). Some authors have argued that student evaluations of faculty should not be used in decisions for tenure and promotion because charismatic and enthusiastic instructors were found to earn high ratings, even if they may have had low knowledge of the subject matter (Emery, et al, 2003). Another objection is based on the idea that quality of teaching itself is a discipline-specific construct. Disciplinary differences affect beliefs about the nature of knowledge and learning, teaching practices, and perceptions about what is effective teaching and how to evaluate it (Hutchings & Shulman, 1999). Therefore, many scholars have advocated for discipline-specific faculty evaluation systems (Ory, 1991). Nonetheless, generic student evaluations are administered in universities throughout the United States every semester and result in long- lasting repercussions to the faculty.

Ideal Teacher

In contrast to teacher evaluation literature, there is limited research on students' perception of an ideal university teacher. Findings from Rubin's (1981) research on the "ideal professor," identified five general categories of traits students rated highly: (a) knowledge, intellect, and ability, or expertise in the subject; (b) professionalism, or qualities that command respect; (c) ability to communicate; (d) openness to students and their ideas; and (e) being nurturing and supportive. Additionally, Kneipp, Kelly, Biscoe, & Richard's (2010) research indicated that of the five personality characteristics assessed (openness, conscientiousness, extroversion, agreeableness, and neuroticism), agreeableness was the only factor that significantly correlated with student ratings of instructional quality. Additional studies (Helterbran, 2008; Silva, Silva, Quinn, Draper, Cover, & Muoff, 2008) investigated the impact of an instructor's personality on the quality of instruction. The findings pointed out that faculty need to be mindful that their personality traits impact the interactions with students resulting not only in more meaningful learning, but also in retention and graduation rates.

Instrument Validation

Student evaluations of teaching have both summative and formative purposes. The evaluations are summative in that they are used to obtain student feedback for personnel decisions, such as merit pay, tenure, and promotion. They are formative in that they are used to obtain student feedback for the purpose of improving instruction.

For student evaluations of teaching, the form of validity of most concern is construct validity, which reflects how useful the instrument is for measuring the students' view of the effectiveness of instruction. While construct validity can never be completely present or absent in a validity study, assessing it can provide an understanding of the conceptual

framework of the instrument. In addition, reliability is important because it assesses agreement among different students within the same course.

Regarding student evaluations of teaching, much of the research and debate centers on the validity and biases of student ratings of teacher effectiveness. Though some studies tend to conclude that these evaluations are reliable and valid when compared to other measures of effective teaching (Ambady & Rosenthal, 1993; Centra, 1993), there are also studies indicating that ratings are biased by such factors as workload (Marsh & Roche, 2000), student effort (Centra, 1993), gender and age (Arbuckle & Williams, 2003); and grading leniency (Newson, 2004). Student ratings have also been found to be related to students' sense of involvement in the course (Remedios & Lieberman, 2008).

There is also some evidence that the relationships of students' background characteristics and academic discipline differences may affect their teaching evaluations (Cranton & Smith, 1990). Professors of humanities courses are frequently rated more highly than professors of social science and natural science courses (Marsh & Dunkin, 1992). Beran & Violato (2005) also show that lab-type courses receive higher ratings than lectures or tutorials, and courses in the social sciences receive higher ratings than courses in the natural sciences.

Despite the debate about the validity and biases of students' evaluations, researchers (Heller & Clay, 1993) claim that students' evaluations are more highly reliable than other measures of teacher effectiveness, including peer ratings and observations, and thus students' evaluations of faculty continue to be the most frequently used gauge in higher education of how well courses are taught.

It appears that student evaluation of teaching is here to stay since this debate has continued for decades. If faculty must abide by a system that may use "unvalidated and mainly irrelevant results" and instruments that have been neither "piloted nor validated," then it behooves the investigator to conduct research that contributes to an improved, validated instrument useful for evaluating effective instruction (Wines & Lau, 2006). Once characteristics of the ideal teacher are validated, then those characteristics should be incorporated into an improved teacher evaluation tool.

The T-Q instrument was designed to determine the qualities most valued by students. Use of the instrument can yield several benefits. First, it can inform the development or revision of Student Evaluation of Teaching Instruments (SETS). Since SETS are based upon student perspectives, their development and revisions should be based at least in part upon student's values. Second, if faculty know the qualities that students most value, then faculty can structure their instructional methods based upon these qualities. Some may argue that this is self-serving; faculty can achieve better evaluations on SETS if they know what their students value. While this may be true, it may simply formalize a process that already occurs informally. SETS are determinants in tenure and promotion, so faculty may be expected to be responsive to feedback from SETS. Lastly and perhaps most importantly, using a formal, validated process to determine the qualities of faculty most desired by students may lead to improved instruction and learning. Given these potential benefits, establishing the reliability and construct validity of the T-Q instrument is needed. Use of the T-Q instrument may serve as a basis for improvements to SETS, as well as improvements to teaching and learning.

The purpose of this study was to develop a valid and reliable instrument for measuring perceptions of teacher qualities most valued by students in the university setting. This pilot validation effort was conducted with Economics faculty and students at two universities. Further studies involving other settings and academic disciplines should be pursued.

Table 1
TEACHER QUALITIES (T-Q) INSTRUMENT ITEMS, Version A
The ideal teacher:
1. Is knowledgeable about the subject.
2. Conveys knowledge effectively.
3. Is punctual.
4. Demonstrates confidence when teaching.
5. Is patient with students.
6. Demonstrates a caring attitude for students.
7. Listens to students' concerns.
8. Is dedicated to excellence in teaching.
9. Is sensitive to diversity.
10. Offers adequate resources for students to complete tasks.
11. Is willing to help students achieve goals.
12. Encourages students to achieve.
13. Shows passion for life.
14. Makes the classroom fun.
15. Relates classroom work with life examples.
16. Uses new technology to teach.
17. Presents materials in an organized way.
18. Grades fairly.
19. Sets attainable expectations for the students.
20. Is dedicated to the mission of the university.
21. Engages students in the classroom.
22. Is intellectually stimulating.

METHODS

Instrument Development

The T-Q instrument was developed to measure student's perceptions regarding qualities of the ideal teacher. When first prototyped, the instrument was comprised of 12 items representing faculty qualities. The instrument was designed such that students were instructed to rank order the 12 items, thereby indicating the relative value of each of the faculty qualities. The instrument was administered to 37 undergraduate Economics students. Following the initial administration, changes were made to the instrument in an effort to improve the instrument's validity and usefulness. The instrument was expanded to 22 items representing faculty qualities. The instrument design was also changed such that students were instructed to rate each item on a Likert-type scale of 1 to 5 representing "not important at all," "not very important," "neutral," "important," and "very important," respectively. The revised 22-item instrument was reviewed by faculty for content validity. The revised instrument underwent a second test with a sample of 61 students. Though all 22 items were retained, several items were reworded for clarity based upon faculty and student feedback. The 22-item T-Q instrument, Version A, is provided in Table 1. The instrument was evaluated for reliability and validity based upon a sample of Economics students from two universities, and it was subsequently revised. Prior to conducting the study, Institutional Review Board approval was granted.

Sample

To assess the validity and reliability of the T-Q instrument, it was administered to 458 Economics students at two universities. The students were enrolled in a variety of

Economics courses including Microeconomics, Macroeconomics, and Managerial Economics. Characteristics of the students are provided in Table 2. About 1/4 of the total sample was comprised of graduate students, though only one of the universities had graduate students within the sample. Student sex was roughly evenly distributed between males and females. Student GPA and parent education differed significantly between the two universities.

	First University[a]	Second University	Total
Table 2 **SAMPLE CHARACTERISTICS FOR 458 STUDENTS, N (%) OR MEAN ± SD**			
	324 (71)	134 (29)	458 (100)
Student GPA	3.45 ± 0.40	2.86 ± 0.63	3.27 ± 0.55
Freshman	60 (19)	15 (11)	75 (16)
Sophomore	74 (23)	56 (42)	130 (28)
Junior	42 (13)	43 (32)	85 (19)
Senior	24 (8)	20 (15)	44 (10)
Graduate	117 (37)	0 (0)	117 (26)
Female	141 (44)	61 (46)	202 (44)
Male	182 (56)	73 (55)	255 (56)
Parent Graduated College, Yes	170 (54)	41 (31)	211 (46)
Parent Graduated College, No	146 (46)	93 (69)	239 (52)

[a] Data are missing for < 2% of the students.

Setting

Students participating in this study were enrolled at two private universities during 2011-2013. Both universities have a large percentage of students from traditionally-underserved populations. One university, located in a large metropolitan city in the southwestern US, is federally designated as a Hispanic Serving Institution (HSI); over half of the approximately 9000 students enrolled in the urban university are Hispanic. The university provides undergraduate and graduate degree programs, including masters, PhD and professional degrees. The other university, located in the southeastern US, has enrollment of about 1300 students; about 2/3 of the 1300 students enrolled in the small-town university are Black. The university provides undergraduate and masters-level degree programs.

Statistical Analysis

Descriptive statistics were used to identify demographics of the sample. To characterize construct validity of the instrument, confirmatory factor analysis (CFA) was conducted using AMOS (IBM SPSS AMOS 21, Armonk, NY) structural equation modeling software with maximum likelihood estimation. Alternative factor structures were evaluated for goodness-of-fit. Item and composite reliabilities were calculated. Additionally, Cronbach's alpha was calculated to assess instrument reliability using SPSS (IBM SPSS 21, Armonk, NY). For all analyses, the level of significance was 0.05.

RESULTS

Alternative model structures were proposed based upon prior exploratory analysis of the second instrument administration dataset (N = 61). The prior exploratory analysis produced a scree plot that provided a basis for a two-factor structure. Alternatively using eigenvalues > 1 as a criterion, the prior analysis provided support for a model with up to seven factors. Based upon statistical and theoretical perspectives, two competing models (i.e., two-factor model, five-factor model) were proposed for evaluation using the full sample (N = 458). Accordingly, analysis of the two models was pursued.

Two-Factor Model

An initial two-factor structure was proposed for the instrument. Of the 22 items on the instrument (Table 1), items 1, 2, 4, 17, 18, and 19 comprised one of the factors and all other items comprised the other factor. Following collection of the full dataset of student responses (N=458), the model was assessed using Confirmatory Factor Analysis (CFA). For this model, all standardized regression weights were statistically significant, and they varied from 0.454 to 0.702. The correlation (0.73) between the two factors was statistically significant. However, goodness-of-fit characteristics did not achieve generally accepted standards. Tabachnick and Fidell (2007) state that CFI and RMSEA are the most commonly reported goodness-of-fit indices. Per Hu and Bentler (1999), CFI > 0.95 and RMSEA < 0.06 represent goodness of fit. Although Kline (2005) identifies limitations of Normed Chi Square (NC, defined as ratio of Chi Square to degrees of freedom) as a fit indicator, he states that a NC < 2 or 3 is considered an indicator of acceptable model fit by some researchers. CFA for the two-factor model yielded the following goodness-of-fit values: NC = 3.896, CFI = 0.804, and RMSEA = 0.081. The model structure did not achieve sufficient goodness of fit based on any of these indices when applied to the data collected from the relatively large sample of Economics students. Given this outcome, the five-factor model structure was explored.

Five-Factor Model

The alternative five-factor structure was analyzed. Following analysis of the five-factor structure with 22 items, seven of the 22 items were systematically removed from the model to improve model performance (Table 3). The resulting 15-item, five-factor model is depicted in Figure 1. This model is a nested subset of the 22-item, five-factor model. A Chi-square difference test of the two five-factor models yielded Chi-square = 452.258, df = 119, $p < 0.05$. Thus, the 15-item model represented in Figure 1 provided significantly improved fit compared to the five-factor model with all 22 items included. Goodness-of-fit indicators for the model depicted in Figure 1 include: NC = 2.178, CFI = 0.948, and RMSEA = 0.052 (90% CI: 0.041, 0.062). For each of these fit indicators, the five-factor model depicted in Figure 1 achieves better fit than the 22-item, two-factor model. Furthermore, these values more closely align with acceptable goodness-of-fit criteria noted in the preceding paragraph. Based upon these criteria, the model depicted is Figure 1 achieves acceptable goodness of fit.

Table 3
TEACHER QUALITIES (T-Q) INSTRUMENT ITEMS, Version B[a]
The ideal teacher:
1. Is knowledgeable about the subject.
2. Conveys knowledge effectively.
3. Is punctual.
4. Demonstrates confidence when teaching.
5. Is patient with students.
6. Demonstrates a caring attitude for students.

7. Listens to students' concerns.
9. Is sensitive to diversity.
11. Is willing to help students achieve goals.
13. Shows passion for life.
14. Makes the classroom fun.
15. Relates classroom work with life examples.
17. Presents materials in an organized way.
18. Grades fairly.
19. Sets attainable expectations for the students.

a Numbering retained from Version A (Table 1) for comparison purposes

All standardized regression weights were statistically significant for the 15-item, five-factor model depicted in Figure 1, with values ranging from 0.54 to 0.89. Corresponding item reliabilities (the square of the regression weights) varied from 0.29 to 0.79; these values represent the proportion of item variance explained by the associated factor. The average variance extracted (i.e., the sum of the squared regression weights divided by the number of observed variables) for factors 1 through 5 was 0.457, 0.389, 0.463, 0.330, and 0.598, respectively (Shumaker & Lomax, 1996). All factor correlations were statistically significant; they varied from 0.28 to 0.74. Though the factors were correlated, none of the correlations were sufficiently large (e.g., > 0.85) to suggest that any two factors are actually measuring the same construct (Kline, 2005). These findings characterize the construct validity of the instrument.
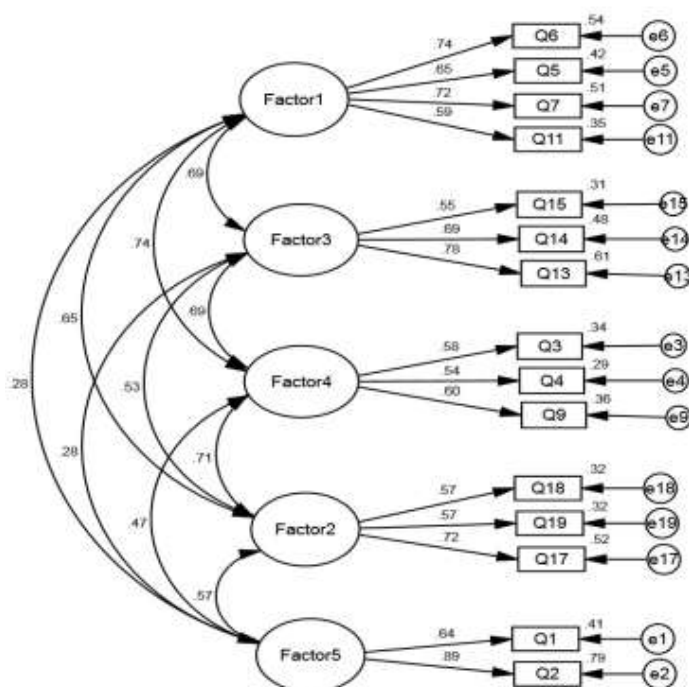
Figure 1. Five-Factor Structure of T-Q Instrument, Version B

Composite reliabilities were calculated for each factor. The reliabilities for factors 1 through 5 are 0.770, 0.654, 0.717, 0.595, and 0.745, respectively. These values generally demonstrate acceptable reliability for the instrument according to the standard of 0.60 recommended by Bagozzi and Yi (1988). Clark and Watson (1995) recommend that average inter-item correlations should be moderate, generally falling in a range of 0.15 to 0.50. Average inter-item correlations for factors 1 through 5 were 0.447, 0.391, 0.456, 0.330, and 0.568, respectively. Though the average inter-item correlation for factor 5 exceeds this guideline, it may be justified given that the factor is comprised of only 2 items. Given the related nature of the constructs, internal consistency reliability for the 15-item model was calculated, yielding Cronbachs's alpha = 0.846. Clark and Watson (1995) note that researchers often cite Cronbach's alpha of 0.70 as a minimum standard of acceptable or good internal consistency. Collectively, these different measures suggest that the instrument meets or exceeds minimal standards for reliability.

DISCUSSION

The revised 15-item instrument named T-Q, Version B (see Table 3) demonstrates acceptable reliability and construct validity. The instrument is comprised of 5 factors. Given the within-factor item groupings, the factors have been labeled Caring, Structured, Enthusiastic, Responsible and Knowledgeable for factors 1 through 5, respectively.

As educators, administrators, and faculty members focus attention on teachers' quality and educational efficiency, there is a need for a valid, reliable, and parsimonious means of evaluating teachers' quality. Use of the T-Q instrument may complement the use of SETS since research has shown that teaching evaluations are biased by various factors, such as the students' values, grades, type of courses, workload, and instructor's personality (Morgan, et al. 2003; Simpson, & Siguaw, 2000; Sojka, et al. 2002, MacDermott, 2013). In particular, student's responses on the T-Q may provide a context for interpretation of student feedback on SETS.

This may be particularly germane when comparing SETS across courses, faculty and academic disciplines. Student evaluations of faculty may be influenced by how students value different faculty qualities. Bacon and Novotny (2002) found that students who strive for achievement rank teachers who grade strictly higher than teachers who grade leniently. Basow (2000) found that male and female American students differed in their perception of traits assessing teaching style and class management: female students prefers a more warm and caring teaching style while male students prefer a sober, quiet learning environment. Wright (1997) argued that homogeneity or heterogeneity of students' ability levels could affect the teaching evaluation; teachers who teach classes that are more heterogeneous than homogeneous in ability levels are perceived to produce lesser effects on student learning and receive lower scores on teaching evaluations. Knowing what students value may help to explain variability in SETS both within and between students.

Students' evaluation could also be biased by the popularity and personality traits of the faculty. Researchers have found that students correlated teaching competence and ability with the instructor's personality and gave higher evaluations to instructors who were seen as "kind and caring" and who had a "very positive feeling towards the class and students" (Gursoy & Umbreit, 2005).

As described above, faculty evaluations across academic disciplines and course levels may not be comparable given differing values from different student populations. As a complementary tool for faculty evaluations, the validated T-Q instrument can be used to determine students' expectations of faculty so as to improve faculty teaching through another channel. From the survey results, faculty can gain a better understanding of the teaching

qualities which the students consider important and therefore identify areas for improvement. By combining the T-Q results with the teaching evaluation, faculty can work on the qualities which the students consider important and in need of improvement. T-Q may serve as a useful instrument for educational researchers in assessing the impact of students' perception of an ideal teacher on teaching effectiveness.

In addition, from a practical perspective, the T-Q at only 15 items is shorter and therefore may be easier to administer and may contribute to improved response rates compared to the original 22-item survey, especially if multiple assessments of the same individual are desired.

Future Research

The T-Q instrument was initially developed for Economics teachers in private universities to understand students' perceptions of an ideal teacher and to identify potential areas for improvement. However, broader applicability and utility of the instrument should be considered. Further application of the instrument with larger samples and involving multiple institutions (public, community college) and academic disciplines would be beneficial to better establish the sensitivity and the external validity of the T-Q instrument.

The instrument's structure may be improved if the factor comprised of only 2 items is expanded. A 5-factor instrument, with each factor comprised of 3 or more items might yield improvements while retaining a relatively small number of items. Though future revisions of the T-Q instrument may be pursued, the instrument depicted in Table 3 demonstrated reliability and construct validity.

Furthermore, the T-Q instrument could be used to measure student's attitudes longitudinally. This could provide insights into how student's attitudes evolve while transitioning through higher education academic programs.

Limitations

While the T-Q instrument has demonstrated validity and reliability, there are limitations. First, the instrument's validity and reliability were determined in part by the setting and the population. Validity and reliability of the revised 15-item instrument were demonstrated only in Economics classes from two private universities. Thus, the external validity and applicability of these findings to other institutions and students in other disciplines requires more study. Additionally, the data collected for the study was self-reported and not verified. Replication of the findings observed in this study may confirm the instrument's validity. Lastly, the T-Q instrument was only administered once to participants; an assessment of test-retest reliability was not conducted.

CONCLUSION

This pilot study demonstrated the validity and reliability of the T-Q instrument, which was designed to measure perceptions of teacher qualities valued by students. The instrument may be used by researchers and educators to inform improvements in teaching and learning, as well as a means for improving SETS and establishing a context for the interpretation of SETS data. T-Q was originally developed using data gathered from Economics classes. Given the formal assessment of the properties of the instrument as described in the paper, T-Q may be attractive for broader use among educators in other disciplines. Further research should be conducted to determine if the T-Q instrument has applicability for use in other higher education settings. Revisions to the instrument should be explored to improve the validity and usefulness of the instrument.

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ONLINE LEARNING AND STUDENT ENGAGEMENT: ASSESSING THE IMPACT OF A COLLABORATIVE WRITING REQUIREMENT

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ABSTRACT

Considerable research has gone into answering the question of how college affects students (Astin, 1993b; Pascarella & Terenzini, 2005). Student engagement has been linked to measures of student success including student learning and student satisfaction (Kuh et al., 2006) and, thus, is often examined by universities when seeking to improve student outcomes. Based on a growing body of evidence, colleges and universities are being encouraged to incorporate "high impact educational practices" (Kuh, 2008) which have been positively associated with student retention and student engagement. One such high-impact educational practice is the use of collaborative assignments and projects, and is the educational practice at the focus of this study.

Concurrent with the growing focus on student outcomes has been considerable growth in online learning. Investigating the impact of the online environment on student engagement, a recent evaluation of National Survey of Student Engagement results suggests online learning presents some challenges (Chen, Kuh, & Gonyea, 2008). The aim of this paper is to examine the impact on student outcomes of a required collaborative writing project in the online class setting. By comparing measures of student engagement, learning and satisfaction between two sections of an online course, this study seeks to isolate the impact of the collaborative writing requirement on those outcomes. The findings indicate the collaborative requirement had a positive impact on engagement. The findings also reveal an unexpected negative association between the collaborative requirement and student satisfaction with faculty-student interaction. Based on these results, the author explores ways to promote the positive outcomes associated with collaborative online work while seeking to minimize possible negative consequences on student-faculty interaction.

INTRODUCTION

The question of how college affects students has been a topic of considerable research within higher education over several decades (Astin, 1993b; Pascarella & Terenzini, 2005). Several studies link student outcomes of learning, persistence, engagement, and satisfaction (Carini, Kuh, & Klein, 2006; Kuh, Kinzie, Buckley, Bridges & Hayek, 2006; Tinto, 1993). Student engagement has been linked to measures of student success including student learning and student satisfaction (Kuh et al., 2006) and, thus, is often examined by universities when seeking to improve student outcomes. Based on a growing body of evidence, institutions of higher education are encouraged to incorporate "high impact educational practices" (Kuh, 2008) which have been shown to be positively associated with student retention and student engagement. One such high-impact educational practice is the use of collaborative assignments and projects.

Concurrent with the growing focus on student outcomes has been a growth in online learning opportunities. Whether entire programs or individual courses, the amount of offerings within the online environment is growing. In 2012, the number of students taking at least one online course was 7.1 million, or 33.5 percent of all higher education students, and

represented a 6.1 percent rate of growth in one year and over 300 percent since 2003 (Allen & Seaman, 2014). While the conveniences of online learning for students may be readily evident, online learning also presents challenges in terms of engaging students. A recent evaluation of National Survey of Student Engagement results revealed that distance learners, as compared to their on-campus counterparts, were significantly less involved in active and collaborative learning, worked less frequently with other students on projects during class, and worked less frequently with classmates outside of class to prepare class assignments (Chen, Kuh, & Gonyea, 2008).

Because student engagement is one of the primary components of effective teaching and effective learning, determining what engages online students with their learning is of critical importance to student success. Updating the Seven Principles for Good Practice, Chickering and Ehrmann (1996) stress the importance of active learning strategies for online learners. Johnson and Aragon (2003) recommend several ways to structure online courses to promote active learning, including organizing online courses around projects and cooperative learning. And, recent efforts have resulted in new measures of student engagement within the online environment (Dixson, 2010).

This research project was developed in response to a university initiative to improve student engagement in the online environment. The purpose of the study was to determine whether a collaborative writing project in an online course would promote student engagement and other positive outcomes. Insights from previous studies on active learning were used to design the project, which was then implemented in two sections of an online Business Ethics course. The results suggest the collaborative project had a positive impact on student engagement while a negative impact on some aspects of student satisfaction, particularly satisfaction with faculty support. Based on these results, the author provides practical suggestions on how to promote the positive outcomes associated with collaborative online work while seeking to minimize possible negative consequences on student-faculty interaction.

THEORETICAL FRAMEWORK

Significant research has been conducted on how college affects students (Astin, 1993b; Pascarella & Terenzini, 1991; 2005). Several measures of student success have been used, including student learning, persistence, engagement, and satisfaction, to name a few (Kuh et al., 2006). Some of the earliest work on predictors of student success suggested such success is related to the combination of student characteristics with features of the institution of higher education. Astin (1993a) referred to an I-E-O model (input-environment-outcome) while Tinto (1993) described an "interactional" model. What is common has been the focus on how the interaction between what the student brings to college and the experiences the student has at college impacts student outcomes.

Some studies have focused on identifying these college experiences which facilitate higher student outcomes. Referred to as student "involvement," Astin (1999) defines such student experiences as "the amount of physical and psychological energy that the student devotes to the academic experience" (p. 518) and cites frequent interaction with faculty members and other students as examples of such involvement. "Integration" (Tinto, 1993), "interaction" (Chickering & Gamson, 1987), and "engagement" (Kuh, 2001) are concepts similar to Astin's "involvement." More recent studies of student interaction have included a focus on the online learning environment (Chen, Kuh, & Gonyea, 2008; Dixson, 2010; Miller, 2012; Tello, 2007).

Based on this growing body of evidence, institutions of higher education are encouraged to incorporate "high impact educational practices" (Kuh, 2008) that have been

shown to be positively associated with student learning, satisfaction, and engagement. These high-impact activities are effective in promoting student success because they represent structured circumstances requiring interaction with both faculty and peers over extended time periods on substantive matters (p. 14). Collaborative learning is one high-impact practice that combines the goals of learning to work with others while learning from the insights of others, and can be structured into a course with team-based assignments and writing projects.

An engaging online classroom contains many of the same design and implementation features as an engaging on-campus classroom. Updating the Seven Principles for Good Practice, Chickering and Ehrmann (1996) stress the instructional strategies embedded in the Seven Principles remain essential for the technology-mediated education. According to Chickering and Ehrmann (1996), the following are important components of an engaged online learning environment: contacts between students and faculty, prompt feedback for students, cooperation and reciprocity among students, and the use of active learning techniques. Johnson and Aragon (2003) recommend several ways to structure online courses to promote cooperative and active learning, including organizing online courses around projects which provides students with the opportunity to reflect on a particular problem over long periods of time, while requiring student- to-student interaction that promotes social learning.

High impact practices require interaction not only with peers over extended time periods on substantive matters, but also interaction with faculty (Kuh, 2008). Two of the Seven Principles for Good Practice in Undergraduate Education (Chickering & Gamson, 1987) relate to promoting interaction between faculty and students: encouraging contact between students and faculty and providing prompt feedback. In the online setting, faculty interaction with students is created through high-quality, frequent, and timely faculty communication (Swan et al., 2000). Quantity and quality of instructor interactions with students in online courses has been linked to student learning (Swan, 2003) and satisfaction with the course (Swan et al., 2000).

This research project seeks to measure the impact of a team-based writing project in an online course on student outcomes. The project is designed to isolate the impact of the team-based writing project by comparing student outcomes across two sections of the same online course. The only difference in course requirements is the team-based writing project in one section and an individual writing project in the other. The same instructor is used for both sections of the course, and, as such, no difference in faculty responsiveness between the two sections is anticipated.

HYPOTHESES

Based on the review of literature and the research design, the following hypotheses are developed.

H_1 Student engagement will be positively associated with student learning.
H_2 Student engagement will be positively associated with student satisfaction.
H_3 The collaborative writing experience will be associated with higher levels of student engagement.
H_4 The collaborative writing experience will be associated with higher levels of student learning.
H_5 The collaborative writing experience will be associated with higher levels of student satisfaction.
H_6 Student measures of faculty responsiveness will not differ based on the collaborative writing requirement.

METHODOLOGY

Data Collection

The subjects for this research were students in two online sections of a 3000-level Business Ethics course at a state university in the upper-Midwest region of the U.S. during 2014. All students in one section were required to complete an individual writing project as part of the course requirements. In the other section, all students were required to complete a collaborative (team-based) writing project as part of the course requirements. Beyond this difference in writing project, and the use of Google Documents to facilitate the collaborative writing project, the remaining course requirements were the same between the two sections, including required discussions, exams, and surveys. The course sections were taught by the same instructor and delivered using the DesireToLearn course management system. A total of 13 students completed the course requiring the individual writing project while 14 students completed the course requiring the collaborative writing project. Completed surveys were received from each of the 27 students.

Measures

The constructs for this study were measured as follows.

Collaborative Writing Experience

The class project developed for this study to support active and collaborative learning was a collaborative writing experience (CWE). The CWE was designed to incorporate the expectations of a high-impact education practice (Kuh, 2008). Specifically, the CWE was a semester-long, written case analysis which required teams of students to interact with each other, and with the instructor, over an extended period of time. The CWE requirements included expectations of individual and group contributions, multiple submissions including six interim reports and one final report, and multiple points for instructor feedback on each groups' work. Individual student contributions to each group document were tracked through features contained in Google Documents. Instructor feedback to each group on each report was provided through the course management system. To support the development of cooperation and reciprocity among students, peer evaluation results formed part of each individual student's overall score for the class.

Students in the course section without the CWE were given an individual writing experience (IWE). The IWE requirements mirrored the requirements of the CWE, with the exception of the group writing feature and one group introduction assignment. The IWE followed the same timeline as the CWE requirements, included the same case analysis, six interim reports, and one final report as the CWE, and included the same level, frequency, and medium of instructor feedback as the CWE.

A variable was created to identify those students who were enrolled in the course section that required the collaborative writing experience. Students who were enrolled in the section requiring the CWE were coded one (1) while students who were enrolled in the section that required the IWE were coded zero (0).

Student Engagement

While the National Survey of Student Engagement (2009) and other instruments are available as tools to measure student engagement, few instruments focus solely on engagement in the online learning environment. Dixson (2010) reviewed several measures of interaction within online courses, and developed an engagement survey for use in an online environment. Dixson's Online Student Engagement Scale (OSE) is the foundational measure of engagement for this study. Three engagement subscales from the OSE are used: skills engagement, emotional engagement, and participation engagement. The question

comprising these engagement scales are outlined in Table 1. The response categories include: "1 = not at all characteristic of me; 2 = not really characteristic of me; 3 = moderately characteristic of me; 4 = characteristic of me; 5 = very characteristic of me."

Skill engagement includes measures of good organizational and study skills, and how students interact with the course content (Miller, 2012). The Skill Engagement Index was computed as the mean score of the students' responses to six items from Dixson's instrument. This six-item scale yielded a Cronbach's alpha score of .832 (n=26). Emotional engagement refers to efforts by students to make the course materials interesting and relevant to their own lives. The Emotional Engagement Index was computed as the mean score of the students' responses to five items from Dixson's instrument. This five-item scale yielded a Cronbach alpha score of .821 (n=27). Similar in meaning as student-to-student interaction, participation engagement measures how a student works with and gets to know other students (Miller, 2012). The Participation Engagement Index was computed as the mean score of the students' responses to six items from Dixson's instrument. The Cronbach alpha score for this six-item scale was .862 (n=27).

Table 1
STUDENT ENGAGEMENT INDICES

QUESTION	VARIABLE NAME
While considering your experiences in this class, please indicate the degree to which each of the following behaviors describe you:	
Making sure to study on a regular basis	Skill Engagement 1
Staying up on college readings	Skill Engagement 2
Looking over class notes between getting online to make sure I understand the material	Skill Engagement 3
Being organized	Skill Engagement 4
Taking good notes over readings, PowerPoints, or video lectures	Skill Engagement 5
Listening/reading carefully	Skill Engagement 6
Putting forth effort	Emotional Engagement 1
Finding ways to make the course material relevant to my life	Emotional Engagement 2
Applying course material to my real life	Emotional Engagement 3
Finding ways to make the course interesting to me	Emotional Engagement 4
Really desiring to learn the material	Emotional Engagement 5
Having fun in online chats, discussions or via email with the instructor or other students	Participation Engagement 1
Participating actively in small-group discussion forums	Participation Engagement 2
Helping fellow students	Participation Engagement 3
Engaging in conversations online (chat, discussions, email)	Participation Engagement 4
Posting in the discussion forum regularly	Participation Engagement 5
Getting to know other students in class	Participation Engagement 6

(Source: Dixson, 2010.)

Finally, one measure (Writing Project on Interaction) was created to assess the impact of the writing project on student interaction. Students responded to the following question: "The [group/individual] writing project facilitated my interaction with other members of class." A six- level response category to measure level of agreement is used in this study: 1=Strongly Disagree; 2=Moderately Disagree; 3=Somewhat Disagree; 4=Somewhat Agree; 5=Moderately Agree; 6=Strongly Agree.

Student Learning

Levels of learning were assessed with seven indirect measures of learning and one direct measure of student learning. The seven survey questions related to student learning

are outlined in Table 2. Response categories for the indirect measures employed the six-level responses of Strongly Disagree (1) to Strongly Agree (6). One direct measure of student learning (Test Score) was created by combining student scores from five, 20-point quizzes administered throughout the semester.

Table 2 STUDENT LEARNING MEASURES	
QUESTION	VARIABLE NAME
This course helped me develop my writing skills and	SLO: Writing Skills
This course helped me improve my analytical and critical	SLO: Critical Thinking
This course helped me to acquire work-related skills and	SLO: Work Skills
This course contributed to my ability to work effectively	SLO: Team Skills
This course contributed to my understanding of people from other	SLO: Understanding People
This course helped me develop my skills in solving real-	SLO: Problem Solving
The [group/individual] writing project facilitated my learning and	Writing Project on Learning

Student Satisfaction

Five separate measures of student satisfaction were created to reflect student satisfaction with student interaction, faculty support, and teaching quality, as well as overall satisfaction with the course. "The quality of interactions with other student in this class has been: *(1=poor; 2=fair; 3=good; 4=excellent)*" measures Student Interaction Satisfaction. "The quality of support from the instructor has been: *(1=poor; 2=fair; 3=good; 4=excellent)*" measures Faculty Support Satisfaction. The last three measures share the response category of 1= Strongly Disagree; to 6=Strongly Agree: "The quality of teaching and instruction from [faculty name] has been good" (Teaching Quality Satisfaction); "In evaluating my experience in this course, I would recommend this course to others" (Recommend This Course); and, "Overall, I am satisfied with this course" (Overall Satisfaction).

Instructor Responsiveness

Students were asked a total of three questions regarding timeliness of instructor responses and the amount of feedback they received on their assignments. These measures (variable names in parentheses) were adopted from Miller's (2012) work on instructor responsiveness in online learning. "On average, the instructor's response time to my questions was: *0= I don't know as I never asked any questions; 1=I never received an answer to my questions; 2=Slow, more than a week; 3=fairly slow, about 3-7 days; 4=fairly quickly, within 48 hours; 5 = quick, within 24 hours*" (Response Time on Questions). "On average, the amount of feedback I received from the instructor on assigned work was: *0= none, just grades; 1 = just a few words; 2 = brief, but some substance or detail; 3 = pretty substantive and detailed; 4 = extensive, substantive and detailed*" (Feedback on Assigned Work). And, "On average, the instructor's response time for feedback on assigned work was: *0 = there was no feedback; 1 = slow; 2 = average; 3 = pretty prompt; 4 = prompt*" (Response Time on Assigned Work).

Background Characteristics

The background characteristic measures (variable names in parentheses) used in this study were developed by Miller (2012) in her work with engagement, completion, and success of online students. Student background and experience with taking online classes was measured with student responses to the following question. "Counting this class, and all

other classes taken anywhere, I have taken: *(1=one online class; 2 = two online classes; 3 = 3 online classes; 4 = four online classes; 5 = five or more online classes)*" (Background with Online Classes). Student experience in taking online classes at this particular university was measured with student responses to the following question. "Counting this class, I have taken online classes at [name of university]. *(1= one online class; 2 = two online classes; 3 = three online classes; 4 = four or more online classes)*" (This School). Student preference for taking classes online was measured with the following question. "Please choose the answer that BEST describes how you feel about online classes. *(1=I hate them and avoid them whenever possible; 2=I wouldn't choose them if I had a choice; 3=I neither avoid nor seek them; 4=I take them when they work best for my schedule; 5=I prefer them and choose them first when possible; 6=I have chosen to take all my courses online)*" (Preference for Online Classes). Student age was measured with the following question. "How old are you? *(1=18-24; 2=25-29; 3=30-39; 4=40 and up)*" (Age). Student grade point average was measured with the following question. "While you are taking this online class, what would you estimate is your GPA? *(0=less than 2.0; 1=2.0-2.4; 2=2.5-2.9; 3=3.0-3.4; 4=3.5-3.9; 5=4.0)*" (GPA). The number of credits being taken by students was measured with the following question. "While you are taking this online class, how many credits are you taking?" (Credit Load). The student's highest educational goal was measured with the following question. "What is your highest educational goal? *(1= to complete some classes; 2=to complete a certificate; 3=to complete and A.A. or A.S. degree; 4=to complete a B.A. or B.S. degree; 5=to complete a master's degree; 6=to complete a doctoral degree (Ph.D., J.D., M.D., etc.))*" (Educational Goal). The amount of time students spent preparing for this class was measured with the following question. "About how many hours did you spend in a typical week preparing for THIS CLASS (studying, reading, writing, doing homework, and other academic activities)?" (Time Spent Preparing).

Methods

Correlational analysis was used to test the univariate hypotheses (H_1, H_2, and H_3). Test for equality of means was used to identify any significant differences in measures between students completing the collaborative writing requirement and those completing the individual writing requirement (H_4, H_5, and H_6).

RESULTS

A test for equality of means was used to determine whether the group of students who completed the collaborative writing requirement was relatively similar in their background to those who completed the individual writing requirement. The results (Table 3) show that the backgrounds of the two groups of students were not significantly different in terms of experience with and preference for online learning, age, GPA, time spent preparing for class, and overall education goal. The only background measure that differed between the two groups was a higher mean credit load (13.57 credits versus 10.69 credits) for the group that had the collaborative writing experience (t=1.765, df=24, p=.090). Consideration of the credit load difference will be included in the discussion section.

Table 3
TEST OF DIFFERENCES IN BACKGROUND CHARACTERISTICS BASED ON COLLABORATIVE AND INDIVIDUAL WRITING EXPERIENCES

Variable	CWE (n=14) Mean (S.D.)	IWE (n=13) Mean (S.D.)	t (df)	p-value*
Background with Online Classes	4.71(1.069)	4.69(1.109)	.050 (25)	.959
This School	3.86(.864)	3.54(1.127)	.828 (25)	.415
Preference for Online Classes	5.64(.497)	5.38(1.193)	.744 (25)	.464
Age	1.86(1.027)	2.15(.987)	-.764 (25)	.452
GPA	3.57(.852)	3.46(.877)	.330 (25)	.744
Credit Load	13.57(4.201)	10.69(4.27)	1.765 (25)	.090[a]
Educational Goal	4.57(.646)	4.54(.776)	.120 (25)	.905
Time Spent Preparing	7.57(4.988)	9.39(8.52)	-.681 (25)	.502

*Note: two-tailed test of significance; [a]p=<.10,*p=<.05, **p=<.01, ***p=<.001*

Analyses of correlations were used to test the hypothesis of student engagement and student learning (H_1). The correlational analysis (Table 4) reveals that each of the indices of student engagement is associated with one or more student-reported measure of student learning. The results also reveal that none of the student engagement indices were correlated to actual test scores. The Emotional Engagement Index was the most highly correlated engagement index to the measures of student learning, and was significantly correlated to each of the six student learning outcomes (Writing Skills: r=.446, p<.05; Critical Thinking Skills: r=.655, p<.01; Work Skills: r=.777, p<.01; Team Skills: r=.636, p<.01; Understanding People: r=.512, p<.01; and Problem Solving Skills: r=.627, p<.01). The Participation Engagement Index was significantly correlated to four measures of student learning: Work Skills (r=.424, p<.05.), Team Skills (r=.632, p<.01), People Skills (r=.406, p<.05) and Problem Solving Skills (r=.384, p<.05). Finally, the Skill Engagement Index was significantly related to one learning outcome: Work Skills (r=.519, p<.01).

Table 4
STUDENT ENGAGEMENT AND STUDENT LEARNING CORRELATIONS

Student Learning Outcomes	Test Scores	Writing Skills	Critical Thinking Skills	Work Skills	Team Skills	Under-standing People	Problem Solving Skills
Skill Engagement Index	-.070	.252	.234	.519**	.271	.083	.365
n	26	26	26	26	26	26	26
Emotional Engagement Index	-.170	.446*	.655**	.777**	.636**	.512**	.637**
n	27	27	27	27	27	27	27
Participation Engagement Index	-.132	.139	.280	.424*	.632**	.406*	.384*
n	27	27	27	27	27	27	27

*Note: *p=<.05, **p=<.01, ***p=<.001*

Correlational analysis was also used to test the hypothesis of student engagement and student satisfaction (H$_2$). The results (Table 5) reveal that the Emotional Engagement Index is correlated to satisfaction. Specifically, two of the four measures of satisfaction are significantly correlated to Emotional Engagement Index: Overall Satisfaction (r=.597; p<.01), and Recommend this Course (r=.603, p<.01). The Participation Engagement Index is significantly related to Student Interaction Satisfaction (r=.530, p<.01). The Skill Engagement Index is not related to any of the measures of student satisfaction.

	Table 5 STUDENT ENGAGEMENT AND STUDENT SATISFACTION CORRELATIONS				
	Student Satisfaction				
	Faculty Support	Teaching Quality	Recommend the Course	Overall Satisfaction	Student Interactions
Skill Engagement Index n	-.150 26	.140 26	.263 26	.279 26	.065 26
Emotional Engagement Index n	.279 27	.295 27	.603** 27	.597** 27	.229 27
Participation Engagement Index n	.083 27	.177 27	.333 27	.320 27	.530** 27
Note: *p=<.05, **p=<.01, ***p=<.001					

A test for equality of means was used to determine whether levels of student engagement differed between the group of students who completed the collaborative writing requirement and the group who completed the individual writing requirement (H$_3$). The results (Table 6) indicate CWE students expressed higher measures of Writing Project on Interaction than IWE students (t=2.61, df = 25, p=.019). Engagement measures, including Skill Engagement Index, Emotional Engagement Index, and Participation Engagement Index, were higher for CWE students than for IWE students, but none of these differences was statistically significant. Only by evaluating the individual measures within the engagement indices do statistically significant differences emerge between the CWE and IWE students. A discussion of these engagement differences is offered in the Discussion that follows these Results.

A test for equality of means was used to determine whether levels of student learning differed between the group of students who completed the collaborative writing requirement and the group who completed the individual writing requirement (H$_4$). The results (Table 6) indicate that most measures of student learning were higher for the CWE students than for the IWE students, but that no statistically significant differences were found. Those learning measures that were higher for students with the collaborative experience included Test Scores, Writing Skills, Work Skills, Team Skills, Problem Solving Skills, and Understanding People. One measure was lower for CWE students: Writing Project on Learning (t = -1.305, df = 25, p= .202).

A test for equality of means was also used to determine whether levels of student satisfaction differed between the group of students who completed the collaborative writing requirement and the group that completed the individual writing requirement (H$_5$). The results (Table 6) indicate one measure of student satisfaction was significantly lower for

CWE students: Faculty Support Satisfaction (t= -2.768, df= 25, p= .010). The remaining satisfaction differences were not statistically significant: one measured lower for CWE students (Teaching Quality Satisfaction) and three measured higher for CWE students (Student Interaction Satisfaction, Overall Satisfaction, and Recommend This Course).

Finally, a comparison of means was used to determine whether student reports of instructor responsiveness differed between the students with the collaborative writing requirement and those with the individual writing requirement (H_6). The results (Table 6) indicate that CWE students measured instructor responsiveness lower than IWE students on each of the three measures of instructor responsiveness: Response Time on Questions (t= -2.105, df =24, p = .046), Feedback on Assigned Work (t=-1.943, df = 25, p = .063), and Response Time on Assigned Work (t = -2.041, df = 25, p=.052).

Table 6
TEST OF DIFFERENCES BASED ON WRITING REQUIREMENT

	CWE (n=14)	IWE (n=13)		
Variable	*Mean (S.D.)*	*Mean (S.D.)*	*t* (df)	*p*-value*
Skill Engagement Index	4.35(.427)	4.03 (.769)	1.313 (24)	.202
Emotional Engagement Index	4.27 (.640)	4.14 (.550)	.577 (25)	.569
Participation Engagement Index	3.67 (.650)	3.50 (.723)	.630 (25)	.534

Table 6
TEST OF DIFFERENCES BASED ON WRITING REQUIREMENT

	CWE (n=14)	IWE (n=13)		
Variable	*Mean (S.D.)*	*Mean (S.D.)*	*t* (df)	*p*-value*
Writing Project on Interaction	5.0(.877)	3.69(1.601)	2.609 (25)	.019*
SE1: Regular study	4.07 (.73)	4.08 (.76)	-.019 (25)	.985
SE2: Staying up on Readings	4.29 (.73)	3.92 (.95)	1.116 (25)	.275
SE3: Looking over notes	4.54 (.66)	3.85 (.99)	2.102 (24)	.046*
SE4: Being organized	4.64 (.63)	4.31 (.95)	1.088 (25)	.287
SE5: Taking good notes	3.86 (.95)	3.77 (1.30)	.202 (25)	.842
SE6: Listening/reading carefully	4.29 (.73)	4.23 (.83)	.183 (25)	.856
EE1: Putting forth effort	4.64 (.63)	4.00 (.82)	2.296 (25)	.030*
EE2: Making materials relevant	4.29 (.83)	4.31 (.75)	-.072 (25)	.943
EE3: Applying materials to life	4.36 (.74)	4.23 (.44)	.532 (25)	.126
EE4: Making course interesting	3.93 (.92)	4.08 (.76)	-.456 (25)	.148
EE5: Desiring to learn	4.14 (.86)	4.08 (.86)	.198 (25)	.844
PE1: Having fun in discussions	3.93 (.83)	3.85 (.90)	.248 (25)	.806
PE2: Participating in forums	4.07 (.73)	4.15 (.69)	-.301 (25)	.766
PE3: Helping fellow students	4.07 (.83)	3.62 (1.12)	1.208 (25)	.238
PE4:Engaging in conversations	4.21 (.58)	3.92 (.76)	1.126 (25)	.271
PE5: Posting regularly	2.86 (.95)	2.69 (1.03)	.432 (25)	.669
PE6: Getting to know others	2.86 (.95)	2.77 (1.17)	.216 (25)	.831
Writing Project on Learning	4.86(1.027)	5.31(.751)	-1.306 (25)	.202
Test Score	85.786 (8.028)	83.115 (10.104)	.763 (25)	.452

SLO: Writing Skills	4.71 (.726)	4.69 (1.316)	.054 (25)	.957
SLO: Critical Thinking	5.07 (.829)	5.15 (.987)	-.236 (25)	.816
SLO: Work Skills	5.36 (.633)	5.08 (.954)	.906 (25)	.374
SLO: Team Skills	4.79 (1.051)	4.31 (1.251)	1.078(25)	.291
SLO: Understanding People	4.57 (1.016)	4.00 (1.225)	1.323 (25)	.198
SLO: Problem Solving	5.14 (.663)	4.92 (1.115)	.628 (25)	.536
Recommend the Course	5.36 (.633)	5.08 (.954)	.906 (25)	.374
Overall Satisfaction	5.57 (.646)	5.46 (.660)	1.078 (25)	.291
Faculty Support Satisfaction	3.50 (.65)	4.0 (.00)	-2.768 (25)	.010*
Teaching Quality Satisfaction	5.64 (.633)	5.77 (.439)	-.598 (25)	.555
Student Interaction Satisfaction	2.86 (.663)	2.69 (.855)	.562 (25)	.579
Response Time on Questions	4.71 (.469)	5.00 (.000)	-2.105 (24)	.046*
Feedback on Assigned Work	3.79 (.426)	4.15 (.555)	-1.943 (25)	.063[a]
Response Time on Assigned Work	3.57 (.646)	4.00 (.408)	-2.041 (25)	.052[a]
Note: *=two-tailed test of significance; [a]*p=<.10,*p=<.05, **p=<.01, ***p=<.001*				

DISCUSSION

Many of the expected associations between student engagement and student learning were supported, as were associations between student engagement and student satisfaction. The results of this study support the importance of engagement, particularly emotional engagement, on student learning and student satisfaction in online courses. Emotional engagement reflects effort to make the course personally relevant, and was significantly linked with six measures of learning including development of writing, critical thinking, work, team, problem-solving, and understanding people skills, and two measures of overall course satisfaction. Participation engagement reflects interacting with other students, and was associated with four measures of learning (work, team, people, and problem-solving skills) and one measure of satisfaction (student interactions). Skill engagement which reflects study and organizational skills was associated with one measure of learning (the acquisition of work-related skills and knowledge) and no measure of satisfaction. The results of this study also support Dixson's (2010) OSE scales as measures of online student engagement.

In terms of assessing the impact a collaborative writing project as a high-impact educational practice in an online setting, some of the findings were anticipated while others were not. With regard to student engagement, the team-based writing project had a positive impact on each student engagement index, but the differences were not statistically significant. Significant differences emerge between the CWE and IWE students when the individual measures within the engagement indices are evaluated. Specifically, CWE students were significantly more likely to report that they put forth effort in this class (t = 2.296, df = 25, p = .030) and looked over class notes between getting online to make sure they understood the materials (t = 2.102, df = 24, p=.046). The higher levels of engagement become even more noteworthy given that the CWE students were carrying a higher credit load than the IWE students.

With regard to student learning, none of the differences between CWE and IWE students emerged as statistically significant. It might be that the collaborative writing project improves student interaction, but not necessarily learning. When asked specifically as to how the class writing project (individual or group) supported learning, students who

had the individual writing project felt the writing project helped them learn the subject matter more than students who had the collaborative writing project felt the writing project helped them learn the subject matter (t =-1.305, df = 25, p= .202). On the other hand, students who had the group writing project felt the writing project helped them interact with other students more than those who had the individual writing project.

An unanticipated finding in this study was the impact of the collaborative writing project on student measures of instructor effectiveness. CWE students reported slower instructor response time to questions, less substantive and detailed feedback on assigned work, and less prompt faculty response to assigned work than IWE students. These findings are consistent with the lower satisfaction with faculty support expressed by CWE students. Explanation of these findings is important and could justify additional research. For purposes of this paper, a few possible explanations are offered.

One possible explanation for these lower measures of instructor responsiveness and support is that the instructor was, in fact, less supportive of and responsive to students in the collaborative writing course section than students in the individual writing section. In this study, the same instructor taught both sections. The instructor followed the same protocol in terms of depth, breadth, and timeliness of feedback for both class sections. If one can assume, for the sake of discussion, that the actual level of instructor support and responsiveness was similar across both class sections, we should consider other possible explanations.

A second possible explanation is that the students' perceptions of faculty support and responsiveness differ for reasons other than actual differences in support and responsiveness. For example, features or consequences of the collaborative writing project might create the differed perception. Perhaps "one-on-group" feedback and interaction with the instructor is not perceived as meaningfully as "one-on-one" correspondences. Treating and communicating with students as a member of a group may not create the same faculty-student rapport (Brinthaupt et al., 2011) or teaching presence (Shea, Li, & Pickett, 2006) as treating and communicating with them as individuals.

A third possible explanation could be the actual level of faculty support and responsiveness needed by students engaged in a collaborative project is higher than for those engaged in an individual project. (The higher student need may be due to the collaborative nature of the CWE or may be a reflection of the higher credit load taken by the CWE students in this study.) Under this interpretation of higher need for support, lower satisfaction with support would reflect the gap between the higher need and actual support received. Each of these possibilities, as well as others not here enumerated, should be considered when designing and implementing an online group project.

To the extent that the results from this study can inform future efforts at implementing high-impact practices in online courses, the following suggestions are offered. First, group projects need to be appropriately designed. The consequences of any design flaw in the group project will be accentuated when implemented at a distance. The group project needs to include multiple intermediate steps that require meaningful student interaction as well as faculty interaction. Also, the final product or outcome needs to be something that benefits from social learning. Collaborative learning is impactful when it involves working with others on a problem that benefits from the insights and knowledge of others. The project needs to be designed such that the group creates higher outcomes/better solutions than what individuals would develop. Second, projects should be on topics that are personally relevant to the students. Personally relevant topics enhance a student's emotional engagement. Third, online group work needs to be supported with collaborative technologies, such as videoconferencing and document sharing resources. Students (and instructors) need training on how to use these resources prior to their actual use in the course. If the group interaction at a distance cannot be adequately supported, the resulting communication

barriers can actually deter engagement, learning and satisfaction. Fourth, to facilitate positive group norms and minimize social loafing, individual student contributions to the group project need to be recognized. Individual contributions may be assessed with peer evaluations, and tracked with cloud-based, document sharing programs. Finally, to ensure students perceive the faculty interaction as personalized and meaningful, instructors may need to provide not only group feedback on the group's progress, but also individual feedback on individual contributions to that progress.

LIMITATIONS AND FUTURE STUDIES

The sample size of this study precluded most multivariate analysis. Repeating the study with a larger group of students might allow for the identification of factors that predict levels of student engagement, satisfaction, and learning. Results based on a larger sample size may also reveal more differences that are statistically significant. Although this study did not compare instructor responsiveness to student engagement, learning, or satisfaction, future research may seek to evaluate how perceptions of instructor responsiveness impact these student outcomes.

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EXPLORATORY STUDY IN HOW PROFESSIONALISM IS EXPLICATED IN UNDERGRADUATE DEGREES IN A HEALTH SCIENCES COLLEGE

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ABSTRACT

Professionalism in the health professions is an increasingly important characteristic given the rise of consumerism, higher demand of accountability for patient and population health outcomes, and the expanding number of health professions with concomitant specialization. Efforts to define professionalism or to achieve a consensus to teach, judge, or operationalize professionalism for pre-licensure programs are surprisingly elusive. An important and reasonable expectation of health profession program leaders is that they explicate a definition, the characteristics thereof, and the importance of professionalism in their major academic documents. PURPOSE: This study was conducted to learn how the undergraduate degree programs in a health professions college in a U.S. university had explicated professionalism via a review of select academic documents. METHOD: The study selected and analyzed documents at the university, college, and degree program levels. These included statements of university-wide student learning priorities, the health professions college's mission statement and strategic plan, the overall health profession degree programs' student outcomes goals, student program handbook, and description of core courses for the major. RESULTS: It was evident at all levels of documentation that students are expected to be joining a profession after graduation. They should understand that their academic formation is preparation beyond gaining content knowledge, securing a job, or entering a profession to that of becoming a "professional." All documents expressed the importance of being professional. This expression of professional importance becomes increasingly evident as we moved from the university and college level documents to the departmental and program level documents, such as student handbooks and course descriptions. An additional major finding was that the three domains for explicating professionalism were weakest at the university and college level and more robust at the degree program level. It was surprising that the university's major student learning priority "Professional Practice" did little to define or explain the characteristics of professionalism. The college's actual mission statement and strategic plan said little about professionalism. Defining and giving clear examples of how professionals "behave" was not consistent (in nature or extent) across programs. RECOMMENDATIONS: Academic administrators at all levels of a university, especially those within health professions, should routinely examine major academic documents to ensure that professionalism is well articulated and given its due importance.

INTRODUCTION

Professionalism in the health professions is an increasingly important characteristic given the rise of consumerism, higher demand of accountability for patient and population health outcomes, and the expanding number of health professions with concomitant specialization. There is no innate sense or natural acquisition of professionalism. It is a

characteristic developed in the overall education, training, and socialization of a health professional. Professionalism is a characteristic of significant importance to all health professions worldwide (Frank, J.R., 2005; Royal College of Physicians, 2005; American Board of Internal Medicine, 2001; Association of American Medical Colleges, 1999). However, efforts to define professionalism or to achieve a consensus to teach, judge, or operationalize professionalism for pre-licensure programs are surprisingly elusive (Mossop, L.H., & Cobb, K., 2013; Thampy, H., Gwynne, C., Foulke, R., Codd, R., & Burling, S. 2012).

Some health professions view professionalism as fundamental to their competencies or technical standards. Some, but not all, have professionalism explicitly stated in their codes of ethics. Some health professions describe professionalism as a set of principles; others see it as a set of values or traits. Some explain professionalism along the lines of explicit behaviors. Some health professionals and educators view professionalism as a "soft skill" and something best left to the "hidden curriculum" for students or left to the eventual maturation of the professional (Jackson, P., 1990).

Arnold undertook a review of 30 years of peer-reviewed literature, conference proceedings, bibliographies, and reference lists about medical professionalism and identified several central values such as altruism, accountability, excellence, duty and advocacy service, honor, integrity, respect for others, and ethical and moral standards (Arnold, L., 2012). The American Association of the Colleges of Nursing in "The essentials of Baccalaureate education for professional nursing practice Professionalism" defines professionalism as "the consistent demonstration of core values evidenced by nurses working with other professionals to achieve optimal health and wellness outcomes in patients families and communities by wisely applying principles of altruism, excellence, caring ethics respect communication and accountability" (AACN, 2009). The American Dietetic Association's *Code of Ethics* have principles that reflect the following professional behaviors: honesty/integrity, responsibility and accountability, self-improvement, self-awareness/ knowledge limits, collaboration, respect for others, and compassion/empathy (Fornari, A., 2014). In the field of health services administration, the Healthcare Leadership Alliance a consortium of six leading professional health care administration associations defines professionalism competency as "the ability to align personal and organizational conduct with ethical and professional standards that include a responsibility to the patient and community, a service orientation, and a commitment to lifelong learning and improvement" (Garman, A.N., Evans, R., Krause, M.K., & Anfossi, J., 2006). After extensive research on the subject in this field, the Alliance identified 18 major components organized around four domains: (1) understanding professional roles and norms; (2) working with others; (3) managing oneself; and (4) contributing [to the profession and health services field].

Leaders in the health professions have developed ways to instill professionalism in their association members and suggest doing so during a student's academic formation and clinical training. Expectation exists not only after formal and legal entrée into the field; it also exists during a student's academic formation. It is important to recognize that universities, colleges, and academic programs promulgate a large body of policies and procedures, standards, and expectations for students. Such expectations are drawn from a number of *authorities* including governmental regulations, university policies and procedures, and college level policies and procedures. For the health professions, there are also standards and codes of ethics adding further pressure to students' academic learning priorities.

It is increasingly incumbent upon health profession degree programs to be *explicit* about expectations for professionalism in practice now and in the future (Cruess, S.R., Johnston, S., & Cruess, R.L., 2002). Teaching professionalism in the health professions is shifting *from* a "nice to know" soft skill often left to the vagaries of faculty and clinical

instructors to a planned, formally implemented, and ideally evaluated competency. An important and reasonable expectation is that health profession degree programs *explicate* a definition, characteristics thereof, and the importance of professionalism in their major academic documents.

PURPOSE

This descriptive study was undertaken to learn how the undergraduate degree programs in a health professions college in a U.S. university had *explicated professionalism* via a review of academic documents. More specifically, the study aimed to learn how professionalism had been (1) defined, (2) given characteristics and examples thereof, and (3) was shown as important for future career development during the students' course of study in a health profession major. The study selected and analyzed documents at the university, college, and degree program levels. These included statements of university-wide student learning priorities, the health professions college's mission statement and strategic plan, the overall health profession degree programs' student outcomes goals, student program handbook, and description of core courses students are required to complete for the major.

Results from this exploratory research should prompt academic administrators and faculty to consider the nature and extent of their communications on professionalism, specifically as presented in their major academic print materials. Exploration of these print materials has served as a first step toward reinforcing the importance of professionalism for health care students and teaching professionalism competencies in an undergraduate curriculum. The absence of this explicit documentation would suggest a potential gap between student expectations to be prepared to function in a professional community and guidance for their professional behavior.

METHOD

As an exploratory study, this research made no assumptions about the specific language of professionalism beyond a general understanding of the characteristics or behavior frequently mentioned and discussed among health professions faculty members. Neither did the study assume a typical level of explication as the most appropriate for academic inclusion. Rather, the study aimed to learn how six undergraduate degree programs in a health professions college explicated professionalism for their students. The study closely examined documents, each available in electronic format, in which one would expect to find professionalism addressed. In these documents, it would be reasonable to expect that professionalism was explicated when it addressed the following three variables: 1) clear and direct definitions of professionalism; 2) characteristics and examples of professional and nonprofessional behavior; or 3) its relevance to future practice, legal and moral importance. The study did not consider simple mentions of "being a professional" or "being in a profession" without some context of the three domains mentioned above as explicating professionalism. The documents used to explore the explication of professionalism included:

1. The current set of university student learning priorities;
2. The current health profession college's mission statement and 2012-2017 strategic plan;
3. Overall health professions major's current (2014) goals in the six undergraduate degree programs offered in this health professions college behavior health counseling (BHC), health sciences (HSCI), health services administration (HSAD), nursing (NURS), nutrition science (NUT), and radiologic technology (RAD);
4. Current description of the required courses for each degree program's major (excluding general education
5. Requirements); and the 2013/14 student handbooks for the six undergraduate programs

The data collection and analysis moved from university-wide to program-specific level documents. The authors made the distinction between standard knowledge, skills, and competencies as a given for professional behavior, while accepting that some programs may include professionalism as part of its competencies or technical standards. The authors assumed that gaining appropriate knowledge, skills, and competencies is *de facto* acting professionally.

The study's investigators reviewed the array of documents independently of one another. Their review followed their in-depth discussions to assure alignment of interpretive reliability. Those prospective discussions considered criteria to notate which was either precise (professionalism, professional, profession) and served as proxy narratives of professionalism (integrity, responsibility, ethics, conduct, punctuality, respect, etc.) Each document or set of documents was carefully reviewed in the following ways. First a word search was made of the term "professionalism" or "professional." These sections of the documents were read in context to identify any use of the term in the three domains mentioned above: a) definition, b) characteristics, or c) sense of importance. Second the document was carefully read *in toto* to identify words, phrases, or a context for the characteristics of professionalism. In other words, the study considered words and meanings beyond the label "professional" or "professionalism." Often this involved communicating an action or behavior as normatively professional or unprofessional. Expecting that the students learn, for example, ethical reasoning or practice ethical behavior or not act in ways that are unbecoming of a healthcare professional would fit the criteria of words that had meaning related to professional behavior.

RESULTS

This descriptive study was expected to reveal the nature and, extent to which professionalism was explicated for the students in six degree programs offered at the college. The study documented the *nature* of how professionalism was explicated. No quantitative metric was employed in the study to presume any normative level of explication.

Explication of professionalism in the University's Student Learning Priorities

The student learning priorities were aligned with the university's mission and strategic plan, which captured knowledge areas, competencies, and skills considered central to the students' broad education as experienced through the university's faculty, other students, administrators, and internships. In addition to demonstrating competency in their fields of study, students graduating from this university are expected to demonstrate meaningful progress in six *core intellectual and practical skill areas* and five *experiential and applied learning areas* which included "Professional Practice." By "professional practice," the documents described the expectations that students are to "*apply knowledge and skills gained from a program of study to the achievement of goals in a work, clinical, or other professional setting.*" The university's rationale for this experiential and applied learning area is specified as a belief that theory and learning are reinforced through the practical application of studies in a real world professional environment under the mentorship of experienced professionals in a student's chosen field of study. The supporting document for this student learning priority listed a set of learning outcomes:

1. Function on multi-disciplinary teams;
2. Demonstrate professional and ethical responsibility;
3. Recognize and adhere to a standard of professional conduct;
4. Demonstrate analytical and problem solving skills;
5. Develop effective oral and written communication;

6. Apply knowledge gained in the classroom through project design and management; and
7. Demonstrate self-reflection and self-awareness.

While the supporting document for this learning priority did not use the term "professionalism" or explain in detail the several characteristics of acting professionally, the language is clear that students should "recognize" characteristics of professionalism, "demonstrate" professional behavior, act "ethically" and "responsibly," and practice "self-awareness and reflection." The document annotated resources that spoke to the value of internships with classroom education and references are given to several accrediting bodies that reinforce students' need for an understanding of professional responsibility. However, the supporting narrative about the learning priorities did not define professionalism nor did it expand on its characteristics. That is, while this learning priority spoke to the importance of developing professional behavior, it gave the student little information about what would constitute good or poor professional behavior.

A review of the ten other learning priorities found that "professionalism" or references to the appropriate actions as a professional were nominally mentioned in the learning priority on "Ethics" and "Self-Directed Learning." A close reading of the supporting documents found little evidence of ways in which people should act professionally or not. The supporting document on "Leadership" had no references to professional or professionalism or language that would otherwise suggest professional behavior.

Explication of professionalism in the College's mission statement and strategic plan

The college's mission statement specified its commitment to prepare *"competent and compassionate health professionals through technology-infused and evidence-based programs. The College is committed to leading the way in improving health and reducing health disparities through innovative education, interdisciplinary research, and community-based practice initiatives."* While the mission statement did not show a strong element of "professionalism," the phrase preparing "*competent and compassionate*" graduates seemed to be the closest characteristics of professionalism.

The college's strategic plan had a preamble that listed its accomplishments for the past ten years. The tenth accomplishment noted that the college "*engaged in innovative inter-professional education and interdisciplinary research*." The plan outlined goals and metrics for aligning the college with the university's strategic planning process. The six goals of this plan were to: 1) foster academic excellence; 2) intensify and improve student experience; 3) enhance global impact; 4) contribute to the institution's innovation; 5) expand civic engagement to improve the city; and 6) grow enrollment by 2,000 students. There appeared to be no evidence among these six goals for the college's education or experience about developing professionalism in its students.

A word search of the college's strategic plan found five uses of the word "professional(s)." However, no occurrence was used in the context of students' developing professional behavior or abiding by professional behavior. The word was used in the context of a student being part of or soon joining one of the health professions. Furthermore, a word search found no occurrences of the word "professionalism."

A full and in-depth reading of the college's strategic plan found no evidence of a goal, objective, tactic, or other activity to explicate or develop professionalism among its students, faculty, or staff. Several key action words were searched and reviewed that would naturally align with professional development activity such as develop, cultivate, enhance, improve, grow, align, increase, add, and establish. There was no mention of professionalism related to curriculum or student outcomes. Faculty and staff development were mentioned several times; however, there was no mention of professionalism as a focus, content, or outcome, and student development did not appear in the plan.

Explication of professionalism in degree program student outcomes

A review of the six degree programs in this health professions college that used the terms Professional(s), Professions, and Professionalism in any context had twelve appearances among the six programs' fifty-seven outcomes (21%). These appeared at least once in each degree program. The term professionalism did not appear in any of these six degree programs. In the context of "acting professionally," there was one student learner outcome statement for each of the degree programs. These included:

1. Integrate professional standards (NURS);
2. Guide professional behavior (HSAD);
3. Enhance professional growth (HSCI);
4. Exhibit professional attitudes and values (NUT);
5. Recognize significance of professional growth (RAD Tech); and
6. Adhere to the standards of the APA style for professional writing (BHC).

The NUT degree program seemed to have the strongest statement: "*Exhibit Professional attitudes and values*." Overall, no outcome gave the student a sense of the characteristics of professionalism. There were nominal references to the "professional" and the "professions," and language was used that expected students to develop as a professional; however, little more was given to define professional behavior and expectations with any level of specificity. Assuming that "ethical behavior" is a strong characteristic, it was mentioned once for HSAD and once for NURS; however, BHC, HSCI, NUT, and RAD were void of expectations about understanding ethics in their program student outcomes. Assuming that professionalism aspires to "leadership," professionalism was mentioned once in each of the NURS, HSAD, and HSCI degree program statements. NURS had three references to "*professional practice*." BHC noted "*professional writing*." HSCI mentioned "*professional growth*."

Overall, a review of the fifty-seven student learner outcomes for these six undergraduate programs found that the term "professionalism" did not appear. References were made to being a professional, joining the professions, professional practice, and in some programs expecting to act professionally; however, there was little explanation or detail given on the characteristics of acting professionally however defined. When one assumes that "ethical behavior" is critical to acting professionally, it was mentioned in two of the six programs. Similarly "leadership" was mentioned in three of the six programs. NURS had the most references to the concept of professional and professionalism with little detail given as to what this meant.

Explication of professionalism in degree program student handbooks BHC student handbook explications.

The BHC student handbook made several direct references to the importance of professionalism for those in this field and gave students specific actions to take and avoid during their academic formation. While the handbook had only one reference to "professionalism," it had many references to "the professional" [that students aspire to become], and furthermore, the word "professional" was accompanied by expectations of "behavior." The BHS handbook iterated that students would act professionally in their academic formation as this is what would be expected when they practiced in the field. For example, specificity to professional behavior was listed as:

1. Self-Assessment, self-correction, and self-direction;
2. Representing the profession well;
3. Being responsible by fulfilling commitments;
4. Being accountable for one's actions;

5. Value respect, integrity, intellectual honesty;
6. Being competent;
7. Comfortable in one's role;
8. Writing proficiently;
9. Being courteous;
10. Being punctual; and
11. Abiding by a sundry of rules in the classroom giving clear direction in what is unprofessional behavior in an academic setting.

The student handbook had a specific section on "professional behavior" as part of two main sections in its program outcomes. Professional behavior was addressed in several other sections of the handbook such as the program's mission statement, faculty mentoring, student competencies, attendance policy, classroom behavior, portfolio development, internship education, writing, and drug/alcohol policy.

HSCI student handbook explications

A search in the HCSI student handbook found one reference to professionalism. This was in the course description for an ethics course taught in the HSAD program. The course description read: "*This course addresses introductory concepts and basic issues in health-care ethics. The topics include but are not limited to decision-making, professionalism and advocacy, confidentiality, truth-telling and informed consent.*"

A search for the word "professional" found over a dozen uses in the HSCI student handbook. Several were not related to actions or behaviors of a health professional or expectations of the health professional, but rather on working with health professionals, being a health professional, or working in the health professions.

The HSCI student handbook communicated appropriate conduct on being a health professional in several sections of the handbook. Some sections gave significant treatment to actions to consider or avoid in the academic formation of a health professional. Communications on appropriate professional behavior were covered in the sections on program outcomes, class attendance, and communication with faculty, including etiquette for electronic communications. A separate and detailed section was included in this student handbook on the definition and importance of student civility and incivility with examples provided and a clear statement that incivility is considered unprofessional behavior. Specificity to professional behavior in this handbook included:

1. Openness and respect for students, staff, faculty, community partners and other health professionals;
2. Enhance growth via continuing education;
3. Reporting unethical behavior of students, faculty, and staff;
4. Students' professional preparation is ethically based;
5. Importance of good attendance and punctuality in class;
6. Etiquette for electronic communications; and
7. Acting with civility.

HSAD student handbook explications

A word search for "professionalism" in the HSAD student handbook found one use of the term in describing a required course in health care ethics. A word search for "professional(s)" found under ten uses. As with the other five degree programs, the term was used in the context of "a professional" [person], that is, one who is a professional or is part of the healthcare professions. There were several uses of the term which gave direct advice on professionalism. These were in the context of

1. The college leadership would be transparent and open to students to foster a professional atmosphere.
2. Two program outcomes spoke of "professional behavior" and identified "good leadership."
3. The college would aim to provide "ethically-based professional preparation."
4. "Attending classes" and "not being tardy" were defined as part of pre-professional training.
5. Students in the college would be held to "high standards of behavior."
6. Students were expected to communicate via email in a professional manner.
7. Students were expected to address faculty and administrators in a professional manner.

NURS student handbook explication

A word search for "professionalism" in the NURS student handbook found only a few uses; however, a word search for "professional" found scores of occurrences. While a few were used in the context of "a professional" [person] or one who is a professional, the other uses of the term "professional" clearly related to students' learning to act professionally. The context included the following:

1. A nurse is part of a profession.
2. The nursing profession is challenging.
3. Nursing education prepares one to be part of a profession.
4. The nursing profession has clear and defined professional standards.
5. The nursing profession has a code of conduct.
6. Professionalism is part of the BSN program's technical standards.
7. When communicating in an academic environment or workplace setting, one should communicate professionally and avoid unprofessional communication (examples were given).
8. The program fosters professional integrity.
9. There is a professional scope of practice.
10. Academic dishonesty is a sign of unprofessional behavior.
11. Lateness for class and clinical is unprofessional behavior.

The NURS student handbook had a detailed section on a Student Nursing Code of Conduct that provided the students and faculty of the college "*guidelines for professional conduct in the classroom, clinical setting, and online classes and communications.*" This Student Nursing Code gave notice and defined the minimum standards of conduct that would be expected of NURS students. The document clearly explicated the civil, ethical, and respectful behaviors expected of all nursing professionals.

NUT student handbook explications

A word search for "professionalism" found no uses in the NUT student handbook. A word search for "professional" found thirty occurrences. As mentioned for other degree programs, about a third of these were used in the context of "a professional" [person] or one who is a professional and not in the context of acting professionally. The other uses of the term "professional" clearly related to the students' learning to act professionally. The context included the following.

1. The mission statement stated that these students would integrate "professional values (such as ethics)."
2. A program goal was stated that students would gain "professional values" as specified by an accrediting council.
3. Students needed to "exhibit professional attitudes and values" to meet the curriculum's learning outcomes.
4. The internship coordinators aimed to educate students about "job search, professional ethics, contemporary workplace issues, and professional development."
5. Students were to be instructed on appropriate "web etiquette" and "netiquette."
6. Students were to be instructed on appropriate classroom etiquette to reflect "professional standards."

7. The handbook communicated "Professional Practice Expectations: beliefs, values, attitudes and behaviors for the professional dietitian level of practice."
8. One of the learning outcomes specified that students would be "able to demonstrate effective and professional oral and written communication and documentation."
9. Students were to be exposed to the "Standards of Professional Performance and the Code of Ethics for the Profession of Dietetics."

RAD student handbook explications

A word search for "professionalism" in the RAD student handbook found two occurrences and both were strong statements on this goal for the student. The student handbook informed students that their professional association would impose "*high standards of conduct and principles of professionalism upon its members*." Students must "*present an appearance and demeanor that communicates professionalism and competence*."

A word search for "professional" found eighty occurrences. Most were quite relevant to guiding students' appropriate professional behavior. The handbook had a three page section on professional conduct expectations which included standards of ethics, code of ethics, rules of ethics, and a detailed expectation of professional conduct. One section stated that students would "*observe, practice, and demonstrate learning and growth in professional conduct by*;" the section then listed ten actions on professional conduct such as ability to work with others, accepting constructive criticism, demonstrating ethical conduct, demonstrating dependability and responsibility, and presenting an appearance and demeanor that communicates professionalism and competence. The handbook was replete with references to "professional" behavior in the following context:

1. This health practice field has high professional standards.
2. Being part of a professional organization is important as a beginning professional.
3. Learning to communicate properly is part of professional development.
4. Community service is an expectation of a healthcare professional.
5. Professional conduct is consistent with delivery of humanistic, moral and ethical patient care.
6. Students must maintain professional conduct to remain in the program.
7. Lateness is unprofessional behavior.
8. Professionalism is part of a healthy healthcare environment.
9. Students must present a professional demeanor in the classroom and at clinical.

Explication of Professionalism in Degree Program Core Course Descriptions BHC core course explications

Of the thirty-three courses listed with the BHC rubric, one had a major emphasis on professionalism: Ethics and Professional Responsibility. The course description read: "*This course discusses the philosophical, legal and moral responsibilities of professionals in behavioral health and human services setting with a strong emphasis on counseling relationships. A wide array of ethical issues were presented and discussed. Moral dilemmas comprised of competing moral obligations were examined*." Another course mentioned the "role of professional counselor." Three courses mentioned "ethical issues" and barriers in the field.

HSCI core course explications

Of the fifteen courses with a rubric of Health Sciences, none of the course descriptions mentioned professionalism. Furthermore, there were no mentions of the term ethics. Two courses did address the identification and prevention of scientific misconduct. Students were also required to take a course on healthcare ethics which included the topic "professionalism."

HSAD core course explications

This undergraduate degree program, which includes forty-two courses, had strong evidence of explicating professionalism to its students. The program required two ethics courses one in introductory to health care ethics and another in managerial ethics. As expected, the managerial ethics course discussed how ethical reviews and making ethical decisions are fundamental to "professional practice." The introduction to healthcare ethics course focused on professionalism. The students were expected to take a full course in "leadership" which clearly explained that leaders always needed to be professional in their work. It explained characteristics of good leaders, successful behaviors, and the expectation that health care leaders would be professional. Courses also addressed the issue of the importance of understanding diversity in the profession. A management course aimed to have students "Recognize effective characteristics within and to be developed by a healthcare leader to be successful in his/her job."

NURS core course explications

One course in the titles and course descriptions of the program used the term "professionalism." The course NURS 104 Ethics, Advocacy and Professionalism in Nursing focused on "the practical application of redefining nursing, healthcare and medication errors, medication diversion, and end of life issues. These concepts will be introduced and examined as they relate to the student's professional growth." Students were required to take an introductory ethics course or a healthcare ethics course. About a third of the course descriptions in the forty-two total with a nursing rubric used the term "professional nurse's role" conveying a strong sense that nursing is a profession, and students were expected to develop and practice nursing in a certain way. While most explained this as it related to being a clinically competent nurse, there were several strong statements that the professional nurse had a responsibility to work ethically and professionally for the betterment of the patients and the communities they served. In one of the final courses in the nursing curriculum "Synthesis of Nursing Knowledge," students would learn the "skills needed for effective interpersonal communication and professional behaviors of the nurse." While students were expected to take a single course in ethics, several courses emphasized that students needed to identify and examine ethical issues and act ethically. Several courses used the terms "legal, ethical, and professional decision making *framework*" demonstrating that ethical and professional decision making are important competencies in nursing education.

NUT core course explications

Of the thirty-five courses in this degree program, only two mentioned a characteristic of professionalism. No course used the word professionalism. One course, Professional Issues in Nutrition and Foods, specified that it would introduce "professional issues in dietetics, food science, and nutrition science; and covered issues affecting current and future practice, and resources available to professionals in these fields;" however, it did not give more specificity to professionalism. The seminar course stated that it "Reviews, evaluates, and synthesizes contemporary professional issues in dietetics." There were several courses that would be a natural fit to cover professionalism such as "Institutional Organization and Administration" and community nutrition and research courses. Students were not specifically required to take a course in ethics.

RAD core course explications

Of the thirty course descriptions in this degree program, only one had wording related to a student's formation as a professional. Professionalism is not mentioned per se, however the "Introduction to Radiologic Technology" course indicated that it aimed to "provide a

fundamental background in ethics and have the students examine a variety of ethical issues and dilemmas found in clinical practice." Students were also expected to discuss misconduct and the ASRT scope of practice. Students were not required to take a course in ethics.

CONCLUTIONS

The purpose of this descriptive study was to learn how students in six undergraduate degree programs offered in a university's health professions college *explicated professionalism* via a review of academic documents within which one would have expected to find professionalism: a) defined; b) characteristics explained; and c) importance emphasized for students. Documents reviewed ranged from the university to the academic program level to survey the widest possibilities for student exposure to developing professionalism.

One finding that was evident and strong at all levels of documentation explicated that students would be expected to be *joining a profession* after graduation. They should understand that their professional formation is preparation beyond gaining content knowledge, securing a job, or entering a profession to become a "professional."

We distinguished what it meant to be a professional and acting professionally as not simply gaining knowledge, skills, and competencies; rather, it is *behaving* in a way that is professional (ethically, responsibly, respectfully, etc.) and holding to professional values. Thus it is reasonable to expect that these documents would have: a) defined professional behavior; b) explained characteristics of professional behavioral, and/or c) emphasized the importance of professional behavior.

A second major finding was that all documents expressed at some level the importance of being professional. This becomes increasingly intense as we moved from the university and college level documents to those within student handbooks and program course descriptions.

A third major finding was that the three domains (definition, characteristics, importance) for explicating professionalism were weakest at the university and college level and more robust at the degree program level. This made sense, as the degree program documents were numerous, and one would have expected them to give more detail on professionalism. However, it was surprising that the university's major student learning priority "Professional Practice" did little to define or explain the characteristics of professionalism. The learning priority was presented as traditional knowledge acquisition and job practice rather than learned behaviors in a profession; thus, it was not a strong explication of professionalism for students. It was noted that the college's mission statement and strategic plan was limited in its focus on professionalism. There was no language used in the context of students' developing professional behavior or abiding by professional behavior. One could argue that since the importance of professionalism is pervasive, its substance is presumed. Another possibility is that faculty and academic leaders have left this to the hidden curriculum. However, the point of academic formation is to build what may not be there. Little direction is given to the students in this important document. The college authorities could not easily make a recommendation to university authorities, given that the college's own strategic plan was void of addressing professionalism in any of the three domains discussed in the study.

Much improvement could be made in the overall student outcomes for these six degree programs. In measuring the language against the three domains, they were strongest in alluding to the importance of professionalism; however, they did little to define or explicate the characteristics. The NUT program served as a good example, as one of its degree outcomes was that students should "exhibit professional attitudes and values."

Certainly the course descriptions for required courses in the major should show strong evidence of professionalism along the three domains. While these course descriptions were limited in length, one would expect this important learning outcome to get some visibility among the fifteen to forty courses offered in an undergraduate degree in a health professions college. *First*, it is important to note that all but one of the six programs required a course in ethics which was expected to help the student build a "professional decision making framework." *Second*, three of the six programs had a course with the term "professional" or "professionalism" in it. One would have expected that each health profession degree program would have had at least one course for which professionalism was a main focus and evidenced in the title. *Third*, in looking at all course descriptions for these six programs, it is fair to say that they communicated the importance of being in a profession and being professional; however, they did little to define or explicate the characteristics of professionalism. This explication may be evident in student learner objectives on each of the course syllabi (review of these was beyond the scope of this study). Nevertheless, course descriptions are a high level communiqué in any curriculum and deserve attention in this area to balance the importance of this character for students in their academic formation.

Student handbooks naturally gave detailed treatment to expectations of students, as did the stated standard policies and procedures. The six majors in this study each had strong articulation across all three domains of professionalism. Characteristics of professionalism, the second domain, was stronger that the other two domains of definition and importance. Students were given explicit examples of what is professional and what is unprofessional behavior. These covered the range of interactions students would have with faculty in the teaching/learning process, with student peer interaction, and student placement in clinical settings and in internships. Two majors (NURS and HCSI) had an impressive definition of civility. No document in this review had an emphatic definition of professionalism; however, the following definition of civility was clear and certainly a characteristic of professionalism.

Civility has to do with courtesy, politeness, and good manners. Civility is the awareness and recognition of others in all interactions and demonstration of a high level of respect and consideration. In civility, we recognize that no action of ours is without consequence to others or ourselves. We need to anticipate what these consequences will be and choose to act in a responsible and caring way (CNHP, 2008).

Conversely the handbook had provided an explanation of "uncivil" behavior. It would seem pertinent for this definitional language to be used in all programs. One suggestion for improvement, for example, would be to have the language in the student handbooks inform the "higher level" documents. Academic administrators could simply review the language and ensure that it is used throughout the other documents for consistency and continuity an inductive influence on these documents.

RECOMMENDATIONS

Results from this exploratory study should prompt academic administrators at all levels of a university, especially those within health professions, to closely examine major academic documents to ensure that professionalism is well articulated for its importance. It could prove useful for universities and colleges to identify gaps in the nature and extent of how professionalism is explicated in their public and internal publications. It is important to be aware of the many types of academic documents that could be used as a vehicle to more fully explicate professionalism and to provide meaning in relation to expanded academic and professional education expectations for both prospective and current students.

The results bring to mind why all the health professions majors do not have a common understanding and agreement on the language used to explicate professionalism. In

other words, there was no evidence that these six undergraduate degree programs used similar language. Were that to be the case, the authorities in these degree programs could communicate to the authorities of their health professions college speaking with one consistent voice on this important area of student formation in a profession. McNair argued that the time has come to teach professionalism as part of inter-professional education (McNari, R.P., 2005). Academic leaders should be able to draw up a document espousing one definition, normative professionalism characteristics, and the overarching importance of professionalism that is used in all student handbooks. They could easily recognize the variance in standards and codes of ethics and obviously context in the scope of practice; however, a common and consistent declaration of what the faculty holds as professional behavior could be powerful.

To intensify the point above, a health professions college could require that all undergraduate students take a single interdisciplinary survey course together that would introduce them to the health professions and include a strong education component on professionalism. Some colleges may already be doing this at some level. The results of this study have shown that some degree programs had a single course with professionalism in the title. It would seem pertinent and critical for all of the college's degree programs to have a course that would require all of its students be introduced to concepts of professionalism. If the college cannot require or coordinate mixing the students across degree programs, then at a minimum the faculty in each degree program should re-evaluate the program's curriculum to ensure that a strong professionalism education component is integrated into at least one course.

After a careful review of documents, academic leaders should ask if a hidden curriculum that demonstrates the concept of professionalism exists among the faculty. Furthermore, academic leaders could ask if there is consistency and a high level of intensity for professionalism throughout all levels of the university. While some may not find value in formalizing professionalism in the curriculum, there are others who may consider it a soft skill and, even if defined, may be difficult to assess. Having worked through this study, the authors find that professionalism is not merely a "soft skill" at all, rather it is one of the most challenging components of a student's formation in a health profession. Leaders in the health professions educational arena should seek out those opportunities (e.g., strategic plans, lead academic statements, student learning priorities, core curriculum) to instill messages about professionalism.

STUDY LIMITATIONS

The authors recognize that a review of academic documents does not measure actual practice or effectiveness of instilling professionalism in health profession students. Some programs may not explicate professionalism in their documents and may in action be introducing important concepts to students, as in the presentation of role modeling. Conversely some programs may explicate professionalism in their documents, yet may give cursory treatment to the subject. This is a descriptive study and a first step in improving the role of professionalism as it is presented in a health professions college. The authors found a review of learner objectives in each course to be beyond the scope of the study and have recognized that it could be a next level of evaluation for review, as would surveys and/or focus groups with students and faculty to discuss the topic of professionalism. The authors chose to keep the study at a high level of explication. Further, they have recognized that not all would agree that knowledge, skills, and competency obtainment is a *de facto* given for professionalism, and some may not choose to focus on language related to these components of a student's formation.

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A COMPARISON OF TEACHER JOB SATISFACTION IN PUBLIC AND PRIVATE SCHOOLS

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ABSTRACT

The purpose of this study is to compare teacher job satisfaction in public and private schools. Using a large sample of both public and private school teachers from the year 2007, the results of this study suggest that private school teachers are much more satisfied with their jobs than are public school teachers. In addition, female elementary school teachers who work in schools that do not have many minority teachers are more satisfied with their jobs than are other teachers. Finally, merit pay is found to have a significant and negative effect on teacher job satisfaction, especially when using a two-stage analysis. This study is one of the few studies that examines the determinants of job satisfaction for both public and private school teachers.

INTRODUCTION

Teachers have come under much criticism recently for a number of issues, including generous pensions, enviable work schedules, and tenure. Combine that with greater demands for assessment and calls for more teacher accountability and it is reasonable to assume that most teachers would be dissatisfied with their jobs. It is important to note, however, that most of the above issues only affect public school teachers; private school teachers do not have generous state-funded pensions nor are they required to partake in state-mandated assessments for their students. Hence, it is reasonable to assume that job satisfaction should be higher among private school teachers than among public school teachers. Interestingly, however, very little research has been conducted on comparing the job satisfaction levels of public school teachers to the satisfaction levels of private school teachers. Most prior research in this area had as their focus teacher job satisfaction in public school settings (Gius, 2013; Moore, 2012; Belfield and Heywood, 2008; Liu and Ramsey, 2008; and Chapman and Lowther, 1982). This lack of research on private school teachers is unfortunate, especially given that, according to the Council for American Private Education, ten percent of all students (pre-K through 12th grade) attend private schools. Hence, not only did prior research ignore a potentially interesting and worthwhile comparison between public and private school teachers, but this research has also ignored a sizable minority of students and their teachers.

The present study attempts to rectify that situation and compares the job satisfaction of public school teachers to private school teachers. Using a large sample of teachers from the year 2007, the results of the this study suggest that teachers who work in public schools are much less satisfied with their jobs than are private school teachers; this result is even more striking given that private school teachers earn, on average, 31 percent less than public school teachers. Other noteworthy results are that female elementary school teachers who work in schools that do not offer merit pay and that do not have large percentages of minority teachers were in general more happy with their jobs than other teachers.

This article is organized as follows. Section II presents a review of the relevant prior literature on teacher job satisfaction. Section III describes the empirical model and the data used. Section IV presents the results of various statistical techniques, and section V discusses conclusions that can be derived from these results.

LITERATURE REVIEW

One of the earliest studies conducted on teacher job satisfaction was Chapman and Lowther (1982). Using a survey of 542 University of Michigan graduates who went on to become teachers, job satisfaction was defined as satisfaction with their current employer or satisfaction with their professional development. Two of the primary results of this study were that female teachers had greater job satisfaction than male teachers and recognition received from supervisors contributed to positive job satisfaction.

Liu and Ramsey (2008) looked at data from the Schools and Staffing Survey (SASS) and the Teacher Follow-Up Survey (TFS) for the years 1999-2001 in order to ascertain the factors that may affect teacher job satisfaction. The authors found that teachers, in general, were not satisfied with working conditions and that less experienced minority teachers were less satisfied than other teachers. According to their results, gender also played a role in teacher job satisfaction, although it varied depending upon the type of satisfaction examined.

Belfield and Heywood (2008) used data from SASS for the year 1999 in order to examine teacher job satisfaction. Using an ordered probit analysis, they found that male teachers who were union members and who worked in merit pay schools were less satisfied than other teachers.

Moore (2012) used data from the 2007-2008 SASS data set in order to determine if there was a relationship between school environment and teacher satisfaction. Looking only at public school teachers, the author found that experience and union membership were positively related to teacher job satisfaction, while African-American teachers, teachers in rural schools, and teachers in schools with a greater percentage of minority teachers were less satisfied.

Finally, Gius (2013) looked at the effect of merit pay on public school teacher satisfaction. Using 2007-2008 SASS data, the author found that teachers in merit pay districts were less enthusiastic about their jobs, they did not think teaching was important, and they were more likely to leave for better pay.

The present study differs from the above research in several ways. First, this study will use data from the 2007 SASS. Second, contrary to what all of the prior studies have done, this study will look at both public and private school teachers. Finally, the present study utilizes two different statistical techniques in order to estimate the determinants of job satisfaction for both public and private school teachers.

EMPIRICAL TECHNIQUE AND DATA

Using prior research on teacher job satisfaction and worker satisfaction in general (Gius, 2013; Moore, 2012; Artz, 2010; Bryson, Cappellari, and Lucifora, 2010 and 2004; Garcia-Serrano, 2009; Belfield and Heywood, 2008; Liu and Ramsey, 2008; Gazioglu and Tansel, 2006; Donohue and Heywood, 2004; Hewood, Siebert, and Wei, 2002; Clark, 1997; Gordon and Denisi, 1995; Lillydahl and Singell, 1993; Meng, 1990; Gomez-Mejia and Balkin, 1984; and Chapman and Lowther, 1982), the following model of job satisfaction was constructed using explanatory variables that capture both individual and job-related characteristics:

$$Y_i = \alpha_0 + \alpha_1 \text{ Male} + \alpha_2 \text{ Hispanic} + \alpha_3 \text{ African-American} + \alpha_4 \text{ Asian-American}$$
$$+ \alpha_5 \text{ Enrollment} + \alpha_6 \text{ IEP} + \alpha_7 \text{ LEP} + \alpha_8 \text{ Student-Teacher Ratio} + \alpha_9 \text{ Minority Teachers}$$
$$+ \alpha_{10} \text{ Minority Students} + \alpha_{11} \text{ Experience} + \alpha_{12} \text{ Urban School} + \alpha_{13} \text{ Advanced Degree}$$
$$+ \alpha_{14} \text{ Elementary School} + \alpha_{15} \text{ Merit Pay} + \alpha_{16} \text{ Age} + \alpha_{17} \text{ Public} + \alpha_{18} \text{ Northeast}$$

+ α_{19} Midwest + α_{20} South + α_{21} Union where Y_i denotes various measures of teacher job satisfaction and the explanatory variables are as defined on the descriptive statistics and results tables.

Regarding the merit pay variable, the following survey question from SASS was used to construct this variable:

"Does this district (school) currently use any pay incentives such as cash bonuses, salary increases, or different steps on the salary schedule to reward excellence in teaching?"

Finally, several education-specific explanatory variables are included in order to capture the effects of any institutional-level characteristics on job satisfaction. These variables include student-teacher ratios, the racial composition of the school, if the school is located in an urban area, and school enrollment.

Regarding the dependent variable, this paper uses five different measures of satisfaction that are measured on a four-point scale. The five measures are as follows:

(1) Teacher generally satisfied
(2) Teacher believes teaching is important
(3) Teacher is enthusiastic
(4) Teacher would not leave school for better pay
(5) Teacher would not transfer to other school.

The four possible outcomes are "strongly agree", "somewhat agree", "somewhat disagree", and "strongly disagree." In the data used in this paper, some of the above questions were reverse coded; in order to make the results consistent and easier to understand, the coding on all variables was revised so that "strongly agree" (3) means that the teacher was most satisfied and "strongly disagree" (0) means that the teacher was least satisfied.

In order to determine if multicollinearity was present, correlation coefficients, including phi coefficients and point biserial correlation coefficients, were estimated. Correlations between the various explanatory variables were insignificant; results for these preliminary tests are available upon request.

All data used in the present study was obtained from the Schools and Staffing Survey (SASS) which is compiled by the US Department of Education. The Schools and Staffing Survey is a series of related questionnaires that provide descriptive data on elementary and secondary education in the United States. The SASS system covers a wide range of topics from teacher demand, teacher and principal characteristics, general conditions in schools, principals' and teachers' perceptions of school climate and problems in their schools, teacher compensation, district hiring and retention practices, to basic characteristics of the student population. The 2007 SASS was a mail–based survey, with telephone and field follow–up.

The present study uses data from the 2007 SASS restricted-use data set. The SASS data is compiled only once every five years. At the time that the present study was written, the 2007 data was the most recent year for which the SASS data was available. Only full-time teachers were included in the sample. Any teachers with missing data were excluded. The final sample contains data on about 39,710 teachers, of which 35,350 were public school teachers and 4,360 were private school teachers. Sample sizes were rounded to the nearest ten due to the use of restricted data.

RESULTS

Descriptive statistics are presented on Table 1. These statistics indicate that 93 percent of teachers "strongly agree" or "somewhat agree" with the statement that they were "generally satisfied" with their job. However, 18 percent felt that teaching wasn't worth it, and 37 percent said that they were not very enthusiastic about teaching. Further, 23 percent said that they would leave for better pay, and 28 percent said that they would transfer to another school given the opportunity.

<table>
<tr><td colspan="3" align="center">Table 1
DESCRIPTIVE STATISTICS COMBINED SAMPLE</td></tr>
<tr><td>Variable</td><td>Mean</td><td>Standard Deviation</td></tr>
<tr><td>Teacher is generally satisfied</td><td>2.50</td><td>0.68</td></tr>
<tr><td>Teacher believes teaching is important</td><td>2.28</td><td>0.84</td></tr>
<tr><td>Teacher is enthusiastic</td><td>1.90</td><td>1.031</td></tr>
<tr><td>Teacher would not leave school for better pay</td><td>2.052</td><td>0.974</td></tr>
<tr><td>Teacher would not transfer to other school</td><td>2.15</td><td>0.998</td></tr>
<tr><td>Male</td><td>0.301</td><td>0.458</td></tr>
<tr><td>Hispanic</td><td>0.0418</td><td>0.20</td></tr>
<tr><td>African-American</td><td>0.0611</td><td>0.24</td></tr>
<tr><td>Asian-American</td><td>0.0174</td><td>0.13</td></tr>
<tr><td>School enrollment</td><td>762</td><td>649</td></tr>
<tr><td>Percentage of teacher's students with an IEP</td><td>0.129</td><td>0.209</td></tr>
<tr><td>Percentage of teacher's students who are LEP</td><td>0.042</td><td>0.128</td></tr>
<tr><td>Student-teacher ratio</td><td>14.52</td><td>5.052</td></tr>
<tr><td>Percentages of teachers in school who are of a racial/ethnic</td><td>0.129</td><td>0.216</td></tr>
<tr><td>Percentages of students in school who are of a racial/ethnic</td><td>0.354</td><td>0.335</td></tr>
<tr><td>Teacher's years of experience</td><td>13.8</td><td>10.54</td></tr>
<tr><td>Teacher is union member</td><td>0.643</td><td>0.479</td></tr>
<tr><td>School located in urban area</td><td>0.181</td><td>0.385</td></tr>
<tr><td>Teacher has advanced degree</td><td>0.475</td><td>0.499</td></tr>
<tr><td>Elementary school</td><td>0.353</td><td>0.478</td></tr>
<tr><td>Age of teacher</td><td>42.8</td><td>11.8</td></tr>
<tr><td>District or school uses performance or merit pay</td><td>0.108</td><td>0.125</td></tr>
<tr><td>Public school</td><td>0.89</td><td>0.312</td></tr>
<tr><td>School is located in the Northeast</td><td>0.146</td><td>0.352</td></tr>
<tr><td>School is located in the South</td><td>0.349</td><td>0.476</td></tr>
<tr><td>School is located in the Midwest</td><td>0.27</td><td>0.444</td></tr>
<tr><td colspan="3">n = 39,710</td></tr>
</table>

Given that the satisfaction variables are measured on a four-point scale, an ordered probit analysis was used to estimate the determinants of teacher job satisfaction. Regression results are presented on Tables 2 and 3.

<table>
<tr><td colspan="4" align="center">**Table 2**
ORDERED PROBIT RESULTS COMBINED SAMPLE</td></tr>
<tr><td>Variable</td><td>Generally Satisfied</td><td>Teaching Important</td><td>Enthusiastic</td></tr>
<tr><td>Constant</td><td>2.19
(51.25)***</td><td>2.17
(53.66)***</td><td>1.61
(41.34)***</td></tr>
<tr><td>Male</td><td>-0.033
(-2.45)**</td><td>-0.0529
(-4.09)***</td><td>0.06335
(5.03)***</td></tr>
<tr><td>Hispanic</td><td>0.1528
(4.89)***</td><td>0.01851
(0.63)</td><td>0.143
(4.94)***</td></tr>
</table>

African-American	0.069 (2.49)**	0.03836 (1.45)	0.1168 (4.47)***
Asian-American	0.029 (0.65)	-0.2013 (-4.67)***	0.0712 (1.65)*
School enrollment	-0.000007 (-0.59)	0.000019 (1.77)*	0.0000202 (1.93)*
Percentage of teacher's students with an IEP	-0.00035 (-1.22)	-0.00039 (-1.41)	-0.00023 (-0.87)
Percentage of teacher's students who are LEP	-0.00094 (-1.95)*	-0.00174 (-3.78)***	-0.00028 (-0.62)
Student-teacher ratio	0.00337 (2.41)**	0.00083 (0.63)	-0.0015 (-1.18)
Percentages of teachers in school who are of a	-0.00343 (-9.26)***	-0.00276 (-7.76)***	-0.00185 (-5.29)***
Percentages of students in school who are of a	-0.00257 (-11.14)***	-0.00235 (-10.63)***	-0.00099 (-4.60)***
Teacher's years of experience	0.00238 (2.71)***	-0.00212 (-2.53)**	-0.01494 (-18.49)***
Teacher is union member	-0.03161 (-2.21)**	-0.00526 (-0.39)	-0.01323 (-1.01)
School located in urban area	-0.0248 (-1.58)	-0.0347 (-2.32)**	-0.00525 (-0.36)
Teacher has advanced degree	-0.03502 (-2.81)***	0.0029 (0.24)	-0.03972 (-3.46)***
Elementary school	0.118 (8.15)***	0.1083 (7.88)***	0.06932 (5.24)***
Age of teacher	0.00385 (4.98)***	0.00335 (4.54)***	0.00431 (6.01)***
District or school uses performance or merit pay	-0.03898 (-2.02)**	-0.03726 (-2.03)**	-0.03172 (-1.77)*
Public school	-0.192 (-8.32)***	-0.3329 (-15.04)	-0.32487 (-15.50)***
School is located in the Northeast	-0.0876 (-4.12)***	0.01698 (0.83)	0.14336 (7.24)***
School is located in the South	0.03116 (1.82)*	-0.02106 (-1.30)	-0.03873 (-2.47)***
School is located in the Midwest	-0.06092 (-3.41)***	-0.01089 (-0.64)	0.01506 (0.92)
10 percent level = * 5 percent level = ** 1 percent level = ***			

Table 3 ORDERED PROBIT RESULTS COMBINED SAMPLE		
Variable	Not Leave for	Would Not Transfer
Constant	1.56 (39.94)***	0.932 (23.39)***
Male	-0.148 (-11.79)***	-0.08014 (-6.16)***
Hispanic	-0.116 (-4.05)***	0.139 (4.68)***
African-American	-0.0787 (-3.03)***	0.178 (6.58)***
Asian-American	-0.129 (-3.02)***	0.0918 (2.08)**
School enrollment	0.000039 (3.68)***	0.000059 (5.37)***

Percentage of teacher's students with an IEP	-0.00054 (-2.03)**	-0.00101 (-3.69)***
Percentage of teacher's students who are LEP	-0.00067 (-1.46)	-0.00126 (-2.72)***
Student-teacher ratio	0.0014 (1.09)	0.00462 (3.44)***
Percentages of teachers in school who are of a	-0.0021 (-5.89)***	-0.00255 (-7.11)***
Percentages of students in school who are of a	0.000028 (0.13)	-0.00249 (-11.24)***
Teacher's years of experience	-0.00238 (-2.94)***	0.01102 (12.90)***
Teacher is union member	0.03596 (2.73)***	0.00061 (0.04)
School located in urban area	-0.00284 (-0.19)	0.02033 (1.34)
Teacher has advanced degree	0.00268 (0.23)	-0.08353 (-6.97)***
Elementary school	0.0909 (6.82)***	0.09176 (6.66)***
Age of teacher	0.00287 (4.00)***	0.01197 (16.15)***
District or school uses performance or merit pay	-0.02014 (-1.12)	-0.04622 (-2.50)**
Public school	-0.32214 (-15.25)***	-0.08022 (-3.72)***
School is located in the Northeast	0.14227 (7.11)***	0.02242 (1.10)
School is located in the South	-0.06964 (-4.41)***	0.05889 (3.60)***
School is located in the Midwest	-0.00751 (-0.45)	-0.03931 (-2.30)**
10 percent level = * 5 percent level = ** 1 percent level = ***		

These results indicate that public school teachers are much less satisfied with their jobs than are private school teachers. This results holds true for all five measures of job satisfaction. This evidence supports the hypothesis that private school teachers are more satisfied with their jobs than are public school teachers, holding all else constant. These results are especially interesting given that the average salary for public school teachers in 2007 was $46,289, while the average private school teacher salary was $36,061. Hence, even though private school teachers earned

$10,000 less per year than public school teachers, they were more satisfied than public school teachers for every satisfaction measure examined.

Regarding the other explanatory variables, females, elementary school teachers, teachers in schools that did not use merit pay, and teachers in schools with few minority teachers were more satisfied with their jobs than other teachers. These results were consistent across most of the five measures of satisfaction examined and are consistent with prior research in this area.

The merit pay result is noteworthy because very little prior research has looked at the effects of merit pay in schools, particularly with regards to private school teachers. This is a significant oversight given that 19.2 percent of private schools use merit pay while

only 10.3 percent of public schools use it. The overall merit pay results, in general, contradict the findings of some prior studies. Belfield and Heywood (2008) found that merit pay had no significant effect on teacher satisfaction. Regarding non-teaching merit pay studies, Green and Heywood (2008) found that merit pay does not affect overall worker satisfaction or a worker's satisfaction with their hours. It was, however, positively related to pay, the work itself, and job security. In Heywood and Wei (2006), merit pay had a positive effect on "global job satisfaction" and satisfaction with pay but was not significantly related to worker satisfaction with either their co-workers or with their supervisors.

Given that the present study is one of the few studies that examines the determinants of both public and private teacher job satisfaction, it was felt that this line of research should be further explored. In order to examine the effects of merit pay on private and public school teachers more fully, equation (1) was re-estimated using a private school teacher sample and a public school teacher sample. In these regressions, the public dummy variable was omitted. Results for both samples for the merit pay variable are presented on Table 4. Full results are available upon request.

	Table 4 ORDERED PROBIT RESULTS	
	District or school uses performance or merit pay	
	Public school sample	Private school sample
Teacher is generally satisfied	-0.0484 (-2.31)**	0.01079 (0.21)
Teacher believes teaching is important	-0.0447 (-2.24)**	0.00269 (0.06)
Teacher is enthusiastic	-0.0389 (-1.99)**	-00461 (-0.10)
Teacher would not leave school for better pay	-0.0186 (-0.95)	-0.02019 (-0.44)
Teacher would not transfer to other school	-0.0626 (-3.10)***	0.0189 (0.40)
10 percent level = * 5 percent level = ** 1 percent level = ***		

These results suggest that, when using an ordered probit analysis, private school teachers who work in merit pay schools are no less satisfied with their jobs than are private school teachers who do not work in merit pay schools. However, public school teachers who work in merit pay schools are much less satisfied with their jobs than are public school teachers who do not work in merit pay schools. These results are important because, as noted before, only 10.3 percent of public schools use merit pay, but over 19 percent of private schools do. Therefore, a much greater percentage of private school teachers work in merit pay schools, and yet the effects of merit pay on private school teacher job satisfaction are insignificant.

One potential issue with the above analysis is that some teachers may be more inclined to work in districts or schools that use merit pay. These teachers may have certain attitudes about teaching that may be reflected in their job satisfaction. In order to control for this possible endogeneity and to confirm the results obtained from the ordered probit analysis, a two-stage logistic regression was used to estimate the effects of merit pay on teacher job satisfaction. In this two-stage analysis, it is assumed that merit pay is endogenous.

An important issue in a two stage analysis is the selection of an appropriate instrument

for merit pay. It is necessary that the instrument is exogenous in the estimation of merit pay and is uncorrelated with the error term in the second stage regression. It is assumed in this analysis that a variable denoting the percentage of schools in a state that use merit pay is a reasonable instrument for the estimation of district or school-level merit pay status. This is because it is more likely that a teacher would work in a school that uses merit pay if the there is a greater proportion of schools in a given state that has a merit pay system. It is also unlikely that this instrument is correlated with any measure of teacher job satisfaction. In the first stage of this regression, merit pay is regressed against a series of control variables, including the instrumental variable "percentage of schools in state that use merit pay."

For this technique, all teacher satisfaction variables were re-coded into binary variables so that logistic regressions may be estimated. As noted earlier, all of the satisfaction variables are recorded in SASS as having one of four possible outcomes: "strongly agree", "somewhat agree", "somewhat disagree", and "strongly disagree."These multinomial variables were turned into binary variables by using a value of one if the response was one of the "agree" options and a value of zero if one of the "disagree" options was chosen.

First stage regression results are available upon request. Second stage results are only reported for the merit pay variable; these results are presented on Table 5. Full results are available upon request. For the public sample, the merit pay variable is significant and negative for four of the five satisfaction measures. Only for teacher enthusiasm is merit pay insignificant. For the private school teacher sample, however, the results differ substantially from the ordered probit results. For the two-stage analysis, the merit pay variable is significant and negative for three of the five satisfaction measures: overall satisfaction, importance of teaching, and teacher would not leave for better pay. Hence, these results suggest that merit pay reduces teacher satisfaction for some of the measures examined. It is especially interesting to note that in none of the regressions estimated does merit pay have a significant and positive effect on teacher job satisfaction.

	District or school uses performance or merit pay	
	Public school sample	Private school sample
Teacher is generally satisfied	-0.152 (-1.66)*	-1.10 (-2.16)**
Teacher believes teaching is important	-0.134 (-1.86)*	-1.05 (-2.74)***
Teacher is enthusiastic	-0.05766 (-0.87)	-0.159 (-0.50)
Teacher would not leave school for better pay	-0.166 (-2.46)**	-0.732 (-2.15)**
Teacher would not transfer to other school	-0.254 (-3.69)***	0.03096 (0.10)

Table 5
SECOND STAGE RESULTS TWO-STAGE REGRESSION

Significant at 10 percent level = *
Significant at 5 percent level = ** Significant at 1 percent level = ***

CONCLUDING REMARKS

Private schools are a mainstay of the American educational system. Although they educate about only 10 percent of students (pre-K through 12th grade) in the U.S., they count

among their own the very best schools in the country. In addition to the quality level of these schools, private institutions do not have to contend with a variety of issues now plaguing the public education system, such as declining government support and state-mandated assessment tests.

One area of private education that has not been extensively studied is teacher job satisfaction. Although public school teacher job satisfaction has been examined, it was felt that, given the different constraints under which private schools operate, it may be instructive to examine the factors that affect teacher satisfaction for both public and private schools.

In the present study, data from the 2007 SASS was used to examine the determinants of teacher job satisfaction, focusing particularly on the difference in satisfaction between public and private school teachers. Using an ordered probit analysis, results indicated that public school teachers were less satisfied with their jobs than private school teachers for five different measures of satisfaction. In addition to the distinction between public and private schools, female elementary school teachers who worked in schools that did not use merit pay and that had few minority teachers were happier than other teachers.

One of the above results that was rather intriguing was the effect of merit pay on teacher job satisfaction. Although merit pay systems are becoming more and more prevalent, they are not popular in the education community. Regarding the distinction between public and private schools, 19.2 percent of private schools used merit pay, while only 10.3 percent of public schools do. Prior research has examined the effects of merit pay on student academic performance and other measures of student success. Very few prior studies, however, have looked at the relationship between merit pay and teacher job satisfaction. An ordered probit analysis and a two-stage regression were used to estimate the effects of merit pay on five measures of teacher job satisfaction. Using private and public school teacher samples, the results suggested that merit pay reduces teacher satisfaction or, at best, has no effect on satisfaction. In neither methodology and for neither of the samples examined does merit pay result in more satisfied teachers. Hence, it can be concluded that merit pay does not improve the overall job satisfaction of teachers. This result suggests that schools that impose pay for performance systems may experience greater turnover rates, teacher absenteeism, and less engaged teachers. These behaviors do not contribute positively to the overall learning experience and may result in lowered academic performance and reduced post-graduation prospects for students in merit pay schools. These outcomes would occur regardless of the status (public versus private) of the school. This result is significant, especially given that proponents of merit pay typically claim that private schools have successfully used merit pay systems and that such systems would increase the accountability of public school teachers and result in increased academic performance on the part of students. Although the literature on the effect of merit pay on student academic performance is mixed (Gius, 2012), one byproduct of such a system would be more dissatisfied teachers. Having more dissatisfied teachers and a potentially less experienced faculty does not contribute to increased learning outcomes.

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THE MISUSE OF STUDENT EVALUATIONS OF TEACHING: IMPLICATIONS, SUGGESTIONS AND ALTERNATIVES

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ABSTRACT

A five year longitudinal study of the results from Student Evaluations of Teaching (SETs) was accomplished within the business school of a small southwestern state university. Based upon the findings of the study, the authors argue that prior practices in applying the results of SETs for summative purposes have not been based upon a sound statistical foundation. Results from both instructor samples and populations are compared and indicate that the use of means to measure and compare instructor effectiveness requires assumptions of normality which the data does not meet. The authors maintain that after minimal statistical adjustment, three groups of faculty can be identified in this article titled above average, average and below average. These groups identify faculty that may need further teaching skill development or that should be rewarded for exemplary teaching.

INTRODUCTION

A 2005 essay by Fleet and Peterson highlighted an issue that has been troubling academics for the past 80 plus years. The premise of the essay was that while teaching is as important an element of academics' responsibilities as research, no universal platform for evaluating this activity exists. While Fleet and Peterson acknowledge that student evaluation of teaching (SETs) are currently the primary means of evaluating this performance, there is little consensus regarding the unquestioning acceptance as the most appropriate means to do so. In fact the consensus of many is that it is not (e.g., Galbraith et al. 2012). Some have even argued that the way in which universities are using SETs are changing the focusing of college teaching where the faculty member is seen more as a salesperson and the student as a customer. d'Apollonia and Abrami (1997) point out that the vast majority of post-secondary schools use student evaluations as one of, and often the most important measure of teaching effectiveness. The Carnegie Foundation conducted a study that determined that approximately 98 percent of universities administered some form of SETs (Magner, 1997). Business schools were reported by Comm and Mathaisel (1998) to exceed that level with over 99 percent using SETs. In fact, findings by Anderson and Shao (2002) found that business school administrators felt that SETs were the second most important component in evaluating teaching performance, eclipsed only by currency in field. This usage has been contributed to two major initiatives a significant increase in accountability of public institutions to state governments due to public pressure, and the increased emphasis of accrediting bodies such as The Association to Advance Collegiate Schools of Business (Simpson & Siguaw, 2001; Ballantyne, Borthwick & Packer, 2000).

Historically when using the results of SETs, academic units have been treated as either a normal distribution or as a bimodal distribution. Performance was seen as existing on a continuum with individual performance either below or above a standard, typically the mean. Analysis of five years of SETs for a business school at a southwestern university revealed that a normal distribution did not exist.

BACKGROUND

There have been over 2,000 articles published relating to the use of SETs in assessing teaching effectiveness. Even today after this plethora of research, no consensus exists within the academic community regarding their use. Regardless of this ongoing debate regarding their usage, there is little likelihood of SETs being replaced by another assessment tool. In fact, over 18 percent (Comm &Mathaisel, 1998) of schools limit their evaluation of teaching to only student evaluations. Based upon the likelihood of continued (and possibly increased) emphasis on their usage, it is critical to explore the improved administration of these instruments. It is also important that academics and administrators understand as much as possible about the criticisms as well as positive attributes often applied to SETs.

SETs Statistical Analysis

Statistical reports of SETs have been both positive and negative. Marsh (1987) stated "student ratings are clearly multi-dimensional, quite reliable, reasonably valid, relatively uncontaminated by many variables often seen as sources of potential bias, and are seen as useful by students, faculty and administrators" (p. 369). This lack of contamination was further confirmed by Lersch and Greek (2001) who examined instructor attributes and found no statistical reports of specific attributes affecting the results of SETS. And, some research suggests SETS are reasonably reliable and stable when using a sufficient sample size (Centra, 1979; Overall & Marsh, 1980; Sixbury & Cashin, 1995).

Ross (2005) disputes this claim and contends that there have been few if any statistical procedures used to verify reliability or validity of SETs. This is particularly true when institutions develop and use their own instruments. Read, Rama and Raghunandan (2001) maintain that much of the validity of SETS is removed due to a lack of knowledge of issues being addressed in the questions by the students. Marks (2000) also points out the "unavailability of psychometric information" (p. 108) in determining the interpretation of the results of SETs.

Stack (2000) further highlighted the issue of statistical unreliability of SETS. Stack (2000) contends that studies evaluating SETs are "marked by a series of shortcomings including lack of a systematic theoretic framework and lack of multivariate statistical analysis techniques to check for possible spuriousness." (pg 253) Stapleton and Murkison (2001) argued the fact that there are issues of exceptions within faculty and that no statistical instrument can singularly identify with accuracy those exceptions. In their words, "although student evaluations may be generally valid statistically, this does not prove that each student evaluation conducted by every school will be valid in the case of every faculty member included" (p. 272).

Haskell (1997c) supports this position by holding that these statistical results cannot be generalized across all faculty members. Harrison, Douglas and Burdsal go further by maintaining that "if faculty are going to place any value on student-derived overall evaluations, they should be provided evidence with how the overall evaluation is empirically derived" (p. 313).

In considering how to compare student evaluation, Anderson and Shao (2002) in a study of 501 AACSB members cited the departmental mean as the most important means for comparing student evaluations. This was followed by the discipline mean and the college mean. Respondents considered the university mean far less important.

Formative Versus Summative Use

Additional concerns have been reported regarding the administration of these instruments (Marsh, 1987; Marsh and Roche, 1997; Mckeachie, 1997; Anderson and Shao, 2006). The original intent of SETs was for formative purposes identification of strengths and weaknesses and the improvement of overall teaching effectiveness (Remmers, 1927, 1928, 1930; Brandenburg & Remmers, 1927). It took very little time before the general use turned more toward summative used to make administrative decisions for merit, retention, promotion and tenure. While there are many that support this practice (d'Apollonia, 1997; Marsh, 1987; 2007; Marsh and Roche, 1997; McKeachie, 1997), some have supported it with reservation. Abrani and d'Apollonia (1999) recommend SETS only be used "to make only gross distinctions regarding teaching effectiveness." (pg519). They continue by suggesting that institutions not rely on SETS only but supplement the information with peer evaluations and teaching portfolios.

There are others that argue strongly against the summative use of SETs (e.g. Anderson and Smith, 2005; Baldwin and Blattner, 2001; Davies et al. 2007; Haskell 1997a, 1997b, 1997c, 1997d; Stapelton 2001). Among the strongest opponents against using SETs in a summative manner is Haskell (1997). In a series of essays exploring the legal ramifications of SETs for making tenure and promotion decisions, Haskell continuously points to the potential infringement of academic freedom as clear justification to discontinue the use for summative purposes. The author regrettably admits, however, that the courts have supported university administrations in the use of SETs for making these decisions. Haskell blames this fact on a number of reasons such as SETs being the "orphan in discussions on academic freedom" (pg 23) as well as the fact that faculty members are often reluctant to challenge the status of students as legitimate stakeholders in the educational process.

This opposition is also expressed by Baldwin and Blattner (2000), who contend that "for all of the use or as some would say misuse of {SETS}, faculty should not forget that the intended purpose of these evaluations is to improve teaching. However, others have used and most likely will continue to use them for evaluation purposes" (pg 31). And again by Galbraith, Merrill and Kline (2012) who state strongly that "we find little support or no support for the validity of {SETS} as a general indicator of teaching effectiveness" (pg 353).

RESEARCH QUESTIONS

As the research above indicates there is continuing debate of the merit of SETS in their usage as summative devices. However, custom and their strong face validity seem to suggest that they will continue to be used. The question remains then, how to best use them as an indicator of teaching effectiveness.

We propose that there be a very limited use of SETS as a summative device for the majority of instructors and that the SETS be used only as an indicator of the exceptions, the very effective or very ineffective instructors. For SETS to be indicators of exceptions, a definition of exception or outlier needs to be specified. An outlier is an observation away from the rest of the data. In statistical terms, we can use the empirical rule to define an outlier as those cases that exceed one standard deviation from the mean. In a normal distribution of data, 68% of all cases should fall within one standard deviation from the mean. In the case of

SETS, 68% of instructors would be mid-level or average instructors, with SETS within one standard deviation of the mean, and 32% of instructors being either above or below the mid-level group.

Hypothesis one considers the distribution of the SETs data, basically does it represent a normal distribution. Statistics, such as the mean and standard deviation, are based on normal theory and are appropriate for quantitative variables with symmetric distributions. Deviations from normality impact these statistics. Skewness affects the mean value the most and the mode value the least. For a positively skewed distribution, the mean is greater than the median which is greater than the mode (mean>median>mode). For a negatively skewed distribution, the mean is less than the median which is less than the mode (mean<median<mode). Reliance on mean scores for comparison of faculty when the data does not represent a normal distribution may create faulty indicators of effective or ineffective teaching. Thus,

H1: The distribution of SETs will not fall within the definition of a statistically normal distribution.

Hypothesis two uses a normalized distribution of the instructor population, assigning instructors to one of three categories based on their standardized SETs score as determined by the mean of the 18 teaching effectiveness dimensions measured in the survey. The evaluation instrument also included a summary question regarding the overall effectiveness of the instructor, "Overall the instructor was (a) excellent, (b) very good, (c) satisfactory, (d) unsatisfactory, (e) very unsatisfactory. Thus,

H2: The means of a global instructor effectiveness question will be significantly different between the mid, above, and below level groups of instructors.

DATA ANALYSIS

The SETS for the business division of a regional southwestern university were collected for a period of 5 consecutive years. 118 cases were eliminated due to missing data. The final data set included the evaluations of 5768 students in 293 classes. The 293 classes were taught by 37 different instructors.

Evaluation Instrument

The evaluation instrument included 30 items. These items are listed in table one. Each item was evaluated by students on a 1-5 Likert scale. Of the 30 items, items 1-5 were more demographic and items 27-30 were global items. Eighteen items, questions 9-26 were deemed to be instructor related. For each instructor, an average of the SET instructor related items for each class was calculated and then these measures used to determine an instructor average for each term. For the global measure of instructor effectiveness, item 29, "Overall, the instructor was:" was used. This measure was averaged for each instructor by class and then by term.

Table 1 SETS INSTRUMENT	
Survey Item	**Description**
1	I took this course to satisfy major field requirements, (b) minor field requirements, (c) other requirements, (d) elective credits required for degree, (e) intellectual curiosity
2	My overall grade-point average at XXXX is
3	I estimate my grade at the end of this course will be
4	For me the course was
5	Compared with what I expected to learn in this course, I felt I got
6	The textbook, devices, and references were adequate for the course
7	The course significantly contributed to my intellectual development, understanding, and knowledge
8	I enjoyed attending this class
9	The instructor seemed to be sensitive to the academic needs of the students
10	The instructor seemed well-prepared for lecture or discussion
11	The instructor showed poise before the class
12	The instructor paced the course well
13	The instructor usually kept lecture and class discussions focused on the subject and goals of the course
14	The instructor seemed aware of whether the class was understanding the presentation
15	The instructor used clear, relevant examples
16	The instructor's mannerisms or habits enhanced the effectiveness of his/her teaching
17	The instructor's speech and lecture style contributed to his/her teaching effectiveness
18	The instructor made me feel free to ask questions, disagree, and express my ideas
19	The instructor was intellectually stimulating (thought provoking, or inspired me to do additional studying
20	The instructor showed a genuine interest in teaching the course
21	The instructor was generally accessible during posted office hours
22	The instructor gave adequate instructions concerning assignments
23	The instructor commented informatively on returned tests and assignments
24	The instructor obtained adequate evidence of student performance, through tests and assignments, to evaluate students in this class
25	The instructor graded and returned tests and assignments promptly
26	The instructor shared with students current developments and/or research related to the course
27	The planning and organization of the course was
28	Overall, this course was
29	Overall, the instructor was
30	Of all the instructors I have had at XXXX, I would rate this instructor as

Since the variable of concern was the instructor, the mean rating of each of the 18 SET instructor related items for each class was calculated. A mean evaluation for each of the 37 individual instructors was determined. This was repeated for all classes taught within the five year period.

Normality Analysis

SPSS was used to measure the Skewness and kurtosis or asymmetry of the distribution of average instructor evaluations. Results indicated a non-normal distribution (n=37; skewness = 1.187, sd = .388; kurtosis = 1.750, sd = .759). A distribution with positive kurtosis is called **leptokurtic**. In terms of shape, a leptokurtic distribution has a more acute "peak" around the mean (that is, a higher probability than a normally distributed variable of values near the mean) and "fat tails" (that is, a higher probability than a normally distributed variable of extreme values). The positive skewness indicated a long right tail while the

positive kurtosis indicated that the observations clustered more and had a longer tail than those in the normal distribution.

Category Classification

The average SETs for each instructor were normalized with z scores. This would approximate how far each instructor was from the average evaluation score. Instructors were then classified by their z-score as Above 1 or more standard deviation above the mean; Average within one standard deviation of the mean (plus or minus); or Below 1 or more standard deviation below the mean. Two instructors were classified as Above (n=2, number of classes = 14); 30 instructors were classified as Average (n=30, number of classes = 257); and five were classified as Below (n=5, number of classes = 22). Table 2 indicates the descriptive statistics for each of the three SET groups.

					95% Confidence Level for Mean			
		Mean	STD. Deviation	STD. Error	Lower Bound	Upper Bound	Minimum	Maximum
1.00	30	1.8033	.20664	.0377	1.7261	1.8805	1.48	2.22
2.00	5	2.5526	.26928	.12043	2.2182	2.8870	2.25	2.97
3.00	2	1.3946	.05200	.03677	.9274	1.8618	1.36	1.43
Total	37	1.8825	.35121	.05774	1.7654	1.9996	1.36	2.97
	Class AVG Mean							

Table 2 Descriptives

Global Rating Analysis

SPSS was used to measure the differences in the mean of the global instructor effectiveness ratings between groups. Levene statistics indicated non-normality of variances (1.903, p=.165) so the Dunnett C statistic was calculated to determine if difference in means were significant. Results shown in Table 3 indicate a significant difference between the groups in the means of the global measures of effectiveness.

Table 3
TEST OF HOMOGENEITY OF VARIANCE CLASSAVG926_MEAN

Levene Statistic	f1	f2	Significance	
1.457		4	.247	

Multiple Comparisons
Dependent Variable: ClassAvg926_mean

	(I) InOut	(J) InOut	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tamhane	1.00	2.00	-.74931*	.12620	007	-1.2008	-.2978
		3.00	.40870*	.05268	004	.2028	.6146
Tamhane	2.00	1.00	.74931*	.12620	007	.2978	1.2008
		3.00	1.15801*	.12592	001	.6985	1.6175
Tamhane	3.00	1.00	-.40870*	.05268		-.6146	-.2028

		2.00	-1.15801*	.12592	004	-1.6175	-.6985
					001		
Dunnett C	1.00	2.00	-.74931*	.12620		-1.1867	-.3119
		3.00	.40870	.05268		-.1476	.9650
Dunnett C	2.00	1.00	.74931*	.12620		.3119	1.1867
		3.00	1.15801*	.12592		.5427	1.7733
Dunnett C	3.00	1.00	-.40870	.05268		-.9650	.1476
		2.00	-1.15801*	.12592		-1.7733	-.5427
*The mean difference is significant at the .05 level							

DISCUSSION

Hypothesis 1, the distribution of SETs in the five year population will not fall within the definition of a statistically sound normal distribution was supported. Skew and kurtosis values indicate that the distribution is a non-normal, positively skewed distribution. In this situation, Fa positively skewed distribution, the mean is greater than the median which is greater than the mode (mean>median>mode). Thus, the mean of the group would be artificially high.

Hypothesis 2 categorized the instructors into groups based on the normalized average of their individual dimensions. Data supports that instructors could be grouped into mid, above, and below classifications based on their normalized cumulative measure of effectiveness. This allows outliers, those in the above or below categories, to be identified.

It is suggested that institutions return to the original formative purpose of the SETs, to identify strengths and weaknesses and to improve overall teaching. It is strongly suggested that the current practice of comparing an instructor's average score to the average of the department or college be avoided. Instead either a global score or an average of individual dimensions of the SET should be normalized. From this distribution identify the outliers, the faculty members scoring above or below one standard deviation from the normalized mean. It is suggested that those faculty members scoring within the mid or average category be viewed as scoring the same. Statistically, the scores of these individuals are not significantly different. The outliers should be considered and either recognized as exceptionally strong and/or weak.

It is at this point that the individual dimensions that are rated in most SETs could be utilized to provide specific feedback on ways to improve teaching. It is suggested that to utilize this feedback most effectively, the focus be on the number or percentage of students that ranked each dimension exceptionally high or exceptionally low. This has the potential of providing more information to the faculty member than the generic "average" that is typically used. Do all students consider the faculty member average on a dimension or half the class very favorable and half the class very unfavorable? Developmental advice would be very different in these two scenarios.

While studies seem to indicate the continued use of SETs, this study suggests that reliance on SETs for summative purposes should be done with caution. Perhaps, institutions should reconsider the original intent of SETs, their formative purpose and the identification of strengths and weaknesses and the improvement of overall teaching effectiveness. Or as Abrani and d'Apollonia (1999) recommend "to make only gross distinctions regarding teaching effectiveness." (pg519).

As time pressured administrators look for simplified means of evaluating complex issues, it is time to reconsider that approach when making decisions regarding careers of academics. The above analysis and review suggests that using the mean for faculty comparative purposes is replete with statistical concerns. Since time and cost will certainly be increased by adopting complex measures to evaluate a complex concept and the face validity of SETs appear to guarantee their continued use this paper provides a straightforward way to serve both purposes.

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UNDERSTANDING SUCCESSFUL USE OF SMARTPHONES IN AN ACADEMIC CONTEXT: HBCU STUDENTS' PERSPECTIVE

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ABSTRACT

As the capabilities of smartphones and the readiness of universities for Mobile learning (M-learning) grow, M-learning becomes an increasingly-important research topic. Compared with notebook computers and PDAs, smartphones provide improved mobility and access to learning, regardless of time and location. Drawing upon the Information Systems Success (ISS) model and the body of M-learning research, this study investigates factors that affect the successful use of smartphones in an academic context. A structural equation model (SEM) was used to test the proposed hypotheses. The model was tested using data collected from a Historically Black University in a metropolitan area, which is characterized as a commuter school that provides educational opportunities for many non-traditional students who need to work while going to school. The findings show that many students use smartphones for academic purposes in various ways. Also, those who use smartphones see benefits from using the smartphones in their education.

Keywords: M-Learning, IS Success Model

Introduction

The focus of this study is students' evaluations of smartphones. A smartphone may be defined as a mobile phone with an operating system, and the abilities to allow its user to store information, access the Internet, and enhance its functionality by installing additional software applications (Peslak, et al, 2011). With the recent development of software applications and network connections, a smartphone can perform the functions of personal computers such as notebook and desktop computers. A smartphone can be used to do various things ranging from checking emails and taking notes to conducting research and writing papers (Smith, 2012). According to the Pew Research Center (2012), a growing number of Americans use smartphones to reach the Internet. Especially low income minorities are more likely use smartphones as a main means to access the Internet than other groups.

While some major challenges exist for smartphones, such as slower and less reliable connection, small screen, and applications with limited functions (Smith, 2012), smartphones are becoming an increasingly popular tool for education and business. For example, use of mobile devices has surpassed PCs in online shopping (Siwicki, 2013). Mobile devices can be used in finding stores, searching for coupons, and exchanging pictures of products as well as buying goods and services on the Internet. Likewise, smartphones have a profound impact on education (Elias, 2011). Smartphones make it possible for students to carry e-books, find answers quickly, improve communication with fellow students, and utilize audio and video materials for their education (Concordia Online Education, 2012; Chen and Denoyelles, 2013; Tossel et.al., 2014).

Given this critical point, and the common use of smartphones for academic purposes, it is crucial to investigate students' evaluations of the success of these devices. Thus, contributing to researchers' and educators' understanding of students' evaluations of smartphones is a key motivation of this study. In addition, to our knowledge, this is the first such study in the context of a historically black college or university (HBCU) located in a metropolitan area.

Students attending such an HBCU tend to have different backgrounds than traditional college and university students. Often, these students work and are older than traditional students (Kwun, et. al., 2012). Thus, these students may have different evaluations of smartphones than those of more traditional university students. Thus, understanding evaluations of smartphones by students attending a metropolitan HBCU provides an additional motivation for this research.

The remainder of this article is structured as follows. The next section reviews literature relevant to investigating students' evaluations of smartphones, including DeLone and McLean's IS Success Model and literature on students' self-regulated learning. This section also presents the hypotheses tested in this study. Afterwards, this paper presents the method used for collecting and analyzing the study's data. Subsequently, the findings are presented and discussed. This article concludes with the implications of this study's findings, its limitations, and directions that future research may take.

Literature Review

Researchers (e.g., Freeze, et al., 2011 and Lee, 2009) seeking to investigate users' evaluations of information systems in educational context have frequently turned to the foundation provided by the information system success (ISS) model proposed and updated by DeLone and McLean (1992, 2003). Though the ISS model has been the subject of criticisms (e.g., Seddon, 1997), much support has been found for the relationships posited by the model. Of particular relevance to this study, a meta-analysis by Petter and McLean (2009) found overall support for the model's relationships at the individual level of analysis. These findings are particularly germane to this study, given smartphones are typically used by individuals, such as students. Given these supportive findings, the original ISS model is adapted to form the foundation of our research model.

DeLone and McLean's IS Success model is comprised the following constructs: 1) IS use, 2) user satisfaction, 3) information quality, 4) system quality, and 5) individual impact or success of the IS. We examine each of these constructs and their associated hypotheses in turn. While researchers have made numerous additions to the original model, this study sought to minimize additions to the IS Success model's complexity.

System Success

As suggested earlier, previous research has considered success of ISs in terms of both their impact on individuals and organizations (e.g., Petter and McLean, 2009). For individuals, the impacts may include effects such as decision-making effectiveness, job effectiveness, and quality of work (e.g., Wixom and Watson, 2001). It is argued that use and user satisfaction with the IS are positively associated with such positive impacts (e.g., Petter and McLean, 2009). In the realm of this study, we focus on individual benefits from smartphones in an educational environment.

System Quality

The system quality dimension measures individuals' perception of the information system's performance (e.g., Freeze, et al., 2011 and Petter and McLean, 2009). Freeze et al. (2011) suggest that in an e-learning context, this form of quality must take into account the

hardware available to the user, the relevant software applications, and network connections provided to the Internet. In the case of smartphones, we would argue that the smartphone's operating system is another critical component in addition to those previously mentioned. Previous studies (Petter and McLean, 2009) have found a positive relationship between system quality and both the use of the system and users' satisfaction with the system. Thus, we hypothesize:

> *H1: Smartphone system quality will influence students' smartphone use.*
> *H2: Smartphone system quality will influence students' satisfaction with their smartphones.*

Information Quality

The information quality construct concerns measures of the output provided by the information system in question (e.g., Freeze, et al. 2011; Petter and McLean, 2009). More specifically, the issue is the quality of the output of the information system. Freeze and colleagues (2011) suggest that, in an e-learning context, relevant aspects of information quality include accuracy, completeness (or sufficiency), relevance, the degree to which the information is exactly what is needed, and timeliness. Previous research suggests that information quality will positively impact both use of the IS and the user's satisfaction with the IS (Petter and McLean, 2009). So, we hypothesize the following:

> *H3: Information quality provided by the smartphone will influence students' smartphone use.*
> *H4: Information quality provided by the smartphone will influence students' satisfaction with the smartphone.*

System Use

The use construct is a core element of this model, given that system use is regarded as an important measure of system success (DeLone and McLean, 1992). Use may be defined as the consumption of the information system or the output from that system (Petter and McLean, 2009). Use may be measured in terms of either actual recorded usage or self-reported usage. Previous research has found that high levels of use of the IS in question are positively associated with a user's satisfaction with the IS (e.g., Petter and McLean, 2009). Thus, we hypothesize:

> *H5: Smartphone usage will influence individual benefits in education.*

User Satisfaction

User satisfaction measures the degree of successful interaction between the information system, such as a smartphone, and its users (Freeze et al., 2011). While an instructor may require that students interact with a course management website (e.g., a Blackboard web site for the course), the use of a smartphone to do this and other educational activities is, arguably, voluntary. Previous research (e.g., DeLone and McLean, 1992) has argued that user satisfaction is positively associated with both system use and success in terms of individual impacts. For this reason, we present the following hypothesis:

> *H6: Students' satisfaction with their smartphones will influence individual benefits in education.*

Self-Regulated Learning Strategies

While DeLone and McLean's original model, as adapted for this study, provides a strong foundation for understanding students' evaluations of smartphone success, some additional factors can be considered to improve the model for an M-learning environment. A growing body of research (e.g., Saba, 2012) points to the importance of students' self-

regulated learning strategies in user satisfaction and outcomes of technology-supported learning. Previous studies (e.g., Chen, 2002 and Lee, 2009) have shown that students' use of self-regulated learning strategies can be positively associated with learning-related outcomes. In this study, two aspects, effort regulation and time/place regulation, of self-regulated learning are hypothesized to influence system success, based on Chen (2002). Effort regulation refers to the ability to direct and control one's efforts toward goals. On the other hand, time/place regulation refers to the ability to manage one's time and environment for study. Thus, we hypothesize:

H7: A high level of effort self-regulation will influence individual benefits in education.
H8: A high level of time/place self-regulation will influence individual benefits in education.
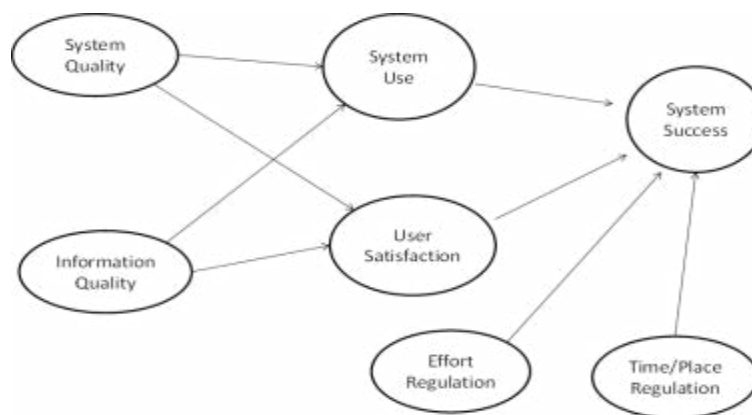
Figure 1. Our Theoretical Model

Methodology

Data were obtained from a survey questionnaire that was administered to students enrolled at a HBCU located in a metropolitan area. The student sample comes from various classes ranging from freshmen classes to graduate classes taught at the university.

The survey instrument was developed by adapting items from Freeze et al. (2011) and Chen (2002) which measures self-regulated learning strategies and the constructs in the ISS model. The survey includes questions to measure the constructs in the research model above, which are five items for system quality, five items for information quality, three items for system use, three items for system satisfaction, four items for effort regulation, six items for time/place regulation, and one item for system success. In addition, the survey includes questions regarding demographics of respondents. Appendix A shows the list of items associated with each of the model's constructs.

In order to test the hypotheses shown in the research model, the Partial Least Squares (PLS) technique was used. PLS has been used to assess various types of construct models (Wetzels, et. al., 2009). PLS, as a structural equation modeling technique, includes two parts of model testing: measurement model and structural model testing. In order to test a research model, the measurement model first has to be evaluated (validity test) and then the structural model has to be tested (hypothesis testing) (Barclay et al., 1995). In this study, the model assessment was conducted using the PLS software, Smart PLS.

The Measurement Model

In PLS, the relationship between constructs and items used to measure them can be specified as either formative or reflective (Fornell and Larcker, 1981). Formative items are considered causes of the construct. Reflective items are considered effects of the construct. In order to specify the relationship, theoretical knowledge must be applied as much as possible

(Lohmoller, 1981). Lohmoller also suggests that exogenous constructs (independent variables) should be modeled with formative items and endogenous constructs (dependent variables) should be modeled with reflective items when theoretical knowledge about the construct does not exist. For the proposed model shown in Figure 1, the items measuring all of exogenous constructs were considered formative, whereas the items measuring all of endogenous constructs were considered reflective (see Table 1 below).

Table 1. MEASUREMENT MODEL		
Constructs	**Model**	**Relationship**
System Quality	Exogenous	Formative
Information Quality	Exogenous	Formative
System Use	Endogenous	Reflective
User Satisfaction	Endogenous	Reflective
System Success	Endogenous	Reflective
Effort Regulation	Exogenous	Formative
Time/Place Regulation	Exogenous	Formative

The Structural Model

The test of the structural model consists of estimating the path coefficients and the significance level of the relationship between the constructs in the research model, which indicate the strength of the relationships. In addition, the test shows R^2 value of the dependent variables, which indicates the amount of variance explained by the model. The hypotheses were tested by assessing the significance of the relationships between the constructs.

Data Analysis: Profiles of the Samples

Table 2 shows the profiles of the respondents. The sample consisted of 67 percent females and 33 percent males, with average age of 27.3 years. Approximately 65 percent of the students have a part-time or full-time job. In addition, 67 percent of students have taken at least one online class. However, over 70 percent students reported face-to-face as their preferred course delivery method. This is similar to a previous finding from a sample from the same school (Kwun, et. al., 2012). This may seems strange considering the students' work schedules. But as the previous studies indicated, students are aware of negative sides of e-learning, such as frustration with communication with the instructors, course characteristics that prohibit use of an online environment, student learning styles that require active student-teacher interaction, etc. (Kleinman and Entin, 2002). The respondents also indicated that they use smartphone to perform various activities for academic purposes. These activities include simple tasks such as checking emails or announcements and more complex tasks such as downloading class materials and submission of assignments.

Table 2. FREQUENCY DISTRIBUTIONS OF SELECTED DEMOGRAPHIC VARIABLES	
	N = 181
Average Age	27
Gender	**Count (%)**
Male	60(33)
Female	121(67)
Employment	
Full Time	65(36)

Part Time	53(29)
Online Experience	
Yes	122(67)
No	57(31)
Preferred Method	
Face-to-Face	127(70)
Online	13(7)
Hybrid	38(21)
Common Usage	Checking Mail, Announcement and Course Materials, Assignment Submission

The following section describes the evaluation of the research model. The results are divided into two subsections. The first subsection discusses the reliability and validity of the proposed constructs. The second subsection provides test results for hypotheses H1-H8; that is the impact of predictor variables on individual benefits from using smartphones (system success).

Measurement Model

The measurement model addresses the relationship between the constructs and the items used to measure them. The test of the measurement model consists of the estimation of the convergent and discriminant validity of the measurement instrument. A list of items for each construct is reported in Appendix A.

Convergent validity refers to the extent to which alternative measures of the same construct are related to each other. Three tests have been used to estimate convergent validity: (1) composite reliability; (2) factor loadings of the items; and (3) average variance extracted (AVE), which indicates the capacity of the manifested variables (measurement items) to describe the related latent variable (construct). The composite reliability was assessed using the criteria (.70) suggested by Fornell and Larcker (1981). Average variance extracted (AVE) of 0.50 or above has also been used to support the convergent validity of the constructs (Fornell and Larcker, 1981). Factor loadings of at least 0.70 are considered to be acceptable (Barclay et al., 1995). However, it has been suggested that absolute value of factor loadings of .30 are considered to meet the minimal level, loadings of 0.40 are considered more significant, and loadings of 0.50 or greater are considered very significant (Hair et al., 1998).

As shown in Table 3, the composite reliability of all reflective constructs is above .80. These values are greater than the cut-off value of 0.7 suggested by Fornell and Larcker (1981). This shows strong internal consistency. Table 3 also describes average variance extracted for the constructs of the model. All of the reflective constructs are over 0.5 for the average variance extracted.

Table 4 shows that majority of the reflective constructs had loadings of over 0.70 except for a few items. In order to achieve discriminant validity, no item should load higher on other constructs than it is on the construct it is intended to measure (Hair, et al., 1998). All items loaded highest on their target construct. However, some the formative constructs (effort regulation and time/place regulation) display unusually low loadings and some items even show a negative loading. This indicates a weakness of the items to measure the two constructs, effort regulation and time/place regulation.

Table 3. AVERAGE VARIANCE EXTRACTED AND RELIABILITY			
	AVE	Composite Reliability	R Square
System Success	0.51	0.80	0.51
System Use	0.79	0.92	0.19
User Satisfaction	0.59	0.81	0.56

Table 4. DISCRIMINANT VALIDITY							
Cross Loadings	Effort Regulation	Time/Place Regulation	Information Quality	System Quality	System Use	System Success	User Satisfaction
EFF1	-0.13	-0.04	0.00	0.17	-0.03	-0.03	0.12
EFF2	0.64	0.41	0.27	0.18	0.08	0.14	0.19
EFF3	-0.48	-0.01	-0.03	0.08	-0.17	-0.10	-0.02
EFF4	-0.10	0.10	0.05	0.12	-0.10	-0.02	0.04
TP1	0.17	**0.52**	0.19	0.17	0.25	0.20	0.28
TP2	0.35	**0.73**	0.31	0.30	0.24	0.29	0.37
TP3	-0.03	**-0.22**	-0.13	-0.02	-0.03	-0.09	-0.01
TP4	0.15	**0.07**	0.26	0.04	0.10	0.03	0.31
TP5	0.33	**0.80**	0.23	0.12	0.24	0.31	0.25
TP6	-0.05	**-0.03**	0.02	0.06	-0.11	-0.01	-0.01
IQ1	0.20	0.08	**0.76**	0.46	0.15	0.25	0.66
IQ2	0.16	0.25	**0.67**	0.44	0.45	0.47	0.40
IQ3	0.24	0.38	**0.82**	0.53	0.47	0.53	0.54
IQ4	0.22	0.35	**0.84**	0.59	0.43	0.53	0.58
IQ5	0.23	0.37	**0.67**	0.60	0.28	0.45	0.50
SQ1	0.12	0.16	0.57	**0.85**	0.27	0.35	0.50
SQ2	0.13	0.20	0.56	**0.90**	0.28	0.44	0.52
SQ3	0.06	0.23	0.53	**0.82**	0.28	0.38	0.47
SQ4	0.09	0.23	0.52	**0.72**	0.23	0.34	0.42
SQ5	-0.01	0.19	0.41	**0.61**	0.14	0.26	0.39
SU1	0.23	0.29	0.42	0.34	**0.91**	0.60	0.52

SU2	0.24	0.21	0.33	0.20	**0.86**	0.51	0.40
SU3	0.16	0.32	0.41	0.28	**0.89**	0.63	0.55
SUC1	0.22	0.43	0.48	0.40	0.63	**0.87**	0.46
SUC2	0.09	0.15	0.27	0.35	0.21	**0.47**	0.34
SUC3	0.09	0.31	0.40	0.27	0.43	**0.73**	0.40
SUC4	0.18	0.16	0.36	0.30	0.51	**0.72**	0.34
US1	0.16	0.17	0.66	0.49	0.27	0.27	**0.83**
US2	0.22	0.39	0.53	0.46	0.72	0.68	**0.75**
US3	0.06	0.10	0.50	0.38	0.17	0.17	**0.72**

Structural Model

Figure 2 below shows the significance and the strength of the relationships between the constructs. It also shows R^2 which indicates the predictive power of the model. Information quality shows significant impact on both system use and user satisfaction, with path coefficients of 0.41 and 0.61 respectively (H3 and H4). System quality had positive impacts on system use and user satisfaction, with path coefficients of 0.05 and 0.19. However, they are insignificant (H1 and H2). Only system use had a significant positive impact on system success with a path coefficient of 0.49 (H5). User satisfaction, effort self-regulation, and time/place regulation failed to have significant impacts on system success, with path coefficients of 0.21, 0.0, and 0.17 (H6, H7, and H8). Regarding the explanatory power of the research model, system use, user satisfaction, and system success shows R^2 of 0.19, 0.56, and 0.51 respectively. Table 5 shows a summary of the hypotheses testing along with the t-statistics.
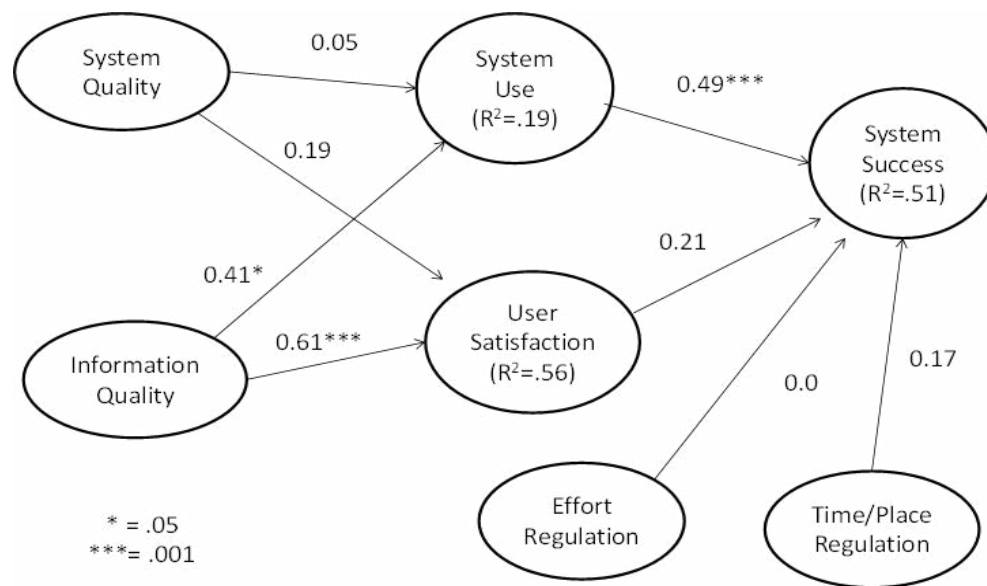

Figure 2: Path Coefficients and R^2

Table 5. HYPOTHESES TEST RESULTS		
Hypotheses	**t-statistics**	**Results**
H1: Smartphone system quality will influence students' smartphone use.	0.38	Not Supported
H2: Smartphone system quality will influence students' satisfaction with their smartphones.	1.06	Not Supported
H3: Information quality provided by the smartphone will influence students' smartphone use.	2.56	**Supported**
H4: Information quality provided by the smartphone will influence students' satisfaction with their smartphones.	3.58	**Supported**
H5: Smartphone usage will influence individual benefits in education.	3.78	**Supported**
H6: Students' satisfaction with their smartphones will influence individual benefits in education.	1.44	Not Supported
H7: A high level of effort self-regulation will influence individual benefits in education	0.66	Not Supported
H8: A high level of time/place self-regulation will influence individual benefits in education.	1.77	Not Supported

CONCLUSION

This study investigated HBCU students' perception of smartphone use in an academic context, based on an adapted Information Systems Success Model. The findings showed that information quality was a significant predictor for students' smartphone usage and their satisfaction. It was also found that those students who use smartphone see benefits of using smartphone for academic purposes. Considering the characteristics of the sample students who need support from other fellow students and support outside of the class, a smartphone can be a very useful tool to gain social support and access necessary materials for academic work. However, the weak relationship between user satisfaction and systems success may indicate that students who like their smartphones and enjoy using them do not necessary see any benefit in an academic context.

Another major issue in the study is the problematic low reliability and validity of both effort self-regulation and time/place self-regulation measures in this study. However, previous studies in various contexts show strong support for the measures. For any future research, the measures for these constructs must be examined carefully, considering the contexts of the study. In this study, it is possible that the phrasing of the items for these constructs are not appropriate for HBCU students, who can be considered as non-traditional students who are mature and have other responsibilities such as family and work.

Future research building on this study can take a number of directions. To begin, future studies should seek to replicate the current findings. In addition, additional studies could extend this research to examine other non-traditional students' evaluations of smartphone usage in education (e.g., students primarily engaged in online degree programs). Finally, it may be useful to complement this quantitative study with qualitative case research aimed at uncovering additional insights about nontraditional students' use and evaluation of smartphones in educational contexts.

Despite some weakness in the instrument, the results have important implications for university administrators and other educational practitioners. Regardless of some negative views of smartphones from instructors, students can benefit from smartphones in their education by utilizing its functionality, such as Internet access. Thus, practitioners must find a way to cope with the changes and opportunities that students' smartphones bring to education today.

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Appendix A: List of Items

Constructs	Items	Descriptions
System Quality	SQ1	The smartphone is always ready to be used.
	SQ2	The smartphone is user-friendly.
	SQ3	The smartphone provides interaction between users and the phone.
	SQ4	The smartphone has attractive features that appeal to users.
	SQ5	The smartphone provides high-speed information access.
Information Quality	IQ1	The information provided by the smartphone is accurate.
	IQ2	The smartphone provides information that is critical to learning.
	IQ3	The smartphone provides sufficient information.
	IQ4	The smartphone provides clear information.
	IQ5	The smartphone provides information that is up-to-date.
System Use	SU1	I frequently use the smartphone for school work.
	SU2	I depend upon the smartphone for school work.
	SU3	I use the smartphone for school work if possible.
User Satisfaction	US1	I am satisfied with the way the smartphone functions.
	US2	I think the smartphone is very helpful for doing school work.
	US3	Overall, I am satisfied with the smartphone.
System Success	SUC1	The smartphone has a positive impact on my learning.
	SUC2	Overall, the performance of the smartphone is good.
	SUC3	Overall, the smartphone beneficial for school work.
	SUC4	The smartphone is an important and valuable aid to me when I do my school work.
Time/Place Self-Regulation	TP1	I usually study in a place where I can concentrate on school work.
	TP2	I make good use of my study time for school work.
	TP3	I find it hard to stick to a study schedule.
	TP4	I have a regular place set aside for studying.
	TP5	I make sure that I keep up with the weekly readings and assignment.
	TP6	I often find that I don't spend very much time on school work because of other activities.
Effort Self-Regulation	EFF1	I often feel so lazy or bored that I quit before I finish what I planned to do for school work.
	EFF2	I work hard to do well in school even if I don't like what we are doing.
	EFF3	When class materials are difficult, I either give up or only study the easy parts.
	EFF4	Even when course materials are dull and uninteresting, I manage to keep working until I finish.

AN EXPLORATORY STUDY OF THE EFFECTS OF EXHAUSTION AND SOCIAL SUPPORT ON BUSINESS STUDENTS' PERSISTENCE

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ABSTRACT

The constructs of burnout and exhaustion have been studied extensively in the workforce. Although a number of studies have addressed exhaustion in university students, most have been specific to certain majors or areas of study with virtually none examining exhaustion in business students. As exhaustion carries with it only chronic negative outcomes for affected individuals, including lower persistence, an exploratory study of the construct and its effects on university business students is a primary focus of this paper.

With college attrition rates approaching 50% in the United States, retention is of paramount concern to universities. Attrition results in lost tuition and fee revenues for affected institutions and a host of broader negative repercussions involving misappropriations of government funding, a weakened labor market and the potential exclusion of workers from employment. Social support has been shown to positively impact student well-being and retention, and prior research indicates that social support may help moderate the negative effects of exhaustion on student retention.

Over three hundred business students from a university in the Pacific Northwest participated in the study. Students were in various stages of their academic progress and represented all major business areas of study. Although the timing of the study (just prior to final exams) likely contributed largely to the extreme level of student exhaustion measured, this finding suggests further study as exhaustion is a cumulative condition. Regression models indicate that both exhaustion and social support have a statistically significant effect on business students' commitment to remain in school in the expected direction; however, the results do not indicate that social support moderates the effect of exhaustion on business students' commitment to remain in school.

The study's findings suggest future research in this area in regards to university business students. Further studies may benefit from a longitudinal design and seek to better understand how social support affects exhaustion and student persistence.

INTRODUCTION

Stress, Burnout, and Exhaustion in University Business Students

Psychological distress among university students has been found to be significantly higher than among general population groups (Adlaf, Gliksman, Demers, & Newton-Taylor, 2001), and student experiences associated with academic stress can have short and long-term negative consequences (Orem, Petrac, & Bedwell, 2008), including not completing a degree (Vaez & Laflamme, 2008). Stress and its negative outcomes may persist long into the future impacting well-being and efficacy (Law, Sweeney, & Summers, 2008; Maslach, Schaufeli, & Leiter, 2001; Sweeney & Summers, 2002).

Unfortunately, a number of different definitions of stress exist (Lyrakos, 2012), and this has resulted in a number of inconsistencies regarding measures and modeling. In regards to stress research in higher education, a particularly difficult issue is measuring stress solely

resulting from academic activity, independent of other possible sources of stress (e.g. employment, relationships, and finances).

One stress construct that has been widely represented in the psychology, sociology, and organizational behavior research literatures is job burnout (Ahola, Honkonen, Isometsa, Kalimo, Nykyri, Koskinen, Aromaa, & Lonnqvist, 2006; Cordes & Dougherty, 1993; Daraiseh, & Salem, 2006; Maslach & Jackson, 1986; Maslach et al., 2001; Maudgalya, Wallace). The construct has been operationalized for the study of student burnout (Balogun, Helgemoe, Pellegrini, & Hoeberlein, 1996; Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002; Weckwerth & Flynn, 2006; Yang & Farn, 2005), and many of these studies are specific to a certain university majors. Of note, however, is the general paucity of burnout research in business students despite a number of studies examining the construct in business professionals (Babakus, Cravens, Johnston, & Moncrief, 1999; Law et al., 2008; Lee & Ashforth, 1993; Moore, 2000; Sweeney & Summers, 2002). In one burnout study, Law (2007) did find that accounting student participation in co-curricular activities suggests higher levels of engagement the positive antithesis of burnout.

Burnout is a psychological stress syndrome marked by a prolonged negative response to chronic emotional and interpersonal stressors at work (Ahola et al., 2006; Maslach & Jackson, 1986; Maslach et al., 2001). As this construct uniquely captures stress resulting exclusively from job experiences, it qualifies as a useful tool in assessing and researching stress related solely to coursework in university students, including business majors. Further, exhaustion, defined as the "depletion of emotional and mental energy needed to meet job demands" (Moore 2000, 336), represents the basic stress dimension and is the most thoroughly analyzed and reported component of burnout (Maslach et al., 2001). Someone who describes himself as experiencing burnout is generally referring to feelings of exhaustion (Maslach et al., 2001). They feel overextended, experience a diminution of energy and often abhor the thought of going to work (Cordes & Dougherty, 1993; Gaines & Jermier, 1983; Lee & Ashworth, 1993; Maslach, 1982; Maslach et al., 2001). As exhaustion is central to and synonymous with the burnout syndrome (Maslach et al., 2001), it is the focus of this study involving university business students.

As a result of its chronic and intensely affective nature (Gaines & Jermier, 1983), exhaustion carries with it only negative outcomes (Cordes & Dougherty, 1993). Individuals who experience high levels of exhaustion often find their passion and commitment for work replaced by feelings of frustration and anxiety (Maslach & Leiter, 1997) and can suffer from physical and mental problems and strained relationships (Maslach & Jackson, 1986: Maslach et al., 2001). Organizations are adversely affected by exhausted individuals through lower productivity, absenteeism, and higher turnover (Cordes & Dougherty, 1993; Maslach & Leiter, 1997). Exhaustion's negative effects may result in lower academic persistence for business students and, consequently, lower student retention for university business schools.

Retention and Social Support

College student attrition rates are between 30 and 50 per cent in the United States, and this issue is of paramount concern in terms of lost tuition revenue for institutions of higher learning, the subsequent misappropriation of funds from state and federal governments, and the broader repercussions of a weakened labor market and the potential exclusion of workers from employment (O'Keeffe, 2013). University administrators, faculty, and staff, eager to stem attrition, are understandably interested in areas where they can positively impact retention through measures aimed at improving students' university experiences.

Related to student well-being and efficacy, high levels of social support have been helpful to university students in earning higher grade point averages and reporting higher levels of college satisfaction as well as higher levels of social and academic adjustment

(Napoli & Wortman, 1998). Social support likely contributes to students' commitment to their university and overall retention rates (Grant-Vallone, Reid, Umali, & Pohlert, 2003-2004). Milem & Berger (1997) found that high levels of social integration predicted high levels of institutional commitment, which in turn predicted higher levels of intent to re-enroll.

One way that social support may support higher retention is by moderating the effect of exhaustion on student retention. Among professionals, Tetrick, Slack, Da Silva, & Sinclair (2000) found that work-related social support moderated the relationship between exhaustion and job satisfaction. More recently, Park & Yun (2013) found both supervisor and family support to be significantly related to exhaustion in Korean workers.

Purpose of Study

The purpose and scope of the current study is exploratory. First, as already noted, exhaustion studies involving university business students are virtually nonexistent. Thus, one basic purpose of the study is to examine exhaustion levels in these students. Second, the study aims to examine whether the established inverse relationship between workplace exhaustion and employee retention can similarly be found in a relationship between academic exhaustion and business students' commitment to remain in school. If such an association is determined, the finding would underscore the importance of further studying and addressing exhaustion in business school students. Third, as social support has been shown to positively impact persistence in university students, this paper will examine whether social support helps moderate exhaustion's effect on business students' commitment to remain in school.

METHOD

Subjects

For the current study, the subjects consisted of 310 student respondents from sophomores to seniors across all business areas from a university located in the Pacific Northwest. Eleven sections of courses covering accounting, finance, marketing, economics, business management, and information systems were surveyed, and almost all of students participated eliminating any concerns regarding potential response bias. Almost all students were between 19-22 years of age, so age differences will not significantly impact the study's variables. The participating university's institutional review board approved this human-subject study.

Following detailed instructions, each instructor administered the instrument to students within a short time window toward the end of the semester. As students were preparing for final exams and completing projects, this period was chosen specifically as a possible "peak" period in student exhaustion and, consequently, may provide the most salient burnout data. Participants were informed that their participation was strictly voluntary and responses would be kept confidential. They were asked to read the instructions carefully and were informed of the conditions of implied consent.

Instruments

The five-item exhaustion subscale developed by Schaufeli et al. (2002) for use with university students was utilized in the questionnaire. This instrument was modified from the Maslach Burnout Inventory (MBI)-General Survey (Schaufeli, Leiter, Maslach & Jackson, 1996). The MBI is the most validated and well-accepted measure of exhaustion in the literature (Cordes & Dougherty, 1993; Maslach et al., 2001). Cronbach's coefficient alpha has been calculated at 0.90 (Maslach & Jackson, 1986), and the scale has also demonstrated test-retest reliability and factorial, convergent, and discriminant validity (Maslach & Jackson, 1981; 1986). Similar to the standard version of the MBI, the modified student version employed in the current study demonstrated acceptable internal consistency (Nunnally &

Bernstein, 1994; Schaufeli et al., 2002). Subjects indicated the frequency of experiencing school-related exhaustion on a seven-point Likert scale, with endpoints 1 = "never occurs" to 7 = "every day."

The Multidimensional Scale of Perceived Social Support (MSPSS) developed by Zimet, Dahlem, Zimet & Farley (1988) was administered to students to measure social support. The MSPSS demonstrated good internal and test-retest reliability and moderate construct validity. Students indicated their level of agreement to statements about perceived social support they receive from others on a seven-point Likert scale, with endpoints 1 = "strongly agree" to 7 = "strongly disagree."

Business students' commitment to remain in school was gauged by asking them to indicate their level of commitment to stay in school and complete their degree. Four responses were available and ranged from "extremely committed" to "not that committed." Other demographic information collected included, gender, area of study, and year in school.

RESULTS

Of the business students who participated in the study, 45% were females and 55% were males. They declared a variety of business areas of study, with students from accounting, finance and marketing representing the top three. The sample consisted of 52% seniors, 28% juniors, 19% sophomores and 1% graduate students. Analyses were performed using the statistical software, R (R Core Team, 2014).

The mean for *Exhaustion* for business students was 4.09 a very high score. Recall that students completed the self-report questionnaire at the end of the semester just prior to final exams a period of high academic demands and potentially high stress. This score is, nevertheless, very high when compared with scores measured in other professions where exhaustion is purported to be extreme. For example, exhaustion scores for social service and mental health professionals were 2.37 and 1.88 respectively (Maslach & Jackson, 1986).

Exhaustion levels in these students mostly likely dropped off markedly after the term ended as a result of an easing of academic demands. However, exhaustion is a cumulative condition where effects are likely to build over time. This suggests that many business students may carry some of its effects from one academic term to the next. Indeed, exhaustion levels in public accountants outside the traditional busy season remained at very high levels (Law et al., 2008; Sweeney & Summers, 2002).

Analysis of variance was utilized to determine whether gender, area of study, and year in school affected the *Commitment to Remain in School*. Among the different groups, no statistically significant differences in mean scores of the *Commitment to Remain in School* were noted. Bivariate Pearson correlations in Table 1 suggest that *Social support* is positively related to the *Commitment to Remain in School,* and *Exhaustion* is negatively associated with the *Commitment to Remain in School* and *Social Support*.

Table 1
CORRELATION MATRIX OF SOCIAL SUPPORT, EXHAUSTION AND COMMITMENT TO REMAIN IN SCHOOL

Social Support		
-0.24	Exhaustion	
0.16	-0.16	Commitment to Remain in School

Note: All correlations were statistically significant with p < .01

Table 2 presents two linear regression models. Model 1 examines only the main effect of *Exhaustion* and *Social Support* on the *Commitment to Remain in School.* Model 2 tests the possibility of *Social Support* moderating the effect of *Exhaustion* on *Commitment to Remain in School.*

Table 2
RESULTS OF REGRESSION MODELS

	Dependent variable:	
	Commitment to Remain in School	
	(1)	(2)
Exhaustion	-0.160[***]	-0.317
	(0.043)	(0.263)
Social Support	0.237[**]	0.043
	(0.109)	(0.339)
Exhaustion x Social Support		0.041
		(0.068)
Constant	5.385[***]	6.129[***]
	(0.483)	(1.321)
Valid Observations	290	290
R^2	0.070	0.071
Adjusted R^2	0.063	0.061
Residual Std. Error	0.968 (df = 287)	0.970 (df = 286)
F Statistic	10.741[***] (df = 2; 287)	7.267[***] (df = 3; 286)
Note:	[**]p<0.05; [***]p<0.01	

Model 1 indicates that both *Exhaustion* and *Social Support* have a statistically significant effect on the *Commitment to Remain in School* in the expected direction. However, the non-significant interaction term in Model 2 suggests that *Social Support* does not moderate the effect of *Exhaustion* on *Commitment to Remain in School.*

A limitation of the study is that the results cannot be generalizable to all university business students. The subjects represent traditional students from only one university, and that university's demographic student profile is somewhat narrow; most students are from the western United States and, most likely, represent a higher-than-average socioeconomic status when compared to university students generally.

CONCLUSION

The extreme level of exhaustion found in university business students in the current study provides sufficient motivation for further work in this area. As discussed above, exhaustion's cumulative and chronic nature may play a particularly damaging role in students' commitment to remain in school. Further studies, including those employing a longitudinal focus, would be helpful in better understanding exhaustions' antecedents and short- and long-term outcomes for university business students. For example, a longitudinal study examining college freshman and some negative psychological and physical outcomes of exhaustion (but not exhaustion itself) concluded that students experienced increased negative outcomes during their first year (Pritchard, Wilson, & Yamnitz, 2007). The authors recommend that universities proactively address these issues by offering (or requiring)

workshops for new students dealing with how to cope with stresses associated with student life. A formalized social support component could be included in such an initiative.

The current study's results indicate that social support has a positive effect on students' commitment to remain in school. However, despite a strong negative correlation between social support and exhaustion, social support did not appear to have a moderating impact on exhaustion's negative effect on student persistence. These results, taken together, suggest further study involving social support and *how* it affects both exhaustion and student persistence.

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INFORMATION IS NOT IMPLEMENTATION: FIDELITY TO A STATEWIDE PROFESSIONAL DEVELOPMENT PLAN

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ABSTRACT

This study focused on answering two research questions: (1) What were the programmatic factors that affected the fidelity to the FIP PD program (2) What were participating teachers' perceptions of the support provided for their school level professional learning teams? Data collected from 895 educators in a large scale statewide school improvement initiative was used to compare fidelity theory to what was implemented. The factors identified in this study indicated that "information is not implementation" and critical factors related to program content, duration, frequency of delivery, and interactive activities must be well-developed. Input, resources, and environment must be clearly specified, provided, and monitored before and during program implementation to ensure fidelity. Identifying these factors has practical implications to guide program evaluation, to inform program progress, and to determine program effectiveness in areas of staff reaction, individual learning, organizational learning, the use of new knowledge and skills in instructional practice, and student learning outcomes.

OVERVIEW

Funded by federal educational improvement monies, a Midwestern state department of education in the U.S. launched a statewide Formative Instructional Practices (FIP) professional development (PD) program to engage school leaders and teaching staff in utilizing e-learning with school level collaboration teams and applying formative instructional practices to enhance the quality of instruction. The statewide FIP PD program sought to improve the ability of K-12 teachers in more than 300 districts to implement formative instructional practices by supporting teachers through a period of change in instructional practice until they were able to see differences in student behaviors or achievement in thousands of schools.

The university based external FIP PD program evaluators (who were also the researchers) were charged with documenting local implementation practices as well as changes in educators and students throughout the life of the FIP PD project. As this large scale professional development initiative integrated many stakeholders' efforts, it was important to verify that the program was being implemented with fidelity in terms of adherence to the content, frequency, duration, and coverage, as well as input, output and continuity prescribed by its designers. What critical elements were in place or needed to be in place to support program fidelity?

INTRODUCTION

The content of FIP professional development was guided by the concept and features of "assessment for learning" (Stiggins, 2008). A national educational publisher provided content and design for five online learning modules emphasizing four core "assessment for learning" concepts. A locally based national nonprofit organization that promotes practices for improving educator effectiveness provided technology and structure to support the delivery of FIP professional development modules online. The state department of education outlined implementation guidelines for the FIP PD project and designated regional support personnel. Statewide FIP training followed a familiar sequence of train the trainers in initiating the program. The sequence originated with national content experts training regional specialists who in turn prepared district or building administrators and facilitators to guide teachers. The FIP PD model was designed intending that teachers would receive an overview of the FIP program from the local facilitator in face-to-face groups, then work through the online FIP modules independently, while regularly collaborating with in-house colleagues in professional learning teams.

By taking a blended learning approach that incorporated online learning modules, teacher-based teams, facilitation materials, and a regional system of on- and off-line support, the FIP PD program was designed to help local education agencies (LEAs) across the state move through an implementation pathway designed to create teacher facilitation, collaboration, and sustainability around formative instructional practices. Individual schools set their own timetables for when overviews, professional team sessions, and online trainings would occur at the school building level. Different approaches to providing on-site work included after school sessions, planning times, using substitutes to free up teachers, delaying start times, etc. When implemented with fidelity, the program aimed to equip educators to adapt successfully to changes in more than 300 LEAs involving thousands of schools and teaching staff. While implementing this school improvement initiative on such a scale, FIP PD preparation and support were intended to provide:

- Guidance for launching FIP PD training at the school level
- Consultation from regional specialists
- Training for FIP local facilitators for in-house professional development
- Blended learning, with interactive online courses and school level discussions
- Emphasis on in-house professional learning communities
- Materials to facilitate school wide and team-based professional development
- Resources to implement and sustain formative instructional practices

As FIP PD implementation was carried out, evaluators needed to determine whether the program was being implemented with fidelity in terms of adherence to the content, frequency, duration, and coverage, as well as input, output and continuity prescribed by its designers. External evaluators and program funding agency/designers needed to know what critical elements were in place or needed to be in place to support program fidelity.

PROGRAM IMPLEMENTATION AND FIDELITY

With new standards, assessments, accountabilities, evaluations, and various other PD initiatives on the horizon, attention to details of effective instruction and professional development is more critical than ever. Education policymakers and practitioners are developing increasing interest in formative instructional practices as a pedagogical vehicle, in part reflecting widespread reports in the education press about formative practices' potential

practices, supported by the concept of "Assessment for Learning" (Stiggins, 2008), place themselves at the heart of teaching and learning by strategically using formative assessments. Central to the model of formative instructional practices are 1) emphasizing clear learning targets, 2) ongoing collection of evidence of student learning, 3) providing effective feedback and, 4) fostering the ability of students to take ownership of their learning. These practices flourish in an environment in which teachers work collaboratively, parents understand what students are learning, school leaders support formative instructional practices, and students take ownership of their own learning processes.

To guide teachers statewide in developing FIP, a professional development program was developed with specific implementation guidelines to be observed by all participants. To this end, fidelity of implementation was essential to provide the designated professional development in the way in which it was designed to be delivered (Gresham, MacMillan, Boebe-Frankenberger, & Bocian, 2000). Fidelity means being faithful to the original design of an intervention both in terms of the detail of its components and the spirit or manner in which it was conceived (Holliday, Audrey, Moore, Parry-Langdon, & Campbell, 2009; O'Connor, Small, & Cooney, 2007). Fidelity must address the integrity with which key actions and specified procedures are completed and it must follow an explicit decision-making model.

In the FIP PD project, fidelity to the implementation plan was important at the state, regional, district, and school levels (e.g., implementation of the professional development process and activities) and the teacher level (e.g., interaction with the online modules, participation in professional learning teams, and informal collaboration). No program can have an impact if its essential elements are not implemented properly. However, if an implemented program adheres completely to the content, frequency, duration, and coverage prescribed by its designers, then fidelity can be said to be high (Yap, et al., 2000). Domitrovich, Cortes, and Greenberg (2007) identified three similar dimensions of implementation fidelity as input, activities, and output. Input refers to the necessary resources, supporting structure, and program personnel are identified and placed properly adherent to the program design. Activities include necessary steps and actions to be taking place in order to achieve the expected outcome-output. Participant adherence and competence were to be identified at different stages of program implementation.

RESEARCH PURPOSE

The purpose of this study was to identify specific characteristics of fidelity related to a statewide implementation of a statewide formative instructional practices professional development program. The aim of the program was to promote instructional change by encouraging adherence to guidelines of the state-sponsored blended training effort for teachers, administrators, and staff. Using the concepts of implementation fidelity outlined by Yap, Aldersebaes, Railsback, Shaughnessy, and Speth, (2000) as well as Domitrovich, Cortes, and Greenberg (2007) as a basis, the study addressed 2 research questions:

(1) What were the programmatic factors that affected the fidelity to the FIP PD program?

(2) What were participating teachers' perceptions of the support provided for their school level professional learning teams?

METHOD

Two main sources were used to collect data on program implementation: an online survey and teacher focus group interviews. The online survey was developed by the university evaluators and consisted of 34 Likert scale items along with 8 open-ended questions about participants' involvement in the FIP PD program. The survey was administered online via Google forms. Evaluators e-mailed survey links to FIP coordinators/administrators in the participating LEAs, who in turn e-mailed the link to school staff members. Eight hundred ninety-five (895) FIP PD participants responded to the survey between September 20 and October 29, 2012, a (14.0%) response rate. Descriptive analyses were conducted for Likert scale online questions.

Forty-five schools were also randomly selected for a site visit based on a clustered sampling technique to represent the geographic location, grade level, content area and social economic status of the schools. During the school visits, researchers conducted teacher focus group interviews to inquire about the fidelity of FIP PD program implementation. Thematic coding and reflective analysis approaches were applied to analyze open-ended survey questions and focus group interview data. Because this study was focused on the factors related to implementation fidelity, the following results only report the survey sections related to the aspects of input (supportive resources), activities (actions to achieve program outcomes), duration (delivery over planned time period), coverage (intended audience being addressed), frequency (program element delivered as planned), content (skills, knowledge to be addressed), output (participants complete planned activities, deliver services as intended) (Carroll, et al., 2007; Yap, et al, 2000), and related topics arising from the focus group interviews and electronic FIP PD satisfaction survey.

RESULTS/FINDINGS

Regarding programmatic input, about 25 - 35 % of respondents indicated that they did not have adequate support from building administration, colleagues, or FIP facilitators. Thirty-five percent (35%) also reported they had not set a schedule for or even formed a professional learning group after a year of FIP PD implementation. Addressing activities, 22 - 25% were not talking to colleagues about FIP and had not even formed professional learning groups, and many respondents indicated they had not participated in any face-to-face FIP PD. Seventy-six percent did not find the online modules to be engaging 57% reported that it was difficult to stay motivated as they worked through the modules and 84% found it to be overwhelming to complete the modules independently. Just 35% of respondents indicated that FIP professional learning teams were not active in their buildings. Regular discussion with colleagues (31.5%) and regular implementation of FIP (62%) demonstrated perspectives of project duration. Interview comments, however, indicated that focus on FIP PD was fading as the program went on. Coverage was reflected in a program enrollment of 39.63% of targeted educators statewide, and 75% of survey respondents reporting using FIP to improve instruction and student achievement.

Table 1
PARTICIPANTS' RESPONSES ON INPUT, ACTIVITIES, OUTPUT, FREQUENCY, AND CONTENT OF FIP IMPLEMENTATION. SOME TOTALS MAY ADD UP TO MORE OR LESS THAN 100% DUE TO ROUNDING AND NONRESPONSES.

Fidelity Features			
1. Input - necessary resources, supporting structure, and program personnel identified, placed, and properly adherent	**Agree**	**Neutral**	**Disagree**
-adequate support from my principal	626 (70%)	188 (21%)	46 (5%)
-adequate support from building facilitators	554 (62%)	244 (27%)	66 (8%)
-colleagues are valuable sources	547 (56%)	258 (29%)	54 (6%)
-set up attainable & measurable goals	356 (40%)	360 (40)%	141 (16)%
2. Activities - necessary steps and actions taking place to achieve the expected outcome	**Agree**	**Neutral**	**Disagree**
-talking to one another about FIP	511 (58%)	251 (10%)	98 (12%)
-organized learning group	**YES** 630 (70%)		**NO** 224 (25%)
-learning online is an engaging way to present content	198 (24%)		656 (76%)
-overwhelming to complete the modules by myself	94 (12%)		760 (82%)
-the modules are boring	147 (16%)		707 (84%)
3. Duration – program delivered over time period planned	**Agree**	**Neutral**	**Disagree**
-Discussing with colleagues on a regular basis	345 (31.5%)	342 (31.3%)	350 (35.2%)
-Implementing FIP in instruction on a regular basis	626 (62%)	244 (27%)	66 8%)
4. Coverage - all people who should be participating in or receiving the benefits of a program actually do	**Agree**	**Neutral**	**Disagree**
-using FIP to improve instruction	773 (78.7%)	132 (15.1%)	53 (6.2%)
-using FIP to increase student achievement	772 (76.6%)	130 (16.4%)	55 (7.0%)
- statewide enrollment in at least 1 module	# eligible 57,899	# enrolled 22,948	Participation 39.63%
5. Frequency – program elements delivered as often as			
-how often FIP learning group is meeting	Once/ week 286 (35%)	Once/month 267 (30%)	Not formed 253 (30%)
-how much time spent viewing FIP online modules	< 1 hours 186 (22%)	2-3 hours 382 (33%)	>3 hours 295 (33%)
-Number of F2F training sessions attended	None 110 (12%)	1-2 470 (42%)	>3 296 (33%)
6. Content – skills or knowledge to be delivered	**Yes**		**No**
-FIP has answered some professional questions or concerns	387 (47%)		458 (53%)
-FIP content caused changes in my instructional practice	376 (45%)		469 (55%)
-FIP content provided information I will use in the future	484 (58%)		361 (42%)
-FIP content provided good theory, but I am not sure how it applies to my instruction	80 (10%)		765 (90%)
-clear on what the modules are encouraging me to do	66 (8%)		779 2%)
7. Output – participants accomplish planned activities following procedures, deliver services as intended	Agree	Neutral	Disagree
-learned a great deal of practical information useful for teaching	415 (47%)	362 (40%)	89 (10%)
-noticed positive change in learning environment	319 (35%)	483 (54%)	61 (7%)
-changed my instructional practice	471 (53%)	317 (35%)	67 (8%)
- improved students attitudes	243 (27%)	505 (56%)	96 (14%)

Frequency varied as 21% indicated spending 0 or <1 hour interacting with the online content, and 16.5% had finished all five online modules. Face-to-face participation varied also from more than 3 sessions over the first months of FIP PD implementation (33%) to 1-2 sessions (33%) to none (12 %). Regularity of FIP learning group meetings varied from once a week (35%) to once a month (30%) to not having formed one yet (30%).

More than half of respondents reported that the FIP PD program had not answered professional questions or concerns or caused changes in instruction, but it did provide information they would use in the future. Regarding FIP online content, 67% did not think the content was easily adaptable to classroom instruction, and 37% did not find that the FIP online modules showed or described application activities that they could readily implement in the classroom.

As for output, over half (56%) indicated that their school did not yet have clear FIP goals, and 50% indicated that they had not learned a great deal of practical, useful teaching information as a result of FIP PD participation. About 75% of respondents felt that FIP training would improve student achievement and their instructional practice, yet more than 70% indicated that their students' attitudes had not yet improved based upon strategies implemented as a result of FIP, nor had they changed their classroom instruction to date.

Table 2
SELECT COMMENTS FROM PARTICIPANTS REFLECTING FIDELITY FEATURES

"Teachers can meet during their content planning but I am not sure how much, if any, time is spent on FIP." (input, frequency, activities)

"Principal support has been great - I have no idea who the FIP facilitator is." (input, duration)

"I don't have enough FIP knowledge to use it in my classroom. (input, output)
"FIP implementation in my school is truly up to the instructor, and from what I've seen, many teachers are not putting the strategies to use." (output)

"Right now we have so much to do … that FIP discussions have been left behind. I am using what I had in place at the time, (Learning Targets, I can statements, & have created formative assessments and are [sic] using them weekly, but the discussion around out building is mostly [teacher evaluation].) But I do feel the FIP practices are helping me and my students reach the SLO targets." (activities, output, content, duration)

"My colleagues usually come to me about different ways to conduct formative assessment" (output, frequency, duration)

"Weekly TBT meetings, time for substitutes, professional development released time for FIP training" (frequency, duration)

"Common lunch periods for subjects (in place prior to FIP training), allows for some discussions regularly." (content, frequency, input)

"Module #2 was VERY helpful in teaching me more about clear learning goals." (content, coverage, input)

"The variety of PD topics has led to a disjointed FIP PD process." (content, input, coverage)

"We had fip [sic] groups last year--but with the slo [sic] and 3rd grade guarantee requirements we have not had a chance to work through fip [sic]. I have not even heard if we are going to start them." (coverage)

"I feel like what we've learned in our FIP modules was just in time and very useful with our new state evaluation system." (coverage, input, output, content)

"last year we had weekly meetings for a while, but most things have to do with SLOs now" (duration, content and frequency)

"My principal provides adequate support and feedback when it comes to FIP." (input)

Table 1 presents the frequency and percentage of the participants' reporting on input, activities, duration, coverage, frequency, content, and output of FIP implementation in detail.Thematic coding of the opened-ended survey responses and focus group feedback further explained input, resources, interactions and activities related to implementation fidelity. Respondents' comments indicated that the FIP content was not new, but they would like to know how these concepts can be applied in the classroom setting to guide instruction and promote learning. Lack of support from regional FIP specialists left schools to make their own decisions regarding implementation. Many teachers wanted clarification of FIP PD

program goals and felt that they were on their own to figure out what classroom applications should look like.

Teachers had full access to the online learning modules, however, "information is not implementation," as mentioned by one participant, and responses indicated that educators would benefit from interactions with other schools also implementing formative instructional practices. A lack of time for face-to-face PD sessions or meeting with professional team members inhibited professional development as well. Table 2 provides quotes from surveys, citing specific experiences with the FIP PD program, and which features of fidelity they reflect.

All of the fidelity features mentioned above were addressed in the initial plan of the FIP PD program, but were not clearly communicated to all involved. Teachers, administrators, facilitators and regional specialists all viewed their own and others' roles and responsibilities differently, resulting in a wide variation in acceptance and implementation of the program plan throughout the state.

DISCUSSION

A close examination of the FIP PD program aligned with indicators for program fidelity theory showed some inconsistencies, particularly with regards to input. Careful, thorough planning provides the foundation for professional development (Guskey 2014), and sharing targets is key to learner buy-in (Chappuis, Stiggins, Chappuis, & Arter, 2012). Additionally, any new plan must specifically outline actionable steps or protocols that reflect fidelity indicators as identified in this study to yield significant instructional change and school improvement (Yap et al, 2005). Participant buy-in to the FIP PD plan was not achieved as a number of individuals expressed that they did not have a clear picture of the goals of the FIP PD program or how the training was to be carried out. This clearly underscored that simply introducing or implementing a school improvement initiative is insufficient to ensure fidelity to a proposed plan.

Likert scale survey items, opened-ended survey responses, and focus group interviews shed light on inconsistencies in fidelity to input in this statewide PD program as well as specific factors that influenced fidelity to the planned FIP PD protocols. The importance of organizational supports in implementing PD experiences (Guskey, 2014) was brought up through responses from participants, indicating that perceptions of available support differed widely among schools. This could have been a result of unclear directives from program designers to those carrying out the plan, or differing interpretations by those charged with supporting the PD at different sites.

There were widely varying amounts of face-to-face PD opportunities, including professional activities with learning teams (a cornerstone of the FIP PD plan) and organized PD sessions within and among schools. Required backing from principals and building FIP facilitators and regional FIP specialists differed as well. Participants indicated in Likert scale survey items that support from administrators for acquiring content such as knowledge of and skills in formative instructional practices, planning instruction, and carrying out collegial discussions in professional learning teams was adequate, but their extended comments indicated such opportunities were sparse or not focused on FIP. Communicating a clearer vision of program expectations to all stakeholders could have resulted in more implementation consistency across the state.

Focused individual building leaders and strong school cultures that valued professional learning were linked to the level of FIP PD program fidelity, participation and collaboration and output. On paper, the original FIP PD plan outlined specific protocols for meeting the needs of teachers, yet the data indicated that many of these program aspects were

not implemented as planned. For example, researchers noted that despite teachers' perceptions of support from principals, many participants reportd that their FIP facilitators and colleagues were not as supportive. Many participants were unclear about what the program goals were and what they should be doing. If FIP PD participants had understood all roles more clearly, there might have been more uniform and effective program execution.

All of these instances of uneven implementation indicate that schools must value the input and content offered, provide adequate time to meet and plan and carry out activities, as well as clarify expectations of all professional output in order to ensure fidelity to the plan (Domitrovich, Cortes, & Greenberg, 2007). Unless providers take responsibility for adequate preparation for introducing new PD, teacher engagement and motivation for change, plan implementation is undermined. Further placing output in question, about half of the teachers reported they were not sure how FIP PD content would apply to their work or that they were not learning much from the program, even though it is important for teachers to see how the PD offerings enhance their own content and pedagogic knowledge Guskey (2009). These feelings that FIP PD was not offering new or useful information might have affected teachers' perceptions of the support offered, or caused them to conclude that the program simply was not needed or that there was no point in following through with it as prescribed. FIP PD content was less likely to be understood or included in discussions of professional practice when teachers were unclear on what program goals were or what to do within the FIP PD program. This held true for the face-to-face as well as the online input and content, and may have influenced fidelity to planned duration and frequency of interactions, as participants reported spending little time interacting with FIP PD online modules and one another.

During focus group discussions, many teachers expressed a feeling of being overwhelmed with the number of initiatives being introduced simultaneously or in rapid succession. However, it was noted that in schools where the FIP PD program aligned with prior school improvement efforts (e.g., writing and sharing learning objectives), FIP PD was enhanced. In schools where prior or current efforts focused on other forms of change (e.g., learning about and implementing new teacher evaluations or new academic standards) PD efforts and teacher focus were less concentrated on FIP. Where responsibility for the adoption of the plan was diffuse and where school and program structures did not foster communication with specialists, colleagues or others with FIP expertise (Guskey and Yoon, 2009), adherence to the FIP PD program plan was less likely.

In the FIP PD project, fidelity to the implementation plan was important at the state, regional, district, and school levels, even to the teacher level, to ascertain if the program as planned had had an impact on teachers and students (Gresham et al, 2000). Yet the level of fidelity was not shown to be consistently high throughout the state. Researchers found that traditional Likert scale responses presented a picture of the level of fidelity in this FIP PD program and probing questions brought out many comments that clarified perceptions participants held. A number of the comments helped to explain why some participants were not eager to follow prescribed protocols as outlined by FIP PD program developers and planners. In order to increase school improvement, future study needs to address factors that increase or maintain fidelity to PD programs and those that do not. The results of this study reflect the status quo of many large scale current school improvement issues.

IMPLICATIONS

Numerous factors affect fidelity in implementing professional development programs, including the characteristics of providers, organization(s) responsible for implementation, program participants, and the community in which implementation occurs. Additional key

components include ongoing and clear communication about program expectations and goals, continuing program support systems at different levels such as training, technical assistance, local and regional support, and sharing program exemplars (Carroll, Patterson, Wood, Booth, Rick, & Balain, 2007; Guskey, 1999). Voices from teachers participating in the FIP PD project echo these factors. In addition, implementing a comprehensive teacher professional development initiative to improve instructional quality is challenging because of different organizational structures, school cultures, priorities, and resources. The challenge of fidelity to a professional development plan was particularly complicated in this study due to the wide scope of the project and the many other school improvement initiatives taking place simultaneously. The factors identified in this study indicated that "information is not implementation" and critical factors related to program content, duration, frequency of delivery, and interactive activities must be well-developed. Input, resources, and environment must be clearly specified, provided, and monitored before and during program implementation to ensure fidelity.

Identifying these factors has practical implications to guide program evaluation, to inform program progress, and to determine program effectiveness in areas of staff reaction, individual learning, organizational learning, the use of new knowledge and skills in instructional practice, and student learning outcomes (Guskey, 1999; 2002). Though far more research is needed, this study identified specific aspects of this FIP PD program that may contribute to improving implementation fidelity, and warrant consideration by those designing and implementing other large scale or statewide school improvement initiatives.

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A SYSTEMIC VIEW OF STUDENT SELECTION PROCESSES FOR UNDERGRADUATE BUSINESS PROGRAMS

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ABSTRACT

Using a systems thinking approach this paper identifies and evaluates processes used to select students for undergraduate business programs. This systemic view recognizes that the student selection process is one component of the business program and that the business program is one component of the larger university. The focus is on the identification of an appropriate method to select students for a program rather than on the details involved in the implementation of any specific plan.

We recognize the impact that university admission policies have on program specific processes as well as the interrelationships among components of the specific program. We identify how program-level student selections process can impact (and be impacted by) financial, physical, faculty, and staff resources; program mission; curriculum; and desired learning outcomes.

Student selection processes are classified into five increasingly restrictive categories. The categories differ in terms of the amount of administrative supervision required, the ease of communication, the desired level of trade-off between breadth and depth of program, the need to manage program capacity, and the desire to select students based on a combination of academic and non-academic criteria.

We use The Three Question Improvement Model to guide the selection of the most effective and efficient option for the program. The first question, "What are we trying to accomplish?" leads programs to discuss issues related to enrollment management and capabilities of students. The second question, "How will we know that a change is an improvement?" identifies criteria for evaluating options for student selection processes. The final question, "What changes can we make that will result in improvement?" looks at the advantages and disadvantages for each of the five categories of selection processes identified. By comparing the advantages and disadvantages for each option, a program can evaluate a change from their current approach would be a better "fit" for their situation.

INTRODUCTION

Undergraduate business programs work to attract, retain, and graduate students who are equipped to pursue successful careers. Few would question that the characteristics of the students entering the program have a profound impact on the resources needed to move them through the coursework required to graduate. The Association to Advance Collegiate Schools of Business (AACSB, 2015, p. 23), The Association of Collegiate Business Schools and Programs (ACBSP, 2014, p. 23), and The European Quality Improvement Systems (EQUIS, 2013, p. 26) all include standards related to the effective alignment of student admissions with expected program and learning outcomes. Therefore, the admission process must be aligned with the business program

mission. In turn, the quality of a program's graduates will influence the quality of future applicants.

Even though many undergraduate programs have developed program-specific admission processes beyond those for university admission, few studies have examined the most appropriate selection processes for any given program. The little research available on undergraduate business admission processes deals with (a) whether the policy and processes adopted by an individual program work for that program in terms of retention and graduation rates or (b) which admission criteria used by that program were most highly correlated with student grades or graduation rates.

This paper takes a broader view to illustrate how student selection processes are positioned within an individual undergraduate program and within the environment of the larger university. By recognizing that any student selection process is only one of many components in an educational system, we identify the impact of constraints at both the university and program level. We then identify five increasingly restrictive approaches to student selection and the potential advantages and disadvantages of each. Then we analyzed undergraduate business programs in the University System of Georgia to see how these cluster on the continuum of approaches to selecting students.

Finally, we use The Three-Question Model for Improvement (Langley, Nolan, Nolan, Norman, and Provost, 1996, p. 10) to guide our recommendations for choosing an appropriate student selection process for a given program. The Three Question Model asks (1) What are we trying to accomplish, (2) how will we know that a change is an improvement, and (3) what changes can we make that will result in improvement?

LITERATURE REVIEW

This study focuses on student selection processes for undergraduate business programs and how these are part of a larger system. Although there are many articles related to student selection for graduate business programs (Adams & Hancock, 2000; Christensen, Nance, & White, 2012; Deis & Kheirandish, 2010; Kass, Grandzol, & Bommer, 2012; Peiperl & Trevelyan, 1997; Pesta & Scherer, 2011; Yang & Lu, 2001) few studies have addressed student selection for undergraduate business programs.

Undergraduate Student Selection Processes

The most cited article related to undergraduate admission processes for business (Dohrman, 1962) provides limited direction for current programs. Recent studies have focused on the effectiveness of a single policy in a specific program. Morgan, Tallman, and Williams (2005) found using the grade point average (GPA) in lower division core classes and the overall GPA provided the best predictor of success in higher level courses for a sample of students at Northern Arizona University. Effectiveness is often measured in terms of retention and/or graduation rates or correlations between specific criteria and student success (Islam & Islam, 2013; Lawrence & Pharr, 2003; Pharr & Bailey, 1993; Pomykalski, Dion, & Brock, 2008; Truell & Woosley, 2008). For example, Islam and Islam found a disparate relationship between extra-normal ability in economic principles courses and performance in various other business disciplines. Truell and Woosley found a statistically significant positive relationship between business students' business statistics GPA and graduation. Pomykalski, Dion & Brock developed a structural equation model based upon student grades in four foundational business courses that

was found to account for 79% of the variability in final grade point average. A number of studies have addressed predictors of student success in specific business courses or majors, but these studies do not point to the development of student selection policies for a program (Anderson, Benjamin, & Fuss, 1994; Borde, 1998; Borde, Byrd, & Modani, 1998; Marcal & Roberts, 2001).

Systems Thinking

Senge (1990) pointed out that systems thinking is a framework for seeing interrelationships rather than collections, for seeing patterns of change, and for seeing wholes. He emphasized that systems thinking recognizes that cause and effect relationships are not linear that these relationships tend to create cycles. In addition, outcomes from systems are not a function of the individual components acting separately.

Ackoff (1999, pp. 15-16) described a system as a set of two or more elements that satisfies the following three conditions:

1. The behavior of each element has an effect on the behavior of the whole.
2. The behavior of the elements and their effect on the whole are interdependent.
3. However subgroups of the elements are formed, each has an effect on the behavior of the whole and none has an independent effect on it.

As a result, to understand any element requires recognizing their role in the larger system. The parts are then described in terms of their roles or functions in the larger system rather than as components to be analyzed separately.

Gharajedaghi (1999, p. 29) identified five principles of systems thinking:

1. Openness viewing the system in the context of its environment;
2. Purposefulness moving from information ("what") to knowledge ("how"); to understanding ("why");
3. Multidimensionality identifying complementary relationships that allow for creating feasible wholes from unfeasible parts;
4. Emergent property seeing characteristics that are unique to the system [and not present in any of the parts alone]; and
5. Counterintuitiveness recognizing that actions taken based on perceived cause and effect relationships sometimes result in outcomes opposite of what is expected.

Deming (1993) emphasized that a system must have an aim and that systems must be managed to insure cooperation between the components of the system. He pointed out that boundaries for a system may be narrow or broad and the bigger the coverage, the bigger the possible benefits, but the more difficult to manage.

Roberts and Kleiner (1999, p. 137-149) described five approaches people use to think about systems. These approaches were open systems, social systems, process systems, system dynamics, and living systems. As they pointed out, these approaches complement each other. An open systems approach sees the whole system as more than the sum of its parts and looks at ever increasing boundaries for a system. The social systems approach looks at the relationships and interactions among groups within an organization. A process orientation sees systems through the flows of information. Individuals using a systems dynamics approach tend to focus on how the reinforcing and balancing feedback loops influence the behavior of systems. Those taking a living systems perspective recognize that organizations are composed of living, learning individuals with the capacity to adapt to their environment.

Systems Thinking in Higher Education (with a Focus on Business Education)

Ison (1999, p. 108) approached systems thinking from an open systems approach when he described five increasingly broad boundaries for describing systems thinking in higher education. These included teaching systems thinking concepts and tools in a course, developing an integrated curriculum for a specific field of study where students are expected to recognize interdependencies between topics in multiple courses, applying systems thinking principles to management of a single program and/or educational institution, recognizing higher education as an interconnected system to address strategic policy issues, and seeing higher education as one component of a system of learning that takes place at the individual and organizational level. This continuum moves from the single course level to the academic major/degree content level to academic department/school level to the university level to a level that embraces all avenues of learning.

The concepts of espoused theories and theories-in-use (Argyris and Schön, 1974, p. 6-7) help delineate the progressively broad ways of viewing systems thinking in higher education. On this continuum, higher education moves from talking about what systems thinking is and how it works to modelling these theories through actions first as the containing systems and then as a component of a larger system. At the first level both students and faculty focus on espoused theories. Students in courses learn about systems thinking and faculty may present the theory, concepts, and some to the tools used to describe systems thinking concepts. As we expand the boundaries of use in higher education, systems thinking moves to modelling systems thinking on a small scale within the framework of teaching students, to applying systems thinking principles in the day-to-day decisions at a university, and most broadly to rethinking the role of higher education "fits" within a life-long system of learning.

In addition, as the boundaries of the system broaden, the application of systems thinking pushes higher education from an organization of individual learners toward becoming more of a learning organization. Friedlander (1984, p. 199) described organizational learning as occurring at the interfaces between persons, between organizational units, and between the organization and its external environment. Dixon (1994, p. 70) identified four elements in the organizational learning cycle: widespread generation of information, integration of new/local information into the organizational context, collective interpretation of information, and authority to take responsible action on the interpreted meaning. Senge (1990, p. 3) provided an often quoted definition for a learning organization as an organization "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together." Both organizational learning and learning organizations focus heavily creating shared knowledge and applying systems thinking to direct action toward improving organizational performance.

Historically, universities are organizations composed of learners rather than learning organizations. Most faculty reached their positions by developing expertise in a discipline (and often in a very specialized sub-discipline), the organizational structure of universities is typically around majors or programs, the evaluation and reward systems for faculty are aligned with advancing the discipline, and accrediting bodies place emphasis on faculty driven curriculum policies and assessment of learning is often focused on narrowly defined discipline lines. Accrediting organizations espouse the need for more holistic coverage while requiring faculty credentialing along disciplinary lines or primary teaching responsibilities (e.g., AACSB, 2015, p. 39, SACS standard 3.7.1, p. 30). Increasingly, faculty evaluations and tenure decision focus on

research in "quality" peer-reviewed journal, where some consider journals that combine different disciplines under the same title as a signal of poor journal standards (Beall, 2012, p. 3). Even with the strong silo approach that has been prevalent in higher education, there have been examples of systems thinking expanding beyond single classroom instruction.

Teaching Systems Thinking in a Course

At the lowest level students learn about systems thinking. Atwater et al (2008) surveyed faculty in the 63 top rated MBA programs to assess their knowledge of systemic thinking, the strength of belief in whether the topic should be included in MBA education, and if it was currently included in the curriculum at their schools. Only 35% of the respondents selected a definition of systemic thinking that included interaction between parts, changes over time, and feedback components; 10% indicated they were not familiar with the topic; and the rest selected a one dimensional definition of systemic thinking. In terms of the need for the topic to be taught in the MBA program, they found 74% strongly agreed with including the topic, but slightly less than half of these indicated that their program was currently including the topic. Although the number teaching systemic thinking was low, there were respondents from all nine disciplines included on the survey that systemic thinking was taught.

In a specific study, Zulauf (2007) analyzed the journal from 120 graduate students who had taken a Systems Thinking course over the previous three years. Three themes arose when they were asked to list their key challenges, questions, and insights as they learned to think systemically. The students listed 1) structure of systems influence the behavior of the members, 2) seeing the consequences of decisions on other parts of the system and a shift from blaming to seeing how one is contributing to the system, and 3) meta-learning of systems thinking (recognizing when they were thinking systemically, improved powers of observation, becoming better at questioning and inquiry, and recognizing perspectives). Noticeably missing from their journals was the notion of time delays between action and observed consequences.

Developing an Integrated Curriculum

On the surface, moving from teaching systems thinking in a course to providing an integrated curriculum sounds like a logical progression. In a sense this step could be considered a movement from talking about systems thinking to modelling systems thinking through the design and implementation of a curriculum--yet higher education has struggled to make this move. Many programs remain a collection of courses that are not linked leaving students to synthesize the knowledge on their own (Atwater, Kannan, & Stephens, 2008; Waddock & Lozano, 2013; Schoemaker, 2008). Increasingly, faculty are hired and rewarded for more narrowly focused discipline specific education and research backgrounds (Bennis & Toole, 2005) and evidence that the research is influencing management practice is questionable (Pfeffer & Fong, 2002).

In higher education an integrated curriculum can take multiple forms where students are expected to learn to think more holistically. A short-term example is Learning Communities where a cohort of students register for a block of courses where the instructors coordinate material. Rather than students attending 2 or 3 class meetings for each course a week, the course content is woven together in such a way that each lesson includes learning activities that tie the courses together. Abbondante, Caple, Ghazzawi, and Schantz (2014) found that providing a single 12-unit course in place of separate finance, management and marketing courses enhanced students' understanding of how the disciplines were integrated in a business environment. The students understood the business topics and were able to apply the principles, scored higher that

students who received the same courses separately from the same instructors, and expressed interest in future courses in the program being taught in an integrated format.

Attempts to develop entire integrated curriculums in business have met with less lasting success. Even with promising academic results, schools have abandoned integrated programs after a few years (Borin, 2004; Woddock & Lozano, 2013) citing funding issues tied to the need for faculty compensation and release time for research, questions about fit with mission from faculty not in the program, student communications between ones in the program and ones in a traditional program, difficulty recruiting students to programs that are substantially different from most, and a failure to have clear objectives at the start of the program.

Evers (1994, p. 492) notes that "calls for curricular integration are not new, but they always seem to fail. On many school levels, chair people of curricula areas are like lords of fiefdoms; they are not about to give up their positions of authority to move toward an integrated, systemic curriculum." Weil (1999) suggests that many of the changes that have been suggested are examples of first-order change (incremental changes in the current practices) when second-order changes are needed (a rethink about the fundamental purpose, values, beliefs, and assumptions). Banathy (1999) argues that systems thinking in education would equate to a shift from an instruction focused approach to a learning focused approach.

Applying Systems Thinking in the Management of a Program or Institution

Applying concepts of systems thinking in the management of a program or university moves toward the concept of organizational learning. Some examples of where principles of systems thinking have been applied to the development and management of programs include the growth in First Year Experience programs, the use of Learning Communities in General Education, coordination between Admissions, Enrollment Management and Financial Aid for transition issues, and redesign of programs with consideration of more than the academic content.

Haskins (2005) described the planning process used by The University of Virginia to redesign the year-long, required-curriculum phase of the MBA program to model the integrative nature of business as opposed to the more common view of delivering discrete, isolated parts. In addition to internal-integration of the curriculum components, this redesign also addressed the synergy developed by connecting curriculum, the school's overall strategy and mission, and the other components of the MBA program (affinity groups, career searches) in such a way that each component enhanced the others. By considering the logistics of the program along with the content, they were able to provide a better balance and pace as well as leveraging learning and efficient use of student time and school resources throughout the length of the program.

Many programs have addressed student transition into the university from a systemic approach that has enrollment management, student affairs, and academic faculty working in partnership to provide a holistic student learning outcome (Humphrey, 2008, p. 2). Alexander and Gardner (2009, p. 18) call for a comprehensive approach to the first year describing this saying this "deals with everything a campus does to, with, and for new students to strategically improve the foundational period for students' higher education."They point out assessing individual components of the first year experience must take into account all of the other pieces since these programs are intentionally integrated programs.

Learning Communities are a popular approach to establishing a cohort of students in two or more linked classes from different disciplines. The academic work for the linked courses is provided by faculty who work together to integrate material. Many Learning Communities include co-curricular components and can be for residential or non-residential students. Although

most Learning Communities involve first year students, some are offered at other levels. Zhao and Kuh (2004) found that participation in a learning community was associated with higher levels of academic effort, academic integration, and active and collaborative learning (p. 125); with gains in personal and social development, practical competence, and general education (p. 127); and for seniors who participated in a learning community at some point during college had higher grades (p. 124). Gordon, Young, and Kalianov (2001, p. 44) found that students who participated in learning communities had higher grade point averages when they had controlled for ACT scores, gender parental education, and income.

Örtenblad & Koris, (2014) conducted an extensive literature review to assess how relevant the idea of learning organizations was to higher education. Their conclusions call for adapting principles of learning organizations in higher education were somewhat counter-intuitive. They suggest an orientation that calls for a questioning-listening-encouraging-learning bureaucracy. This means that there should be an increase in double-loop learning (questioning the underlying assumptions in decisions), an increase in efforts to provide a learning climate with inter-disciplinary cooperation, and more listening to their staff and other stakeholders, while avoiding becoming organic in the sense of being student-customer oriented, flexible, and informal (p. 205).

Recognizing Higher Education as a Containing System and as a Component of a System of Learning

In 1997 the UK National Committee of Inquiry into Higher Education produced the "Higher Education in the Learning Society" report (often referred to as the Dearing Report). The report was intended to serve as a catalyst for change (Ison, 1999). The March/April issue of *Systems Research and Behavioral Science* published a special edition on Applying Systems Thinking to Higher Education responding to the recommendations of the report. In general, the Systems Thinking oriented authors felt that the recommendations in the report reflected the old paradigms and encouraged the Committee to apply more systems thinking from the classroom level all the way to the broadest use of the word learning.

In the United States many states cluster their public institutions of higher education into one or more clusters (e.g., the University System of Georgia, the University of Texas System, and the Florida College System). Then the institutions establish missions that are intended to be complementary to each other, and the system coordinates some activities such as management practices, funding requested, personnel policies, and some vendor selection processes.

When learning is viewed from a broader perspective, higher education (and all of formal education) is just one component of that system of learning. Senge, et al. (2000) used a living systems perspective when they applied the concept of a learning organization to education. They presented three levels where we can think about schools that learn at a classroom level, at a school level, and at a community level. Within this framework, higher education is in the middle tier that includes most formal education systems. When an organization becomes a learning organization, individuals and groups in organizations use their learning to change behavior and to improve their individual and organizational performance (Patterson, 1999).

Bui & Baruch (2010) suggested that with increasing demands for education efforts to transform higher education institutions into learning organizations would develop the organization's competitive advantage at national and global levels. Bak (2012, p 163) emphasized that for organizations to learn there needed to be an inward force to individual learning and an outward force linked to the contextual environment of learning. He pointed to the

strong commitment that higher education has to individual learning as well as three challenges: organizational culture, organizational structure and political challenges.

UNDERGRADUATE BUSINESS EDUCATION VIEWED AS A SYSTEM

Taking a systemic view of student selection processes as management processes places them in the third level of Ison's continuum (1999). As such, these processes are nested in systems of increasing scope. If the aim is to develop a successful undergraduate business program, the student selection process is a subcomponent of this system; and the undergraduate business program is typically one component of a larger system composed of all university programs. Systems thinking uses synthesis rather than analysis to discover the larger purpose of a system. The role of the system components is derived based on how they support the larger purpose. Figure 1 shows undergraduate business programs as the containing system for the student selection process and as a component of the larger university. We explored the implications of these nested relationships in order to consider how a program might optimize its selection process.
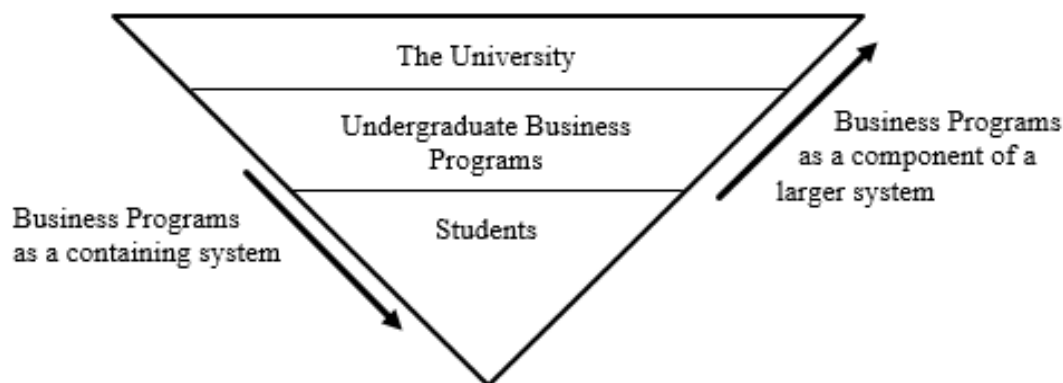
Figure 1: Undergraduate Education within a Hierarchy of Systems

The university's admissions processes will influence decisions related to developing a student selection process for an undergraduate program at a university. When the university has an academically selective admission process, the need for screening academic credentials for students entering individual programs becomes less important. When universities become more "open access," individual programs may feel a stronger need to apply academic criteria for selecting students. In either case, the demand for resources to support student and program success will be impacted by the university and program processes.

The Business Program as a Component of the University

Deming (1986, p. 4) illustrated a systems view of production, including suppliers, production, assembly, distribution to customers, and a feedback loop involving consumer research that led to design and redesign for improvement. Langford (1992) presented a similar view of formal education at the K-12 level as a model that included external and internal suppliers and customers showing students moving through the system (i.e., work-in-progress). Higher education was an external customer in that system.

When higher education is viewed as a system, there are many interconnected components. Figure 2 illustrates a systems view of undergraduate education. The most often recognized

element is the progression of students though the academic curriculum. In this example, the instructors of earlier courses are suppliers to the instructors of later courses. There are other customer-supplier relationships between academic departments and administrative units of the university (e.g., the Registrar's Office, Admissions, and Human Resources). Some external suppliers take on dual roles as supplier and customer (e.g., accrediting agencies provide status through a "seal of approval" while holding institutions and programs accountable for providing necessary services).
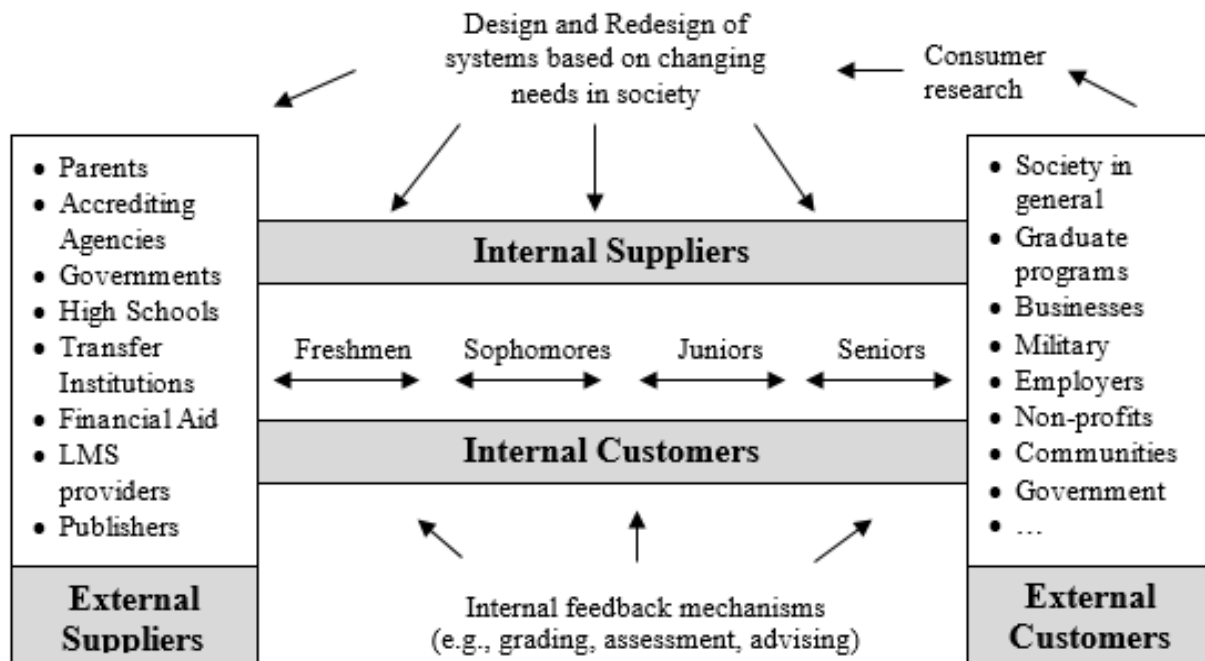
Figure 2: Undergraduate Education as a System

When we view the undergraduate business program as a component of the university, we recognize that policies and procedures at the university level have great bearing on program activities. For example, contractors and support services (e.g., LMS providers, financial aid, and student affairs) work across all units of the university. University-wide faculty policies regarding promotion, tenure, travel, course loads, etc. have a strong impact on the faculty available to support programs. In addition, relationships between components can be symbiotic. For example, without University Admissions, programs would have no students; without good programs, University Admissions could not attract students.

Business Program as the Containing System for a Student Selection Process

At the program level, some of the two-way relationships become more recognizable because we are close enough to see the intended and unintended consequences of our decisions. Some of the most obvious connections are to functions with easily recognized and direct ties to student learning (e.g., curriculum and assurance of learning). If the student selection process is liberal while the curriculum is academically demanding and sequenced, achieving learning goals in line with the demands of the program will require extraordinary support services and the associated financial resources to fund them. In addition, if the expectations are perceived by

students as too onerous, future students might opt for different majors, making budget requests harder to justify and (at the extreme) jeopardizing the continued employment of some faculty.

The student selection process is one of many components managed within a program. Some of the other components include faculty resources, budgets, assurance of learning, support services, physical resources, and academic programs. Recognizing how potential student recruitment and selection processes relate to each these characteristics and how actions from each of the functions impact student selection processes can help align activities to achieve desired program outcomes. Changes in any one of these components will have ripple effects on the other components.

"Mission Driven" Causal Loops

Although these two-way relationships are quite common, sometimes the underlying cause-and-effect structures are more difficult to recognize. One example is the relationship between a program's mission and its activities. To most people, the term "mission-driven" implies that activities are designed to accomplish (or make progress toward) a desired mission. In turn, the strategies adopted and actions taken will depend on that mission [Mission ==> Activities].

In terms of a student selection process, the mission-driven approach will lead a program to establish a mission, identify the characteristics of students who would be appropriate to enroll in a program, recruit and select students with the desired characteristics, reject students who do not possess the desired characteristics, and move forward. This method might be called a pro-active mission-driven approach.

The likelihood that enrollment and resources will align perfectly is slim, especially in the long term. Trade-offs will need to be made between the size of a program that can be effectively managed and the characteristics of the student body. Most student selection processes grapple with mismatches between demand and student body characteristics. Whether programs are capacity driven (i.e., depend on maintaining enrollment) or criteria driven (i.e., depend on maintaining academic standards), the characteristics of the students will vary based on interest and the admission standards of the university. At this point, a mission-driven approach will shift into a reactive mode, in which emphasis will be placed on allocation of the resources needed to help students achieve the desired learning goals.

Figure 3 illustrates the interplay between a program's mission and the student selection process. The upper arc represents the proactive mission-driven approach while the lower arc shows the shift to the reactive mission-driven approach. Effectively, recruitment follows the upper arc, and deployment of resources is tied to the lower arc. The closer the alignment between student selection processes and the mission, the easier the planning, budgeting, and allocation of resources will be.
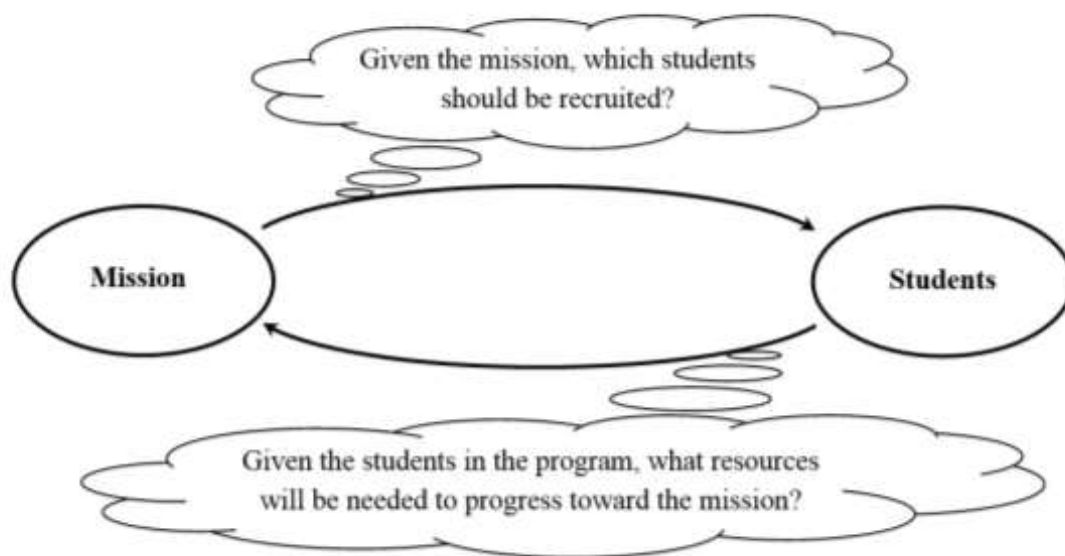
Figure 3: Proactive and Reactive Views of Mission-Driven Selection Policies

CONTINUIUM OF STUDENT SELECTION PROCESSES

In the midst of the broader educational system, university and program level constraints and consideration of the mission, a specific business program student selection process might be chosen. Typically, student selection processes are tied to academic criteria and/or mission-specific criteria. Academic criteria include "have completed at least x hours of coursework," "have a GPA of at least," "have completed a specific set of courses with a certain minimum GPA," "have earned a grade of at least on an admission test based on some learning goal," or similar requirements. Most of these criteria could be checked on an academic transcript. Mission-specific criteria might relate to co-curricular activities, completion of workshops related to some mission-related issue, service learning, an essay, and the like.

All programs have some form of student selection process even if the process is ad hoc, such as capping enrollment when classes fill or continuing to add seats as demand increases. Figure 4 provides a continuum of options for a business admission policy, ranging from an open door policy to a structured cohort-based policy. The first three options represent policies that do not involve separate admission to the business program. The third option provides programs the flexibility to include additional criteria documented in the database. The last two options require a separate, formal application that is reviewed prior to a student's acceptance into the program.
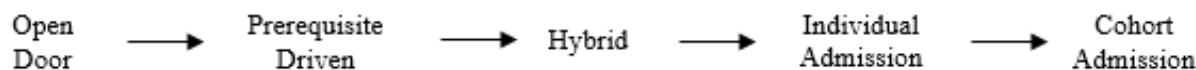
Figure 4: Continuum of Student Selection Processes

An "Open Door" policy permits any student admitted to the university to register for any course in the program. A "Prerequisite Driven" policy identifies the specific knowledge needed prior to enrolling in a course and requires students to complete the prerequisite course(s) before registering for advanced courses.

A "Hybrid" policy allows schools to augment a prerequisite-driven process with additional objective requirements contained in the transcript and/or additional checkpoints as students move through the curriculum. For example, some advanced courses may require students to complete certain general course requirements (e.g., advanced math, communication, or critical thinking), or have non-course related characteristics (e.g., GPA or earned hours). The use of different (more progressive) rules as students progress through the program (e.g., limited to specific declared majors or increased earned hours) can further refine the selection process.

An "Individual Admission" policy requires students to apply and be admitted formally to the program before taking courses limited to majors and allows admitted students to select courses on a term-by-term basis. A "Cohort Admission" policy requires students to apply and be admitted formally to the program before taking courses limited to majors; once admitted, students progress through the program as a group.

Using the Categories to Classify Programs

We attempted to classify the undergraduate business program admission policies for institutions in the University System of Georgia based on information provided in catalogs and on program websites. As expected, none of the policies appeared to be "Open Door." The policies ranged from being only prerequisite driven to almost a pure cohort. The majority of the policies fit into the prerequisite driven to separate admission range. Table 1 gives examples of wording for policies we classified as prerequisite driven, hybrid, separate admission, and cohort.

Table 1 CLASSIFICATION OF STUDENT SELECTION POLICIES	
Type of Policy	**Sample Wording**
Prerequisite Driven	Undergraduates admitted to the university can be admitted directly into the school. To enroll in a course, students must meet the stated prerequisites.
Hybrid	Enrollment in many courses requires students to meet eligibility requirements beyond the specific course prerequisites identified in the course description. These requirements are monitored through the registration system rather than requiring a separate application for admission.
Separate Admission	Students are responsible for completing an application to upper division form and submitting it for approval
Cohort	The below courses will remain in "pending" until you have registered for the entire three-course cohort

In some cases, the material provided was too vague to determine if some of the selection/enrollment/admission "criteria" were requirements that were checked or simply suggestions. In other cases, clear requirements for enrolling in advanced courses were listed, but whether students were required to initiate a separate application process was not clear.

In cases where there were separate admission processes, some programs indicated that they admitted all students meeting the stated criteria while others were selective in admitting students. Separate admission processes ranged from ones based on academic criteria (e.g., earned hours, various GPA calculations, or successful completion of specific courses) to ones that included additional requirements (e.g., registration with career services, meet with an advisor, complete a curriculum worksheet, or pay an additional fee).

EVALUATING OPTIONS

The Three-Question Model for Improvement

Because the Three-Question Improvement Model (Langley et al., 1996, p. 10) is consistent with evaluating options within the context of a larger system, we used it to direct our analysis. As the name implies, analysis and improvement are guided by three questions: (1) What are we trying to accomplish, (2) how will we know that a change is an improvement, and (3) what changes can we make that will result in improvement? Addressing these three questions will help programs identify the type of student selection process that best fits their needs. Implementing changes identified in the third question leads to learning through development, implementation, and evaluation of changes using the PDSA (Plan-Do-Study-Act) Cycle. The details of implementation of a student selection process will tend to be specific to a given program and are beyond the scope of this discussion.

What Are We Trying to Accomplish?

The number of students and characteristics of the students in the program will impact allocation of resources and progress toward the program aim. In terms of student selection processes, programs need to determine whether they will strive for a stable size (in terms of capacity) or a stable student aptitude (in terms of student characteristics). Maintaining a manageable capacity is important to programs in which demand tends to be highly variable.

If the focus is on maintaining a student body with identified characteristics, the size of the program will vary. Placing primary focus on characteristics will ease alignment with the mission, increase the likelihood that students are prepared to take courses in a logical order, and simplify communication. At the same time, this approach will make forecasting demand more difficult, resulting in larger swings in the way resources need to be allocated to match enrollment.

How Will We Know That a Change Is an Improvement?

All programs have some method (even if that method is unwritten) that determines which students will be able to enroll in specific courses or programs. Periodically, most programs question whether the current approach is optimal or whether a change is in order. A change in the student selection policy can be considered an improvement when any of the following criteria are met (without creating unintended negative consequences):

1. The program mission is more easily achieved.
2. The students are better prepared for coursework and more likely to take courses in a logical sequence.
3. Scheduling and planning for future program needs is easier due either to stable enrollment levels or to greater ability to predict/control enrollment changes (robust predictive ability).
4. The relationship between the business program and other sectors of the university is maintained or enhanced.
5. The new policy is easier to understand and communicate to students and other stakeholders.
6. The new policy is more robust to changes in student demand and changing resource availability.
7. The benefits of the new policy exceed implementation costs, such as administrative staff, communication expenses, and impact on other operations related to the program.

What Changes Can We Make That Will Result in Improvement?

Improvement could come from changes in the method used to select students for a program or in the way a given program is implemented. The initial response to this question needs to address the selection of an appropriate method. Given a continuum of five potential

student selection policies and the many factors that influence policy selection, what are the major advantages and disadvantages of each?

The "Open Door" policy provides little ability to predict enrollment, admit students based on mission directives, or to ensure adequate academic preparation for courses. Because all classes are on a first-come-first-served basis, business majors might have difficulty enrolling in courses they need for timely graduation. Consequently, potential majors might look to other programs that give them a better chance to complete their degree. The fact that the policy is easy to communicate, does not require costly human intervention for implementation, and consistently applies to all students rarely, if ever, offsets these drawbacks.

Because the "Prerequisite Driven" approach allows all students who have met prerequisites to enroll in a course, the demand for courses and programs will depend on the popularity of the program and the knowledge-base of interested students. Students should be academically prepared for coursework. The demand for resources will follow the demand for classes. As long as the prerequisites are published, (a) communication of the policy should be simple, (b) direct administration costs for the policy should be low, and (c) if the prerequisites apply to all students taking the courses, business majors are likely to face less competition from non-majors for advanced courses. However, the "Prerequisite Driven" approach does not allow for selection of students based on mission or control over increasing enrollment levels. In addition, the "Prerequisite Driven" approach is more likely to treat individual courses as separate, independent blocks of knowledge rather than helping students develop a systemic view of business.

The advantages and disadvantages of the "Hybrid" option depend on the specific rules established by the program. With clear communication and carefully selected rules, this approach would allow faculty in advanced courses to feel confident that instruction in previous courses will have prepared students for concepts that integrate learning across multiple business disciplines. This design could help programs achieve the mission, for example, to provide students with an integrated instructional experience. Based on the nature of the rules, a hybrid approach could improve enrollment forecasting for specific courses, helping manage capacity. However, communication of the rules for this approach might prove difficult.

Both of the separate admission application options share many of the same advantages and disadvantages. Both allow non-academic criteria to be included in the selection process, allowing emphasis on a unique mission. Both assure that students meet the requirements for courses, control the quality of admitted students when demand varies, and better forecast enrollment and demand for resources. At the same time, both of these options require careful communication, development of process for seeking, receiving, evaluating applications, and communicating decisions, processes for appeals, and specialized and costly human intervention and can lead to some awkward situations for non-business majors and transfer students entering the university.

Although scheduling for the cohort option is easier to manage once students are selected, problems arise when students change majors, switch between full-time and part-time enrollment, or do not successfully complete a course. Furthermore, students who are paying for school by working are more likely to need the flexibility of a "pick-and-choose" scheduling approach. When courses in programs are highly sequenced, (e.g., Accounting), students move through the major courses in a fashion that provides some of the benefits (and drawbacks) of a cohort.

CONCLUSIONS

The selection of a business program admission policy cannot be considered in isolation. The decision must be made after consideration of factors related to the larger educational system, the larger university, and the business program itself. The selected approach will have substantial impact on the demand and allocation of resources (financial, physical, and human) and on the ability of the program to offer a curriculum consistent with its mission. Even though each business program is unique, answering the following three questions will help most programs decide whether a separate admission process is appropriate:

1. Does the mission of the program require selection of students based on unique criteria not captured in the student database?
2. Does the demand for certain programs or limited resources require enrollment caps?
3. Can the program design a schedule for a separate application process that will "fit" within the university's current operating processes? (e.g., If admission to the university is required prior to application to the program, will new students (including transfers) be able to meet the deadlines for program application?)

If the primary desire is to maintain incoming requirements for each course, then any of the options beyond the "Open Door" model could be considered. If all criteria can be assessed by information available in the student database, then the "Prerequisite Driven" or "Hybrid" models would be the easiest to administer. The desired structure of the curriculum will determine which of these two academic criteria-based admission policies is most appropriate. Will the curriculum be broad (i.e., each course stands on its own or builds on a limited base of previous courses), or will the curriculum attempt to address interactions between disciplines and between multiple courses within a single discipline? If the curriculum is broad, the "Prerequisite Driven" approach would be appropriate for programs that do not need to control program enrollment. An integrated program would require faculty to know that all students in advanced courses have had exposure to a wide-range of knowledge. In this case, the "Hybrid" model could check the necessary criteria.

If the mission cannot be fulfilled without a review process to select specific students from the university student body, then only the individual or cohort admission policies are likely to work. In addition, only the individual and cohort policies can provide a means to capping program enrollment. To select between these two policy types, the program would need to assess the tradeoffs between student flexibility in scheduling (individual approach) and the advantages of structured planning (cohort approach). The key questions are whether the chosen policy would significantly enhance the quality of the student experience, improve allocation of limited resources, and make achievement of the mission more likely.

Once an appropriate approach is identified, the details for implementation need to be developed. This effort includes determining the specific evaluation criteria to be used, the timing for evaluation, and the administrative processes needed to carry out the policy. Further research is needed to assess how various implementation processes work in different academic settings.

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THE VALUE OF AN ACCOUNTING INTERNSHIP: WHAT DO ACCOUNTING STUDENTS REALLY GAIN?

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ABSTRACT

This paper examines the extent of hard and soft skill development in accounting students that completed an internship experience. Results of a survey of undergraduate accounting students are presented. Prior research in the field has focused on benefits of the internship experience, such as making connections between students and employers and giving students an advantage in the job market, but has not addressed the specific skills students develop from an internship. This study extends the research by identifying the level of development of 11 soft and hard skills in accounting interns at a public Midwestern university. In addition, the level of skill development was compared across different groups of accounting interns. Specifically, whether interns with an accepted job offer, interns with higher GPAs, or interns with longer internship experiences had greater skill development than those that did not. In addition, it identifies soft skills that employers seek in their employees, but may not be developed through an internship experience. Overall, the majority of students surveyed made progress on many of the soft skills needed in the workplace, but there was no significant difference in skill level across the different groups of students examined. Furthermore, although communication ranks among the highest skills that employers want candidates to possess, speaking in front of other people and written communication were not substantially developed for most accounting interns.

Keywords: Accounting Internship, Skill Development, Employment

INTRODUCTION

Many accounting students complete an internship as part of their educational experience before graduation. Several studies have documented the benefits of internship experiences (Callanan & Benzing, 2004; Cannon & Arnold, 1998; Gault, Redington, &Schlager, 2000; Gault, Leach, & Duey, 2010; Kessler, Danko, & Grant, 2009; Knechel & Snowball, 1987; McCombs & VanSyckle, 1994; Paisey & Paisey, 2010; Rigsby, Addy, Herring, & Polledo, 2013; Violette, Violette, & Hendrix, 2013). These advantages include solidifying students' choice of major, allowing employers to make connections with the most promising students for recruiting purposes, giving students a practical experience that enhances their ability to work with others, improving students' subsequent academic performance, and providing students' with career advantages. However, the specific skills students develop from an internship experience and how these align with what employers hiring full-time accounting students need has received little attention. In addition, the differences in skill development between student interns is not discussed.

From the employer perspective, prior research has identified the skills they require. Pernsteiner (2013) interviewed ten recruiters from small to large CPA firms (including two of the Big 4 firms) as well as from private organizations and found that the top skill they looked for in

candidates they hired was communication. In fact, the majority of the skills identified by the employers were soft skills rather than hard skills. Soft skills include people skills and personal attributes while hard skills are the technical expertise and knowledge that people need to know to perform specific tasks (Robles, 2012). The recruiters mainly used a student's grade point average to assess technical competence during the screening process and to determine whom to interview (Pernsteiner, 2013). Others have also documented the importance of soft skills for accountants in the workplace (Kermis & Kermis, 2010; Lin, Grace, & Krishnan, 2010; Meeting of the minds, 2008; Violette & Chene, 2008) and in business in general (Amato, 2013; Davos, 2013).

In addition to communication, other skills identified by employers included self-confidence, the ability to manage time effectively, people skills, initiative, integrity, work ethic, and problem solving skills (Pernsteiner, 2013). These are similar to results found by Robles (2012) in a survey of business executives. The top ten soft skills executives wanted their employees to possess were communication, courtesy, flexibility, integrity, interpersonal skills, a positive attitude, professionalism, responsibility, teamwork, and work ethic (Robles, 2012).

Considering that accounting employers require these skills for employment, it is important to understand where in an accounting student's educational career they are developed, and perhaps more importantly, if there are some skills that are not developed that need to be. One of the activities that many accounting students participate in is an internship experience. Considering that this is a hands-on learning experience, it is likely that interns develop many of these skills. Several studies have investigated various aspects of internships and skills. For example, Green, Graybeal, and Madison (2011) considered whether business student perceptions of the traits that are important to employment decisions are affected by an internship experience, as well measured the changes in student values of these traits before and after an internship experience. This study examined student and employer perceptions of the importance of soft skills, but not which skills students developed over the course of the internship.

Cook, Parker, and Pettijohn (2004) surveyed business interns over a 10-year period and found the majority agreed that they learned to work with a variety of different types of people and matured personally through their internship experience. Beck and Halim (2008) found the most significant skills developed by accounting interns in Singapore were personal and interpersonal skills while technical skills were of less importance. Students learned more about adaptability, interpersonal skills, and working under pressure than computer skills (Beck & Halim, 2008). Similarly, Maelah, Aman, Mohamed, and Ramli (2012) found soft skills of accounting interns in Malaysia increased, especially in time management, oral communication, and working in a group. Paisey and Paisey (2010) compared the skill developed of accounting and finance students between two Scottish universities, one with a work placement and one without. Students at the university with work placement developed skills in analyzing information from a variety of sources, time management, meeting deadlines, the ability to interpret financial information, oral communication skills, and computer skills (Paisey & Paisey, 2010).

Other studies have focused on aspects of student learning. Stanley (2013) investigated the benefits of a 100-hour work placement in Accountancy at an Australian University, and found that the experience enhanced student learning. Gracia (2010) considered the transition to a supervised work experience for students at a UK higher education institution, and the ramifications of students with different approaches to learning transfer.

This study differs from previous research in that the skills included in the survey were based on direct needs of employers hiring full-time accountants in order to identify potential gaps. In addition, it aims to reinforce prior research completed at Universities outside the United States

at an American University in terms of the types of skills developed by students completing an accounting internship, as well as extend the literature by exploring whether the level of skill development differs across students with particular attributes. Other studies (e.g. Rigsby et al., 2013) found accounting students with an internship experience who do not receive an offer from the employer they interned with receive more job offers. Therefore, it is of interest to explore the extent that students with internship experiences develop soft skills as this may be a reason for the increase in job opportunities. After all, strong soft skills are not only desired by employers in candidates they hire, but they also are helpful for the candidate in portraying desirable traits during the recruitment process (Chia, 2005). The attributes considered in this study in regards to differences in skill development included accepted job offers, GPA, and length of the internship.

Understanding more about the skills developed through an internship experience will help educators work with employers to design internship experiences that promote soft skill development, and help educators determine potential gaps in the skills developed during an internship experience that need to be addressed in other areas of the accounting curriculum. It is unlikely that the internship experience is a one stop experience for students to develop all of the skills they need for employment, but it is a valuable one that should be continuously improved to meet the needs of students and employers.

DATA COLLECTION AND RESEARCH METHOD

Accounting majors at a public Midwestern university were surveyed about their job search results for full-time accounting positions (number of applications submitted, number of job interviews, number of job offers, whether they had accepted a full-time offer, and the type of position accepted) and about their internship experience, including an assessment of the skills they developed using a 7-point Likert scale. The survey was sent to all 415 accounting majors to ensure that students who had completed an internship that was not for credit would be included. This University does not track internships that students complete unless they are for course credit, making it impossible to send the survey to only those that completed an internship. Considering most students complete an internship during their last year of their accounting program, approximately 85 to 100 of the 415 accounting majors would be in their final year. According to the Accounting Internship Coordinator, approximately one-half of accounting majors at this university complete an internship, leaving approximately 40 to 50 potential respondents.

In regard to the internship experience, students were asked to respond to questions about the outcome of their internship in terms of employment, and the type and length of their internship(s). They were also asked to consider 11 statements describing both hard and soft skills, and the extent that they had learned or developed them from their internship experience. The 11 statements students considered are listed in Table 1, along with whether each was considered a hard or soft skill.

	Table 1: Extent of Development from the Internship Experience
1.	Confidence in ability to work in an accounting position. (S)
2.	How to work independently and resolve issues on your own. (S)
3.	How to work with others. (S)
4.	How to write effectively. (S)
5.	How to communicate (network) with other people. (S)
6.	Understanding of the technical aspects of accounting. (H)
7.	How to manage your time and complete tasks in the most efficient manner. (S)
8.	How to speak in front of other people. (S)
9.	How to analyze data. (H)
10.	How to use your judgment in completing tasks. (S)
11.	How to use Excel or other computer software. (H)
Note: (S) or (H) indicate whether the skill was considered a hard (H) or soft (S) skill.	

These statements were developed by considering data compiled from employers who hire interns from this University, employer assessments of interns completed at the end of the internship, and reflection papers that students had written after their internship experience was completed. The major findings from each source are as follows. The majority of employers identified communication skills, time management skills, confidence, and the ability to work independently among the top skills they look for in candidates they hire for both internships and full-time positions (Pernsteiner, 2013). The common theme across student reflection papers was that they increased their knowledge of Excel and gained a better understanding of accounting from their internship experiences. Employer assessments of interns included ratings on the quality and caliber of their work, their ability to make judgments and take initiative, how well they plan and organize, their willingness to work with others, and favorable personal characteristics as they affect other people (tact, poise, disposition, etc.).

These major findings were then summarized into the 11 skill statements included in the student survey. In addition, since communication is a very broad skill, it was broken down into more specific statements. The fact that the statements that students evaluated were developed from comments made by employers recruiting at the same University made it possible to identify specific gaps in the skills employers want candidates to have and the skills gained from an internship experience.

Consideration was given to the value of making a comparison of skill development between accounting students who had completed an internship and those who had not. However, students develop soft skills from a variety of sources, such as from studying abroad and part-time employment. Therefore, the results would not have been useful in terms of determining the level of development from only an internship experience. In addition, having students consider a specific experience gave them something to reflect on in order to evaluate their level of skill development. They likely could remember specific instances where they did not know how to do something or where a supervisor had specifically talked them about how they completed a task.

In addition to questions about what they developed and the kind of internship they completed, students were asked if the internship changed their mind about the area of accounting they wanted to work in, their primary reason for completing an internship, how likely they were to recommend their internship experience to another student, and how valuable they felt their internship was to their career as an accountant. This was done to be able to compare the results from the respondents to prior research in these areas to validate the findings.

Sixty-seven students replied to the survey and 34 of those responses were from students who had completed an accounting internship, for a response rate of approximately 68% to 85%. 33 of the 34 responses were usable. Forty-two percent of the respondents were male and 58% were female and the majority were 22 to 23 years of age. Table 2 summarizes the demographic results of the respondents.

Table 2: Demographics of Interns		
Gender	**N**	**decimal**
Male	14	.42
Female	19	.58
Totals	33	1.00
Age	**N**	**decimal**
<20	1	.03
21	4	.12
22	17	.52
23	7	.21
24	1	.03
25	2	.06
>26	1	.03
Totals	33	1.00

ANALYSIS OF RESULTS

Overall, the majority of students (50%) felt that completing an internship was a necessary step to their career in accounting and 70% indicated that they were extremely likely to recommend their internship to another student (mean = 6.42). Other reasons given for completing an internship included that it was a hands-on experience (15%), it created connections with the firm in the hopes of gaining full-time employment (15%), they wanted to know what an accountant actually did (9%), it was a way to assist in the selection of a field of accounting (6%), and they felt pressure to compete with classmates (3%).

Although only 6% of the respondents indicated that the reason they completed an internship was to aid in their selection of a field of accounting, 36% of the interns changed their mind about what area of accounting in which they wanted to work after completing their internship. Students were given the option in the survey to provide a text response to why they changed their mind. Many of the responses indicated that they discovered something specific that they either did or did not like about a particular area of accounting. For example, determining that tax work was interesting or audit work was tedious. Table 3 shows the answers provided by students.

Table 3: Student Reasons for Altering Their Planned Field of Accounting	
1	I initially interned in privately held client audits. The concepts are very simple and more tedious than anything. I spent a few days with the risk assurance team and worked on IT controls testing, which I absolutely loved. The position I was offered and accepted was in the risk assurance team.
2	I knew I didn't want to audit governmental entities.
3	I originally didn't want to work in public accounting. After 2 summers in industry and 1 semester in public I found public to be way more interesting, fast-paced, and exciting.
4	I had originally thought that I would have gone into public accounting. However, now I am going into private accounting right away and I am very happy with my decision.
5	I would not like to work in the Tax dept for public accounting due to the hours and un-rewarding factors about it.
6	I was not stimulated by tax and audit work, because of this I decided to focus on obtaining a finance internship.
7	I was in a reporting area, I do not like day to day activities, I would rather go into consulting and big picture problems
8	I wanted to work in tax before internship. Now I want general accounting and finance role.
9	Thought tax was the most interesting part of my internship.
10	I really was unsure of what I wanted to do after graduation, but through this internship I realized that I really didn't want to go into cost accounting and financial analyzing.

The idea of being able to "try on" different jobs without having to commit on a full-time basis was further supported by the fact that 27% of the students completed more than one internship. Prior research also found that one benefit of an internship experience was to solidify a student's choice of major.

The total time that students spent at their internship was a minimum of three months, and 15% interned for more than one year. The results are consistent with the fact that most of the internships that students complete are full-time internships during the Spring semester as 67% of the respondents completed at least one internship with a CPA firm. In addition, given the number of students that completed more than one internship, it is reasonable that several students' spent more than three to four months. Table 4 summarizes the total time students spent on their internship experience(s).

Table 4: Total Time Spent at Internship(s)		
Time	N	decimal
1-2 months	0	.00
3-4 months	18	.55
5-6 months	2	.06
7-8 months	5	.15
9-10 months	2	.06
10-12 months	1	.03
> 1 year	5	.15
Totals	33	1.00

The skill that the most students (67%) felt they had significantly developed was confidence in their ability to work in an accounting position. Confidence is an example of a skill or trait that would be helpful to students in job interviews. Therefore, those students who interned at a firm that either did not offer them an available position, or did not have one to offer, can benefit from the confidence they gained throughout the recruitment process. Students with a high level of confidence may perform better in future job interviews.

A majority of students also felt they significantly developed their computer skills (64%) and understanding of the technical aspects of accounting (61%). Considering that employers do

not test candidates for technical skills when hiring, these specific skills would not directly help them obtain a job, but would help them once they are working full-time. In addition, having a high level of these skills most likely contributes to the confidence level of the student. Table 5 presents the findings for each of the 11 skill statements that students were asked to rate in terms of how much progress they made in developing that item.

Table 5: Progress Made on Skill Development		
Made Significant Progress (6 or 7 on likert scale)	**Skill**	**Mean Response**
67%	Confidence in ability to work in an accounting position	6.03
64%	How to use Excel or other computer software	5.79
61%	Understanding of the technical aspects of accounting	5.67
58%	How to communicate (network) with other people	5.55
55%	How to manage your time and complete tasks in the most efficient manner	5.42
55%	How to work with others	5.24
46%	How to work independently and resolve issues on your own	5.48
46%	How to analyze data	5.30
46%	How to use your judgment	5.30
33%	How to speak in front of other people	4.27
18%	How to write effectively	4.09

Overall, the majority of students made significant progress on several of the skills required by employers. However, communication ranks among the highest skills that employers want candidates to possess, and speaking in front of other people and written communication were only significantly developed in a few students (33% and 18%, respectively). This may be an area that educators need to consider when designing other courses and activities for students to participate in.

Given that employers hire candidates with strong soft skills, and these were among the skills students indicated that they developed from their internship experiences, consideration was also given to whether the skill development was different between those students who have accepted a full-time job offer, and those who had not.

It is not surprising to note that most of the respondents (52%) received an offer from the organization where they interned. However, for the analysis, students were considered to be successful in their job search as long as they had an accepted offer from any organization. After all, the organization where they interned may not have had any full-time jobs to offer. Of the students who received an offer after their internship, all but four of them accepted the offer. Two of the four that did not accept the offer, accepted an offer with another organization. Overall, 70% of respondents had accepted a full-time job offer. Table 6 summarizes these results.

Table 6: Summary of Job Offers		
Status	N	decimal
Accepted offer after internship	13	.40
Accepted other offer	10	.30
No accepted offer	8	.24
Total used for analysis	31	
Not searching for full-time job	2	.06
Totals	33	1.00

Two respondents were excluded from the analysis because although they had completed an internship, they were too far from graduation to be seeking a full-time accounting position. Overall, the mean was lower for those without an accepted job offer for all of the skills except working independently, written communication, and managing time. However, using a t-test to compare the means across the two groups, none of the differences were found to be statistically significant.

In addition to whether or not the student had an accepted job offer, consideration was given to whether there was a significant difference in development for those that had a longer time at their internship(s). The respondents were grouped based on total internship time less than six months and total time greater than six months. Similar to the previous analysis, although the means were higher in the group with more internship experience for all skills except written communication, speaking in front of others, using judgment, and understanding the technical aspects of accounting, there were no significant difference in the means between the two groups.

Finally, ANOVA was used to determine if there were any significant differences in skill development based on GPA. Respondents were grouped into four categories: GPA below 3.0, GPA between 3.01-3.29, GPA between 3.30-3.59, and GPA above 3.60. The number of respondents in each category were 4, 10, 9, and 10, respectively. There were no significant differences in the means across the groups.

LIMITATIONS, CONCLUSIONS AND IMPLICATIONS

One limitation of this study is the sample size. The sample size is relatively small, so the comparability of the study may be reduced. This is especially true of the comparisons made between those with accepted job offers and those without an offer. Since 70% of the students had an accepted offer, this left a small sample to make comparisons. The level of development was less in those without an offer, but not statistically significant. A larger sample size could find statistical significance. In addition, the sample was from only one University. Another limitation is that the survey instrument used for skill development has not been tested for validity and reliability. Future studies should include a larger sample size from multiple universities.

Accounting students gain several benefits from an accounting internship. It may help them decide in which area of accounting they should or should not work, and they significantly increase many of the skills employers require when hiring full-time accountants. Although the level of skill development is different across students, none of those differences are statistically significant to whether the students obtained a full-time job offer, how long they spent completing an internship, or their GPA. Therefore, it seems that it is helpful for all accounting students in terms of skill development.

However, there are several other possibilities that could explain a difference in the amount of progress made on developing soft skills. Some of these include involvement in extracurricular activities, the type of internship experience, and the level of the student's skill development prior to the internship experience. These are areas that could be explored in future research.

For accounting educators, the results pinpoint some areas of interest in terms of the accounting curriculum. First, consideration should be given to requiring an accounting student complete an internship experience. It would not only help them determine the best fit for them after graduation, but helps them develop essential skills needed for employment. Second, the results indicate that accounting students need to develop some skills through other areas of the curriculum. For example, communication ranks among the highest skills that employers want candidates to possess, but speaking in front of other people and written communication were not substantially developed for most accounting interns. Students should be encouraged to participate in other high impact practices that develop soft skills, such as a study abroad experience.

Third, although students completed a reflection paper upon the completion of their internship experience, those students who tested the survey prior to implementation indicated that the survey caused them to reflect further on their experience. Students may not realize the amount of skill development that they achieved from their experience, thus they may not be discussing important aspects of it in job interviews with accounting employers. This is an area that could be investigated further in future research.

Finally, there is an opportunity for accounting educators to work with accounting employers to enhance the internship experience. For example, perhaps there is a way for students to gain additional experience in writing if additional job responsibilities are added to an internship position. Further research in this area is needed to determine the specific tasks that interns are completing during their internship and the skills they are developing from them.

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TRANSFORMING ELEVATOR RIDERS INTO STAIR CLIMBERS: IMPACT OF A "TAKE-THE-STAIRS" CAMPAIGN

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ABSTRACT

The purpose of this study was to understand how a wellness (take-the-stairs) campaign could impact workday physical activity at a university setting. A Harvard Business Review article (Berry, Mirabito, & Baun, 2010) concluded that employee wellness programs could provide several benefits; for example, such programs have increased employee productivity, improved morale, and resulted in a return on investment as high as $6 in savings for every $1 spent on wellness. Our methods included surveying employees at the end of the six-week take-the-stairs campaign and observing the use of the elevator and adjacent stairs before, during, and after the campaign (10 weeks total). Results included significant differences (ranging from p<.001 to p=.002) in all areas surveyed that compared before-campaign physical activity with physical activity after the campaign. Comparing before-the-campaign behaviors to those after the campaign, respondents reported more days per week that they participated in physical activities; they were physically active for longer periods of time; they described their physical activity levels as being higher; and they took the stairs more frequently. A surprising finding revealed that respondents' BMI scores distributed evenly among normal, overweight, and obese categories. Open-ended responses on the participant survey cited the greatest benefits of taking the stairs were the enjoyment of enhanced collegial relationships throughout the college and overall improved wellness. Observational data revealed that more people consistently began taking the stairs and less rode on the elevator as soon as motivational campaign posters were posted. An implication for all organizations is how quickly and simply a wellness campaign can be implemented to provide immediate results. Not only did participants report gains in overall wellness; they also requested that we continue the campaign in the future because of the social aspects of enjoying the interaction with other employees, the incentive of team competition, and sense of accomplishment.

Keywords: Wellness, Workplace, Employee health, Employee Morale, Physical activity, Higher Education, Mixed Methods

INTRODUCTION

A *Harvard Business Review* article (Berry, Mirabito, & Baun, 2010) concluded that employee wellness programs are more than a "nice extra" (p. 105). In fact, Berry, Mirabito, and Baun's research data across 10 organizations suggested that wellness programs can return as much $6 in health care savings for every $1 spent. For example, such savings have been realized in the reduction in medical claim costs. Not only do healthy employees cost businesses less, but those employees also tend to stay longer, are more productive on the job, and enjoy higher morale. Puig-Ribera, McKenna, Gilson, and Brown (2008) also concluded that walking interventions in the workplace impacted employees' wellbeing & work place performance. A meta-analysis by Parks and Steelman (2008) provided further evidence that organizational wellness programs have a wide variety of positive impacts, including decreased absenteeism and increased job satisfaction.

Because our university has been recognized nationally and internationally for sustainability initiatives, faculty members at each of the academic units frequently integrate sustainability concepts into academic and service activities. In 2014, the Teacher's College Sustainability Committee established a goal to expand past sustainability efforts to pair these with personal and group wellness initiatives.

An examination of our university's employee participation in wellness campaigns revealed that the Teachers College faculty and professional staff ranked near the bottom in participation for colleges in university-wide wellness programs. More importantly, we believed that Teachers College professors should be at the forefront in modeling behavior for future educators, who have the opportunity to influence the issue of childhood obesity and wellness. It became apparent to our Wellness and Sustainability Committees that we needed to initiate a wellness campaign within the college. After considering more formal physical fitness activities, we chose to implement a program that was easily implemented and available to all who chose to participate. Since our college building spanned 10 floors above level with a lower-level bank of laboratories, we decided to initiate a take-the-stairs campaign.

The purpose of this study was to understand how a comprehensive wellness (take-the-stairs) campaign could impact workday physical activity. We also sought to measure the translation of those workday activities into self-reported physical activity outside of the workplace.

LITERATURE REVIEW

Research is inconsistent in that some research illustrated that the increase in stair climbing has been shown to sustain over time even after the prompts have been removed (Kerr, Eves, & Carroll, 2012) while other research suggests the amount of stair climbing returns to baseline levels (Kwak, Kremers, van Baak,& Brug, 2001). Previous research has established a clear impact on stair climbing within the work environment, but has not examined the impact on amount of exercise or other issues of wellness outside of the work environment.

Many public institutions have faced budget cuts, as outlined in Ball State University's former president's "Presidential Perspectives" email of 1/14/14. Wellness initiatives can reduce mounting health insurance costs, loss of employee productivity due to illness, and therefore, support the sustainability of limited university resources for other program purposes. We hoped to provide research data to inform our decision-making about increasing wellness through

initiatives in the workplace as a college, university, and as contributing partners to global efforts in increasing workday physical activity.

RELATIONSHIP BETWEEN GROUP WELLNESS AND WORK OUTPUT

These benefits of exercise have been supported in many studies. Demers (2014) concluded in a study of undergraduate students that a six-week exercise program significantly decreased self-reported levels of depression and anxiety in subjects in the exercise condition but not in the control condition. Blumenthal et al. (2007) discovered that individuals randomly assigned to an exercise condition had depression levels comparable to individuals placed in the antidepressant medication condition. There is also evidence that exercise promotes a healthy work-life balance and can be a key ingredient in preventing burnout (Brucato & Neimeyer, 2009). Beyond the psychological and physiological benefits, exercise and self-care have also been shown to significantly predict professional competence in a sample of pre-doctoral interns in counseling- related fields (Taylor & Neimeyer, 2014).

Positive effects have been documented in studies of initiatives related to businesses, as noted by Galinsky and Weisberg (2014). The authors reported on a project designed by TURCK CEO Dave Lagerstrom, who realized that previous attempts at health-related behavior change had not yielded positive results. Lagerstrom implemented a program focused on a healthy work culture. The company contained health-related costs with near zero growth in an economy where inflation would have projected health cost increases by 38% for the year. Four essentials of the program were: 1) values, 2) convenience, 3) personal involvement, and 4) community. The authors concluded that "focusing on well-being, as TURCK is doing, can lead to an improved work culture, healthier employees, higher levels of engagement, lower costs, and even higher profits" (para.last).

In a similar effort, Charlie Kim (2012), founder of Next Jump, designed a program to improve the culture of wellness in his company. He found that many "common sense" kinds of incentives such as small prizes and food do not yield long-term changes in behavior. Instead, he identified what was effective, and what was not, in attempting to encourage employees to exercise (See Table 1).

Next Jump has seen a sustained exercise pattern in 80% of its employees over a two-year time period. Those employees are consistently working out at least two times per week, after the successful motivational program. Exercise has been shown to decrease obesity, enhance sleep, increase productivity, and improve overall quality of life (Kim, 2012).

Table 1
Effective Strategies to Encourage Employee Exercise

What was effective….	What was not effective….
Gyms closer to office	Free gym memberships
Leaderboard for updated scores	Reporting at the end of the program
People who know each other; teamwork	Lack of collaboration/collegiality
Recognition programs (weekly), including a high recognition award (metal balls of steel) led to 100% participation in working out	Small prizes
Competitive teams so that all had a chance to win	Losing teams felt they could never win and gave up
Scheduled workouts with personal trainers	Self-Scheduling
Points done right	Cash rewards

(Kim, 2012)

METHODS

A recruitment email was sent to all Teachers College (TC) faculty and professional staff inviting them to participate in the research survey. Faculty and staff of the university's laboratory school and the Academy of Math and Science employees in Spring 2014 were recruited in the same manner. The research team created an online survey and committee members of the TC Sustainability Committee served as our panel of experts, providing comprehensive revision suggestions. A link provided participants access to the Qualtrics survey. A second email reminder was sent one week later.

Because of past return rate issues on TC surveys, we decided not to conduct pre-post surveying. The post-campaign survey provided the more important data for our study and we wanted to increase the probability that participants would respond at that stage of the wellness campaign. We also hypothesized that more participants were likely to complete a survey after they had enjoyed the campaign, rather than completing a survey beforehand. Seventy-eight faculty and staff agreed to participate in the study. They completed the survey after participating in the Take the Stairs project.

In order to complement the survey data, a sample of observational data was gathered to document elevator usage in TC throughout the take-the-stairs campaign. We tallied the number of people entering the elevators beginning two weeks before the wellness campaign, each week throughout the campaign, and two weeks after the campaign ended for a total of approximately 10 weeks (excluding spring break). Classroom usage with enrollment data was analyzed to determine when the most students arrived for classes at TC in terms of day of the week and time of day. Data were collected for two weeks during peak elevator usage times to determine the day

of the week and time of day that the elevators were most used. This corresponded to the period when classroom enrollment was the highest in the building.

Two observers positioned themselves in the lobby near the bank of two college elevators 20 minutes before those set of classes began and simply tallied the number of people who entered the elevators for 25 minutes (including 5 minutes after the beginning of those class sessions). Baseline data indicated that most of the elevator traffic occurred in this 25 minute time frame before class period began. The second observer primarily focused on the number of people using the stairs adjacent to the elevator, but also gathered elevator data. Two other sets of stairs were being used in the 10-story building, but our focus centered on the decision point at the stairway by the elevators. Observers' data was triangulated to improve accuracy. This observational data was gathered once a week on the same day and time (based on peak elevator use from baseline data). Descriptive statistics were utilized to analyze the quantitative data from the survey and the observations of elevator usage. Results were used to answer the research questions posed.

Several strategies were implemented to promote a successful campaign process. Team leaders volunteered to encourage faculty, professional staff, and students at TC to participate in the Take-the-Stairs wellness campaign. The president of the university kicked off the campaign at a TC meeting. The university's Director of Health Enhancement supported the college's efforts by posting banners and distributing other motivational materials to encourage all to "take the stairs." Adaptations were made for participants with disabilities or with other physical/health conditions that might require modifications or accommodations in order to participate.

There were three separate initiatives for the wellness campaign: TC faculty and staff, education students, and the university's lab school and boarding school/academy. This paper focuses on the faculty and staff at Teachers College as the target group representing the largest population. Informal measures substantiated that student leaders on our committee succeeded in involving a high level of student participation in the take-the-stairs campaign. Some of this participation was partially measured during weekly observations, but students did not participate in the post-campaign survey so were not an integral part of this study. The university's laboratory school and boarding school academy staff were the third part of this study. The campaign in those facilities was adapted as walking (rather than climbing steps), so data from that campaign is excluded from this paper's results.

A section of the IRB-approved survey asked participants to report their height and weight. Some individuals (49) reported both, 6 individuals only reported their height, and 11 individuals did not report either. For the 49 individuals whose BMI (body mass index) could be calculated, they had an average BMI of 27.729 (SD=5.444). There was one individual classified as underweight, 16 individuals classified as normal, 17 individuals classified as overweight, 14 individuals classified as obese, and 1 individual classified as extreme obesity. For statistical purposes, the underweight individual was aggregated with the normal individuals and the extreme obesity individual was classified with the obese individuals.

RESULTS

Both quantitative and qualitative results are provided. Survey quantitative results are described first. The qualitative data results included the analysis of open-ended responses from the survey and more informal observation data gathered weekly during a peak elevator usage timeframe.

Quantitative Survey Results

The first part of analysis utilized the survey distributed to Teachers College following the culmination of the Take the Stairs Campaign. Out of the 81 individuals who began the survey, 12 individuals reported they did not participate in the Take the Stairs Campaign and were eliminated from data analysis. Two others did not provide sufficient data for inclusion in the statistical analysis. Quantitative data analysis included the 66 participants with usable data and who reported they participated in the Take the Stairs Campaign. There were four dependent variables used from the survey related to the participants' reporting of their physical activity level: amount of days in a week they physically exercise, amount of time spent physically exercising, their self-description of their physical activity level, and how frequently they take the stairs. All of the items were based on self-report of the participants' responses of how they rated themselves post-campaign compared to the individuals' perception of their rating before the campaign began. Because the dependent variables utilized in the survey were ordinal (i.e. a ranked order between responses as opposed to a numerical order), it would be a statistical violation to utilize a t-test for comparison between groups so we used a Wilcoxon signed-ranks test to compare the differences between the groups in three out of the four dependent variables. The assumptions for the test were met for all dependent variables except the stair use frequency variable. Because the kurtosis values for prior (-1.031) and current (2.525) stair use resulted in a nonsymmetrical shape, it violated an assumption of the Wilcoxon signed-ranks test and a sign test was utilized for this dependent variable. Although Wilcoxon signed-ranks test and sign test are based off of positive differences, negative differences, and ties from self-reported pre- and post-data, Table 2 utilizes means and standard deviations for more easily comprehensible data for the reader to disseminate the differences between participants related to their BMI.

| | | Table 2A SURVEY RESULTS COMPARING PRE-POST CAMPAIGN OUTCOMES | | | | |

Table 2A
SURVEY RESULTS COMPARING PRE-POST CAMPAIGN OUTCOMES

Body Mass Index	N	How many days in a week do you physically exercise? [a]				How much time do you spend being physically active on those days? [b]			
		Before Mean (SD)	After Mean (SD)	Wilcoxon Z	p	Before Mean (SD)	After Mean (SD)	Wilcoxon Z	p
Normal	17	4.65 (1.41)	4.88 (1.36)	-2.00	.046	4.24 (1.09)	4.35 (1.06)	-1.41	.157
Over-weight	17	3.88 (1.22)	4.71 (.849)	-.241	.016	3.88 (1.50)	4.29 (.985)	-2.07	.038
Obese	15	2.80 (1.61)	3.47 (1.36)	-1.78	.075	1.93 (1.03)	2.53 (.83)	-2.46	.014

Table 2B
SURVEY RESULTS COMPARING PRE-POST CAMPAIGN OUTCOMES

Body Mass Index	N	What describes your current physical activity level? [c]				How often do you take the stairs? [d]		
		Before Mean (SD)	After Mean (SD)	Wilcoxon Z	p	Before Mean (SD)	After Mean (SD)	Sign test p
Normal	17	4.88 (1.22)	4.94 (1.20)	-1.00	.317	4.13 (.89)	4.35 (.61)	.250
Over-weight	17	4.06 (1.12)	4.29 (.92)	-2.00	.046	3.71 (1.21)	4.31 (1.01)	.008
Obese	15	1.93 (1.03)	2.53 (.99)	-2.71	.007	3.00 (1.04)	3.80 (1.08)	.008

[a] 1= Never; 2= 1 day; 3= 2 days; 4= 3 days; 5= 4 days; 6= 5 days or more
[b] 1= Less than 10 minutes; 2= At least 10 minutes;
3= At least 20 minutes; 4= At least 30 minutes; 5= More than 30 minutes
[c] 1= Not physically active on a regular basis now and do not intend to start; 2= not physically active on a regular basis, but am thinking of starting; 3= Trying to become physically active, or am physically active infrequently; 4= Physically active less than 5 times/week for 1-6 months; 5= Physically active 5 or more times/week for 1-6 months; 6= Physically active 5 or more times/week for 7 months or more
[d] 1=Don't use the stairs; 2= Less than one time a day; 3= One time a day; 4= 2-4 times a day; 5= 4 or more times a day

When asked to report their height and weight, 49 individuals reported both, 6 individuals only reported their height, and 11 individuals did not report either. For the 49 individuals whose BMI (body mass index) could be calculated, they had an average BMI of 27.729 (SD=5.444). There was 1 individual classified as underweight, 16 individuals classified as normal, 17 individuals classified as overweight, 14 individuals classified as obese, and 1 individual classified as extreme obesity. For statistical purposes, the underweight individual was aggregated with the normal individuals and the extreme obesity individual was classified with the obese individuals.

When examining the survey participants collectively, a Wilcoxon signed-ranks test indicated that participants reported more days per week that they participated in physical activities that caused an increase in their breathing or heart rate after the Take the Stairs Campaign compared to before, $Z=-3.132$, $p=.002$. When examining the survey participants collectively, a Wilcoxon signed-ranks test indicated that participants reported being physically active for longer periods of time after the Take the Stairs Campaign compared to before, $Z=-3.758$, $p<.001$. When examining the survey participants collectively, a Wilcoxon signed-ranks test indicated that participants described their physical activity level as higher after the Take the Stairs Campaign compared to before, $Z=-3.771$, $p<.001$. When examining the survey participants collectively, a sign test indicated that participants reported taking the stairs more frequently after the Take the Stairs Campaign compared to before, $Z=-4.903$, $p<.001$.

Table 3 PRE-, DURING, AND POST- STAIRS CAMPAIGN OBSERVATION TOTALS DURING PEAK 25 MINUTES			
	Dates:	**Stair Total Users:**	**Elevator Total Users:**
Pre-campaign	January 23, 2014	65	66
	January 30, 2014	41	59
First Posters Up	February 6, 2014	89	62
Average Elevator Use Before Campaign:		**62 users**	
Begin Campaign	February 13, 2014	72	52
	February 20, 2014	65	23
	February 27, 2014	79	53
	March 6, 2014	57	50
	March 20, 2014	88	51
End of Campaign	March 27, 2014	69	52
Average Elevator Use During Campaign:		**47 users**	
After Campaign	April 3, 2014	68	38

During the weekly 25 minute stair and elevator observations, baseline data before the take-the-stairs campaign began revealed that approximately 40% of people walked up or down the stairs beside the elevators and 60% of people chose the elevator. We noticed an increase in stair use when "take-the stairs" posters were prominently displayed by the elevators and throughout hallways on all 11 floors. As indicated in Table 3, pre-campaign elevator use hovered around 60 people and consistently settled in the low 50s during the campaign. Variability in the number of people counted each week could possibly be attributed to weather (less people in the building during severe weather, e.g.).

The participation of TC in university wellness programs dramatically changed from before the take-the-stairs campaign to afterwards. For example, in 2012-2013 the number of TC staff who completed a Life Health Assessment (LHA) began at only 13% (tied for last place

among all the university units) and jumped to 44% (first place at the university) after the take-the-stairs campaign.

Results of Open-Ended Survey Questions

Participants were asked two open-ended questions at the end of the survey:

1. *What benefits have you enjoyed because of your participation in the "take the stairs" campaign?*
2. *What suggestions would you offer to improve college wellness campaigns in the future?*

In response to the benefits they enjoyed, 39 of the 81 (48%) respondents provided input. More than one response was allowed on these open-ended questions. Respondents' responses to the benefits they enjoyed during the campaign clustered around two major themes (after participants' responses were coded through content analysis): social and physical. The benefits most cited included the collegial dimension and the overall improved wellness. Table 4 summarizes the benefits mentioned by participants. Some exemplars included:

- *I enjoyed the social aspect and the camaraderie;*
- *Overall feeling better, lost 5 pounds; and*
- *Have better aerobic stamina*

Table 4 BENEFITS ENJOYED BECAUSE OF TAKE-THE-STAIRS	
Participation	
Categories	Totals
SOCIAL	36
Sense of accomplishment	4
Fun	5
Collegiality	14
Competition	4
Incentives	6
Motivation	3
PHYSICAL	21
Endurance	3
Muscle Tone	2
Overall Wellness	13
Awareness of Need for Increased Activity	3
PROFESSIONAL	1
Increased Productivity	1
None	1

Suggestions to improve the campaign were given by 33 of the 81 survey (41%) respondents. These suggestions primarily centered on the time and technology issues associated with tracking daily and weekly stairs taken and the incentive program. Although increased productivity has been mentioned in the literature, only one participant mentioned that as a benefit

during the take-the-stairs campaign. Table 5 summarizes the suggestions offered by respondents.

Table 5
SUGGESTIONS OFFERED TO IMPROVE FUTURE C

Categories	
Incentives	7
Tracking	9
Increase Competitiveness	4
Continue/ Repeat	4
Add flexibility	5
Integrate more wellness/ awareness	2
Hokey or any savings?	2
None	1
Positives Only Repeated	6

Exemplars from participants on how to improve the campaign included:

- *I did not log my flights everyday as I continually forgot. I did the stairs but only recorded on average one day a week instead of every day. If you do something like this, I suggest different methods to verify activity e.g. with pedometers or something. It was a hassle going in this website and doing the log.*
- *Additional incentives such as reaching certain levels - 100 flights, 500, etc.*
- *Venue for wrist bands or pedometers to track or matching (grant).*

Six participants did not add any suggestions, but simply repeated benefits to express their enjoyment of the program. For example, one respondent indicated, "Do it again :)" and another stated, "I enjoyed the interaction with all of TC employees during the 'take the stairs' campaign."

LIMITATIONS

Recognizing that participants might not accurately self-report their height and weight, we were surprised that nearly 2/3 of the respondents actually reported as being overweight or obese. The researchers felt that asking participants to weigh in might prevent some from joining. One interesting finding is that the campaign did appeal to those who could most benefit from it.

CONCLUSIONS

Our research was focused on increasing physical activity during the work day. As Kim's (2012) gamification program suggested, providing structure and opportunity for employees in the workplace does appear to be a viable and effective strategy that can result in many beneficial outcomes.

Berry et al. (2010) identified six essential pillars that should be integrated into any successful wellness program: multilevel leadership; alignment; scope, relevance, and quality; accessibility; partnerships; and communications. Several of these pillars (multilevel leadership; scope, relevance, and quality; accessibility; and communications) played an important role in the success of our take-the-stairs campaign and study. Our take-the-stairs campaign benefited from

the efforts of several champions at multi levels of leadership, including the kickoff by the president of the university, faithful stair walking by the college dean, ongoing involvement by the university's wellness director, and energetic team leadership on each floor of the TC building. Also, the scope of the campaign did expand beyond an exercise-only program because all participants were required to complete an online Life Health Assessment (LHA). Completing the LHA better assisted employees in identifying potential health risks and possibly increased motivation to continue taking the stairs. Relevance was added as participants became engaged in the friendly competition between teams, as well as simply having fun together.

Successful programs are accessible and communicate effectively. This campaign involved minimal cost (only incentives) and convenience because two sets of attractive stairways were already available from the lower level to the 10th floor. In addition, the university's wellness director assisted team captains in communicating the campaign message. Posters marketing "Take the Stairs" were prominently displayed throughout the building, especially near the elevator bank on each floor. The electronic bulletin boards included a recurring take-the-stairs message with a recognizable logo. Team captains distributed encouraging messages and results on a weekly basis via email.

General participant observations further provided evidence about the campaign's impact. Our field notes during the observations illuminated several patterns of behavior. People began encouraging each other to take the stairs, "Nicole, you shouldn't wait (for the elevator). Take the stairs." Very few students actually recorded their stair activity (not more than 10 students each week), but the 15 minutes preceding the beginning of class periods showed a steady stream of students on the stairs. Some faculty walked down the stairs first before proceeding up to their target floor. (One person commented to an observer that he was deliberately adding flights to add to his log on each trip). Faculty members frequently were observed taking breaks together throughout the workday to meet their stairs goals.

As the campaign progressed, we noticed changes of behavior with some recognizable individuals as well. For example, one woman, who carried excess weight, waited for the elevator early during the campaign and read the poster hanging there. She turned abruptly, shuffled to the stairwell, and walked down the stairs to the lower level. Each week after that, we observed her heading directly to the stairs without even a glance at the elevator.

Specifically, in our study, we also found that:

- *Behavior regarding daily exercise was changed in the short term;*
- *Collegiality was positively impacted;*
- *Incentives provided motivation and were valued by participants;*
- *Weekly feedback was helpful to teams; and*
- *Digital format of reporting was not easily accessible.*

FUTURE RECOMMENDATIONS

The TC Sustainability Committee plans to use the results to guide further initiatives at the college. Results will also be used to provide other higher education institutions with ideas for their own wellness and sustainability efforts. As our committee reflected upon the take-the-stairs campaign, we created the following recommendations for future wellness endeavors:

- *Change team composition from beginning to midstream to maintain motivation for teams who are not as competitive.*
- *Redesign the reporting feature to be easier for participants to manage. Some participants wanted to keep track of their progress off-line.*
- *Utilize existing tracking technology, such as pedometers.*
- *Maintain effective elements of friendly competition, weekly feedback, and quality incentives.*
- *Intentionally plan for social and collegial opportunities.*
- *Publically post results to increase awareness and motivation.*
- *Increase the attractiveness of the stairways by displaying student art.*

Some of the pillars suggested by Berry et al. (2010) were not as closely aligned with our campaign as these should have been. Thus, the pillars of alignment and partnerships provide the foundation for further recommendations. The pillar of alignment needs more consideration in order to establish wellness as an integral part of the organizational culture. The take-the-stairs campaign made a noticeable difference immediately, but the sustainable impact is not as evident. Six weeks appears to be insufficient in maintaining habits of wellness. Our committee is engaged in devising a plan, based on research, to sustain gains over the long term. Finally, the pillar of partnerships was underutilized. Internal partnerships with the wellness department and sustainability committee provided a foundation to distribute the workload of the campaign. However, external partnerships with local vendors would be recommended for future endeavors. For example, many TC employees take advantage of delivery for fast food meals. Might a local restaurant consider delivering healthier options to the college? We intend to seek more information from respondents during future campaigns to assess the impact of these pillars.

If your organization is considering a wellness campaign, a simple strategy like "take the stairs" can make a difference. Such wellness initiatives can pay dividends in morale, return on investment, and improved collegiality. Frankly, we underestimated the impact a take-the-stairs campaign could make in transforming elevator riders into stair climbers.

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INCLUSIVE AND CATHOLIC: CHALLENGING THE MYTH WITH REALITY

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ABSTRACT

This qualitative study explored the multifaceted issue of cultural and religious challenges for an international Muslim group at a Catholic research institution. Measures employed by university community to assert the friendliness of campus to students from other religions and student perceptions of the effectiveness of these measures are surveyed to reveal the inclusion of students from several religious affiliations, especially Muslim students. The study was based on several data collection methods including, surveys, content analysis of religious prayers performed at university functions, and in depth interviews with Muslim students. However, this report is mainly focused on the interview findings. Data analysis revealed constructs that are pivotal to the case including, consistency in affirming the catholic identity of the university, intentionally avoiding the usage of solely Christian terminology, awareness of the culture of students from several religious affiliations, capitalizing on aspects of other religions that is connected to the Christian faith, and consciously spreading an atmosphere of appreciation for the other.

INTRODUCTION

In the post 9/11 era, it was like a dream to see Middle Eastern students marching into American campuses let alone Muslim students from Saudi Arabia enrolling at American Catholic institutions (Open Doors, 2011). Unprepared for such dreams to come true, college administrators had to improvise to come up with innovative techniques and strategies to accommodate and extend helping hands to these students. Therefore, building on aspects of inclusiveness and foundations of the Catholic tradition, this qualitative study explored the issue of cultural and religious challenges for an international Muslim group at a Catholic research institution. The study endeavored to explore measures employed by university community to assert campus friendliness to students from other religions and student perceptions of the effectiveness of these measures. The main goal was to make these available for administrators and faculty who aspire to increase the inclusivity of their campuses while maintaining their institution's religious identity.

GOALS AND LEARNING OUTCOMES

The study explores the case of Saudi Muslim students at Parish University (PU), a Mid-Western catholic research university. Cultural, religious and transitional circumstances that surround the presence of Saudi students on a Catholic institution are examined to reveal factors that might be influencing students' perceptions of the fit between them and the institutional culture. Measures of the institutional community to welcome, orient, and retain Muslim students are also examined to serve as a model of inclusive practice for student affairs administrators at catholic institutions. The view of several stakeholders including: faculty, administrators, student affairs professionals, and the Muslim students themselves would help to evaluate the efficiency of these measures and their adequacy given the complexity of the issue. Utilizing several data collection tools, the study endeavors to find answers for the following questions:

(1) How do students feel about their studies at a Catholic institution that is highly assertive about its mission and identity like the University of Dayton campus?

(2) What are some mechanisms of inclusiveness practiced by professional and faculty members to increase campus friendliness and inclusivity?

(3) How are the aforementioned mechanisms perceived by the Muslim students on campus?

CATHOLIC INCLUSIVITY

Although the name, catholic institutions, would sound as targeting a certain category of students, American higher education started as mainly rooted in the Christian faith. Later, those very institutions opened their doors to students from different denominations (Thelin & Gasman, 2010). While creating a heated discussion among scholars and practitioners, such inclusivity had two different stages. The local stage included the inclusion of students from Christian denominations other than Catholic. The global stage of inclusion targeted admitting students from faiths other than Christianity.

To Christian Students

In terms of involving students based of different Christian ideologies, there are many circulating views (Dosen, 2009, Topping, 2010; Walbank, 2012). The first is that Catholic institutions should remain exclusively Catholic. Topping (2010, p. 54) admits Catholic supporters of the Great Books approach have been known to find themselves in isolation. In a British study, Catholic school principals reported difficulty in grasping Catholic religious affiliated educational schemes supporting Catholic charities and pronouncing a Catholic vision whilst admitting and nurturing those who are not Catholic (Walbank, 2012, p. 179). Next, there are those who argue for the lack of Christian practices among faith based organizations such as Catholic Universities. This argument claims that contemporary Catholic institutions as a whole do not provide enough overarching moral framework that is necessary to create a "Christian" atmosphere in the conduct of students on campus (Dosen, 2009, p. 366).

Inclusively focused approaches suggest there should not be an issue of segregation between Catholic and non-Catholic students. Indeed, a nun was quoted by Scanlan (2012, p. 107) as refusing to work for any Catholic school that was not inclusive. In support of the nun's stance, the Pontifical Council for Inter-religious Dialogue defines the teaching of the Catholic Church as such, "Christians who lack appreciation and respect for other believers and their religious traditions are ill-prepared to proclaim the Gospel to them," as cited in (Walbank, 2012, p. 179). Likewise, Heft (2009) addresses the principles of all views maintaining, "Catholic colleges and universities are not just generically Christian, but explicitly Catholic with all that includes…There is a need to find ways to rediscover the truth that [our] universities [are] inclusive communities and [Christians and Catholics alike] embrace diversity, because we affirm that God creates everyone in the divine image" (p. 381-382).

To Students from Other Religions

However, the case stayed confined in the Christian faith until calls for inclusivity of students from other faiths began to spread early in the 20th century (Garrett, 2006). Hinsdale argued that the Catholic disciplinary tone is a monochromatic form of Anglo-American Catholicism (as cited in Dosen, 2009). Despite these anti-inclusive views, movements have been gradually emerging due to multicultural growth of students at Catholic institutions, as cited in (Dosen, 2009, p. 365). For instance, the evolvement of Catholic higher education pursuit of heightened global society between the 1960s and 1990s incorporated Islamic

studies into their framework (Dosen, 2009, p. 364). Moreover, as similar student demands increase for a more relevant curriculum, faculty will in turn begin offering courses that address the literature, history, and worldview of those ethnic groups not traditionally represented (Dosen, 2009, p. 363-364). Rodden (2012) emphasizes contemporary views on the acceptance of Catholic inclusion declaring what is most crucial is openness to Catholic practice while also exploring the Catholic faith and acknowledging its limitations (p.27). Rodden (2012) describes this "interfaith enterprise" to extend to Islam, Buddhism, Hinduism and even atheism (p. 27). Therefore, Catholic universities have and will continue to transform their perspective of studying various ethnicities, religions, and art to one that will enable people to better understand modern America (Dosen, 2009, p. 363-364).

Controversy of Inclusivity while Catholic

In the twentieth century, the debate surrounding Catholic institutions was their academic quality (Heft, 2009). According to secular academic standards and accrediting agencies, Heft (2009) argues, present day Catholic colleges offer better education than ever before. Thus, today's issues have shifted to the quality of "catholicity" within Catholic Education. Therefore, a heated discussion goes on as pertaining to the need for inclusion as opposed to asserting the identity of the institution with its catholic character (Morey & Piderit, 2006). There are many protestors to secular movements in alliance to what this terminology accurately represents. Topping (2010) argues that as a result of reforms in the 1960s, Catholic Institutions' undergraduate curriculum gravitated to Black history, Gender awareness, African-Americans, Latinos, Native American, and even Judaic Studies in turn losing all "epistemic confidence" that originally supported core curricula (p. 54-55). Hendershott (2011) similarly criticizes the authenticity of present Catholic institutions stating that Catholic identity is only proclaimed when politically convenient, possible benefits for recruitment are present or when raising funds from Catholic donors (p. 378). According to (Hendershott, 2011), many of these same schools deny that identity when state or federal funding is available, and secularization makes them more attractive recipients (2011, p. 378).

Other scholars believe that Catholic institutions, in order to keep up with increasingly secular and inclusive societal trends, must make advancements in doing the same while also avoiding the stigma of being an inherently exclusive system. O'Brien's point out there is, "A right to sectarian exclusivity on the one hand and theologies of love and compassion that require inclusivity on the other. This leads such institutions to invite engagement and participation by marginalized groups, while at the same time maintaining an institutional prerogative to discriminate against them in the name of Catholic identity," (as cited in Gauthier, 2012, p. 1). However, Heft (2009) explains the mission of Catholic institutions should not be restricted to a religious and moral formation, but also an intellectual one; emphasizing that Catholicism's history ranges anywhere from theology, philosophy, social teaching, political thought and music to aesthetics (p. 376). Rodden (2012) adds the necessary dynamics of an inclusive system are the adherence of Catholic schools to the finest of its spiritual-intellectual tradition *as well as* its openness and receptivity to the world to shape a more progressive environment (p. 22).

In addition, debates circulate around the development of Catholic Studies Programs (CSP), and the extent to which the Vatican should be involved. Originally designed to gain a clearer focus on Catholicism in both the curriculum and student life, CSP courses are meant to reorient the Catholic tradition as well as rescue religion from the societal tendency to think of it primarily in emotional and moral terms (Heft, 2009, pp. 369 & 376). From the scholarly standpoint, encouragement and acceptance of diversity through CSPs are heightened (Heft, 2009, p. 371). Yet, apprehensions among Catholic thinkers remain. Heft (2009) asserts, "CSPs marginalize Catholic content, sequestering them in a small area of the curriculum, or

reducing them to [optional] curriculum, such as environmental studies" (p. 369). The progression of these "inclusive" fears may lead to the emergence of the Vatican calling for the necessity of the "canonical requirements" and specification of Catholic Higher Education faculty and staff (Heft, 2009, p. 369). Steinfels counteracts the involvement of the pope by calling the Catholic education leaders to "take into consideration the actual realities of Catholic higher education in the United States rather than get a good report card from Rome,'" (as cited in Heft, 2009, p. 371). In relation to the Pope's involvement on CSP debates and overall anti inclusivity issues, Dillon highlights the stronger desire for the Church to change and relate more positively to the modern world as opposed to Church authority in making moral decisions (as cited in Starks, 2009, p. 4).

Challenges for Muslim Students

Challenges for Muslim Saudi students varied in types and severity. However, they fell under two main categories (Razek, 2015). First are the challenges that face Muslim Saudi students as any other international students on American campuses. Second are the challenges created by being in a religiously affiliated institution while coming from a very orthodox Islamic culture.

As International Students

Similar to other international students at American universities, Saudi international students face several challenges under various categories. Cultural challenges usually include being from a collectivist culture that stresses the value of the group raising it to a level higher than that of the individual. Another cultural challenge is the difference in behavioral norms between the culture of origin and the host culture (Long, 2005). Patterns of social interactions constitute a third dimension of the cultural challenge. These social patterns are usually related to hierarchical level, gender, and age (Razek & Coyner, 2013). The culture of origin in that case regulates what is deemed proper and what is not. Such norms are usually challenged with concepts like freedom of speech that is exercised in the classroom with students sometimes asked to challenge the teachings of the professors (Constantine, Okazaki, & Utsey, 2004). Another common aspect of unconformity is the extremely open gender relationships when compared to the reserved, or rather restricted, relationships in the countries of origin. Almost standing as a separate category are the stereotypes usually promoted by the media about both Saudi students and culture on one side and the Judo-Christian values and practices on the other side (Razek & Awad, 2012).

Linguistic challenges constitute a separate category as influencing several dimensions of the Saudi international student on campus. An often reported lack of language proficiency jeopardizes the student ability to negotiate roles in the learning processes with peers and with instructors. Limited linguistic capabilities limit the student chances in seeking help both from advisors or in utilization of campus support services. Low language proficiency makes cultural integration harder when students shy from engaging on campus activities and events because they are intimidated by their limited communication skills (Gloria & Ho, 2003). Such a barrier adds to the alienation of Muslim international students on American campuses.

Educational parity is another category of the challenges facing Muslim international students on U.S. colleges. Muslim international students usually come from countries with high school grade inflation (Razek & Awad, 2011). Moreover, international students are not required to take the SAT or the ACT standardized tests. Therefore, the educational content they have is not verified. Another aspect of the educational parity is the learning habits (Razek & Coyner, 2013). Educated in a system that value memorizations, tests, and theories, Saudi international students are faced with a detrimental difficulty to adapt to a more open system of educational practice that value inquiry, application, and problem solving.

At Religious Affiliated Institutions

Let alone being international students with all the challenges discussed above, Saudi students at PU experience a different situation where their most Islamic conservative values are challenged by a strong catholic institutional identity (Razek & Coyner, 2014; Shafer, 2012). The general assumption for a Muslim attending a catholic institution with a high religious identity is to feel that much of the practice does not connect to one's values and beliefs (Estanek, James, & Norton, 2006). Some example out of many include: the presence of Christian symbols of all over campus; crosses in the classrooms; payers at the beginning of some classes; starting and ending campus events with a service performed by a rector or a priest; mass bells; and celebrations of Christian holidays (Razek & Coyner, 2013; Shafer, 2012). However, the numbers of Muslim students are still increasing phenomenally on American catholic campuses.

METHODS

Building upon the relationship between the student cultural beliefs and the fit between their entry characteristics and their institution (Razek & Coyner, 2013; Tinto, 1993), this study aimed at examining the integration aspects of the increased presence of Saudi students enrolled in the various academic programs at PU, a Catholic private university. Approved by the Institutional Review Board, the study was developed based upon an initial study that utilized survey data and content analysis. After conducting initial site observations of religious activities and document reviews of admission criteria and recruitment material, in-depth qualitative interviews were conducted with 21 participants. The selection of participation was conducted utilizing Patton (2003) snowball technique where participants nominated each other as prospective participants. However, a maximum variation strategy was utilized to include different characteristics of gender, marital status, major, college level, religious conservativeness, and beginning or end of the educational experiences (Merriam, 2009). Interviews were transcribed and coded under a preliminary list of codes. The codes were analyzed under several emergent themes that include: first Encounter, religious identity challenges, and campus practices. Interview transcripts and analytical themes were verified by participants for completeness and validation.

FINDINGS

Study findings revealed various constructs influencing the continuous increase of Saudi students at PU. Some of these constructs included innovative strategies to orient, educate, and acculturate incoming Saudi students to campus life and the academic expectations. These included strengthening the social support elements, increasing comfort in the college environment, building social relationships, providing peer support, and raising students' self-confidence. Others aimed at raising the awareness of the campus community of the case of Saudi students. Other findings revealed the inclusiveness of the current educational practice at PU as a model for Catholic institution. Moreover, findings revealed a culture of acceptance and tolerance among the Saudi Muslim students.

Challenges

The challenges faced by Saudi students usually include the normal ones faced by other international students. For example, settling in which constitutes a phase where every international has to navigate while at the same time handling academic tasks and responsibilities. Another challenge is usually the linguistic abilities of the international students which limit the students understanding inside and outside of the classroom (Chong & Razek, 2014). The academic content usually represents another challenge when most of the

international students are not sufficiently prepared for the amount of reading or the depth of content that they are faced with once in the United States. Another aspect is homesickness usually influencing international students during their first periods away from their home country. However, given the certain characteristics of the Muslim students in the study, the challenges were actually different. First is the assimilation in the new culture and absorption of the norms of the Christian faith practiced at PU. Students varied in their degree of assimilations based on the strength of their religious beliefs, degree of openness to other religions, and previous experiences with religiously affiliated institutions. Students perceptions of symbols, images and icons of the Christianity frequently seen on campus public places from the classroom and the library to building entrances and on top of light posts. Another challenge for these students was the image of their own identity. Identity by definition is the reflections of one's personality integrating all the backgrounds and experiences one has gone through. However, the student participants in this study have been a very little time to develop such identity especially in the middle of a harsh transition from a centralized closed segregated society to an open, decentralized, and coeducational environment. Such transition did not allow them to develop identity images for themselves and consequently did not develop an image of their perception of Christianity. Some of the participants reported identity instability when looking at their perceptions of Islam as their own religion when they see it in light of another religious practice. However, these students were positive about the newly committed identity as a supportive mechanism in their new unfamiliar territory where they reconsider their beliefs, habits, and perspectives.

First Encounter

Participants reported that in their home country, Islam does not have that many pictures and statues, and so many symbols drawn on walls like what PU had as a catholic institution. Therefore, their first encounter with campus shocked them with all the symbols of Christianity all around. However, such a shock enabled them to reflect on the ideas of religion. Actually, some of them got deeper into the perception and looking at Jesus and Mary as figures in Islam and how Islam holds a high stature for Jesus Christ according to the Quran, "God said: O Jesus! I am gathering thee and causing thee to ascend unto Me, and am cleansing thee of those who disbelieve and am setting those who follow thee above those who disbelieve until the Day of Resurrection" (3:55) . Such high stature of Jesus and the Virgin Mary gave the participants a sense of comfort.

The daily interaction of the students meant a lot to them. One participant reflected on the differences between them as a group and other students saying, "I'm different just like the Ugly Duckling. Everybody looks the same, we look different in the dress and hairstyle and even in the food we eat". Such an alienating feeling may give the students a feeling of unrest or discomfort. However, participants shared that their American classmates had a hazy image about them as Muslims and about Islam as a religion and even what cultures are prevalent in their countries. However, they were concerned that they tried to correct this image but in vain because "no one has time to delve deeper into somebody else's culture or somebody's belief system to understand it. Some of the participants shared that often times, they encounter someone who is eager to listen. Salma shared, "One of my American friends asked me about my religion and I felt great. Wow!! That's like a lighthouse in the dark sea". The imagery that Salma is using reflects the perceived feeling of frustration and how one person asking about her religion meant a lot to her. Participants reported that they are always happy to share information about their beliefs. However, they wondered why this rarely happens. Ragheb reflects "I figured out that Americans feel that religion is something private. Something that you don't really ask people about and so out of politeness they do not ask".

Participant reported that several times they felt there are certain campus personnel who were like bridge builders for them. Jasir shares, "You feel that you know those persons from before. in these programs you feel someone is stretching a hand out to you to help you cross that bridge over the canyon of weirdness". Therefore, these helping hands helped the participants at times to move away from the alienation complex that was surrounding them.

Consequently, the students were able to appreciate the value of their experience at PU. Gradually, they felt the importance of widening the horizons of their perspectives to embrace their interactions with others on a Catholic campus. Therefore, the variety of lived moments and encounters they had was mostly important in their growth as developing college students. Such growth made them more of understanding of the various beliefs that exist in the world and more appreciative of the values of diversity in general.

Student perceptions varied about their experiences at PU as a Catholic institution. Some participants expressed their comfort in being at a place where faith is an aspect to share with other people. They took pride in expressing his beliefs. Other students shared that Catholic schools always meant better schooling for them. That experience with Catholic education comes from the idea that Catholic private schools in the Middle East are known for high quality education.

Some participants expressed their happiness with the dress code at PU especially those who transferred from public institutions. Shaheea shared that at her previous urban public institution young women would wear inappropriate clothes to the degree that I felt shame for them. When I transferred here I felt more comfortable with what the women around me would wear. They don't dress the same garment like me and they do not have head covers but there's still a lot more covered than previous university. But it is enough for me to dress like the Virgin Mary and to see them appreciating my commitment rather than looking down at me for my choice of cloth.

Most of the participants expressed the content by being around other people of faith. Osman shared, "We all have a higher entity that we look at for protection and love. It doesn't have to be the same book. The same language but God is the same as we all pray to the same God the God of Abraham."

Inclusive Practice

The PU reaction to the presence of the Saudi students on campus was unprecedented and unexpected by the participants. They reported three levels of organized and dedicated help that supported their educational mission at PU. These three levels were: the prayer room, teaching in the university classroom, and the international programs.

Prayer Room

The students did not expect the flexibility that PU administration handled their requests for a prayer space. Eiad exclaims, "When we asked for a prayer space, we expected that the school will be furious reacting to such a insolent demand. We did not expect them to give us a room that easy". Amer compares his previous experience in the institution he completed his English training. He says, "There, we had to go and talk to the dean of students and the director of the Hub to convince them that we need a place to pray every week. When they were finally convinced, we had to go through a process of booking the room". He continues to express the instability of room allocation, "The room was not guaranteed, though. We were canceled out of it if there is another event going on in the Hub". Then, he moves to PU,

Here, we were asking for a place to pray the Friday prayer. They gave us a room. It was small, but continuous. Later, they moved us to a small building that has beautiful

classroom for our use. Now, we have carpets, shoe racks, bookshelves, and a podium with a laptop. We have also a separate space for the sisters.

The utilization of the room is no longer confined to the Friday prayer. It is dedicated for the use of Muslim students all day. Campus Ministry at PU acts as the umbrella unit for all religious organizations on campus. It also allowed the Muslim Student Association to hold their organized events both on campus and off campus as well. When official were asked about the phenomenon, they responded that the original mission of PU was to "nourish the faith" and it left "the faith" general and not specific for an inclusion purpose.

Prayers on Events

Current practices at PU included the recitation of prayers during several functions of the university ranging from small unit meetings to larger university convocation and graduation commencement. An analysis of these prayers revealed an intentional practice of inclusion avoiding areas of conflicts or disagreement among the three heavenly religions, Judaism, Christianity, and Islam. However, the degree of conformity varied according to three main factors: the audience, the speaker, and the purpose of the gathering. It was also highlighted by participants that figures representing the Campus Ministry were always more sensitive in their choice of words when it comes to public prayers. Wahida tells an incident when she was attending an event at the Hub and the speaker delivered a prayer that was not inclusive of her beliefs. However, she felt it is expected to hear such prayers on a Catholic campus. After the event, she was surprised by a faculty member tapping on her shoulder. The professor apologized for the exclusive prayers saying, "When we admitted you, we knew that you are not Catholic. So, we should be sensitive when we include our students in our events". Wahida reflects on the incident saying, "I felt great. I really appreciated this small gesture of friendliness. I told the professor that when I chose PU, I knew it was a Catholic institution. But look how beautifully she responded to me".

Teaching

Instructor interaction with Saudi students as coming from a different religion varied through different circumstances. Participants across the board felt that instructors were very unrealistic in their expectations of their learning outcomes as they treated them as equal to domestic students. However, this did not urge the participants to deny that the instructors were very cognizant of their religious background. In some incidents, instructors invited students to present to classes about their religion and country. This depended on the type of the course and the context of the relationship. Other instructors allowed some flexibility during giving feedback on assignment or during advising sessions. Wael reflects on his religion studies instructor's initiative to make changes to the syllabus must be ause he had four Saudi Muslim students in the class. He shares, "

Dr. T. was very surprised when he saw the four of us in the class. Actually it was Rana who attracted his attention with her headscarf and veil. He began asking questions about our religion. Then, one day, he asked us if we would be willing to present about Islam during a section of the class. We said we would love to. He then sent an email to the whole class thanking us for accepting to share our idea of Islam with the class. We felt very proud because later, he said that we changed the way he is going to teach this class afterwards.

During advising sessions, faculty advisers were very considerate of the individual conditions of the Muslim students. It appeared mostly in two cases: timing of classes to schedule and the female Saudi students. Eiad recollects his first advising meeting,

I was very afraid as it was my first meeting with my professor. I had thoughts about avoiding classes at the time of the Friday prayer. But I was not going to ask my professor to change the time for the class. To my surprise, she asked 'You are a Muslim? Right?' I nodded

'Yes'... She said, 'Then, no classes on Friday afternoon'. It was a comfort from heaven that cooled my heart.... I haven't missed one Friday prayer since I was a kid.

Teaching classes for Saudi women is smoetimes challenging as the instructors have to deal with several conflicting questions: whether the student is comfortable in agroup setting, if the student is able to meet with group members outside of the classroom, if the student drives or she needs a ride from a husband or a brother, and how comfortable the student is with class oral presentation. Professors at PU appeared to be doing a very efficient job in accommodating female Saudi students as Israa reflects,

My professor was very considerate of my religion... As a muslim woman I have my standards of relationships with my classmates... He was even more cautious in putting me in groups with male students.... In one night, we had an event that was extended till 9:30. He made sure one of the women in class asks me if I would need a ride home or not... He knew I do not drive.

Likewise, Hend shares her experience in a physics class where the professor had an understanding of her culture and religion and showed a proactive strategy not to offend her by classmates' possible low rating. She says,

I was taking the physics class. We were only two girls the class, one American student and myself. The teacher had a scoring guide for our presentations. He also had us grade each other. One of the items was eye contact. He actually asked my classmates to ignore this item when they grade my presentation as he knew I would not look at the guys in the eye.... It is not appropriate ... in my religion to look people in the eye.

DISCUSSION AND IMPLICATIONS

Implications of the study included suggestions for campus administrators to ease the integration of these students into college academic and social life, increase their retention rates, optimize their learning outcomes, and empower them with a rich college experience. PU support systems are organized to demonstrate a replicable model that can be adopted to ease the cultural adjustment of these students at other Catholic campuses. PU's support model included three prongs: 1) cultural sensitive practice, 2) teaching focused on individualized learning experiences, and 3) inclusive purposeful campus programming.

The cultural sensitive practice includes looking at the Muslim student experience as an essential part of the acculturation process which increases the chances of success. A basic value that Catholic educators need to recognize is the appreciation these students have for basic Catholic values (Schmidtke, 2011). A general understanding of these students' different backgrounds calls for clearly intentional planning for almost every learning experience especially the extracurricular ones as they help in guiding integrating students into the campus community (Razek & Coyner, 2013). Administration may consider offering religious support through providing a prayer room for these students as they need to feel safe while practicing their faith (James & Estanek, 2012). Such initiative provides an added value to the retention process of these students as they need to utilize a spiritual space of their own. This helps the students feel comfortable and feel at home and with no pressure noticed against their faith (Ali & Bagheri, 2009). Although not prohibited on campus, alcohol consumption should be minimized in official university programs not only for the sake of these students but also to give a message of a healthier campus community (Shafer, 2012). This policy would encourage Muslim students to attend social events on campus and participating in several engagement activities as they feel more comfortable with less drinking (Ali & Bagheri, 2009). Moreover, the food menu of the university dining services may move towards providing a more kosher friendly menu.

Teaching should be focused on creating an individualized learning experience for each student (Razek, 2014). Professors and instructors will need the support of all stakeholders as they exert noticeable effort in differentiating instruction for all students including Saudi students. Instructors will need to appreciate that these students have a different background than most of other students in their classrooms. Therefore, they gear their instruction towards meeting the students where they are. Although such efforts may be challenging as they call for extra planning, they provide the help the students need along the road towards their success (Keup, 2006). Several instances of a sensitive individualized teaching may be integrated in the curriculum such as completing a module about Islamic culture and religion in the entry-level theology classes (Ali & Bagheri, 2009). History, humanities, and theology instructors should focus more on the similarities among religions rather than the differences (Boehme, 2008; Freidenreich, 2010). Moreover, highlighting the moral underpinning behind all religions and beliefs opens the minds of students to the common ground among the different (Sammak, 2009).

Programming is the third component of the PU model to help the students achieve their educational goals. At the forefront of positive programs are the non-alcohol related events coinciding with party time on campus. Though not directly targeting Muslim students, these provide safe environment for the students to participate and engage in positive social gatherings as well. Campus programming may also sponsor and publicize special events surrounding Muslim holidays (Razek & Coyner, 2013). These events contribute positively to the identity of the students on campus so they feel acknowledged as an integral part of the campus community (Kuh, 2007). General campus wide awareness events about religious diversity may raise awareness of all students about the value of the diverse religious backgrounds on campus. Such awareness events should target the general student body rather than a specific group. Campus programming may open the planning for these events to all religious affiliated organizations which gives a voice to the students associated with a more visible presence on campus (Shafer, 2012). Planning these events also allow students to gain more autonomy through developing their leadership skills.

LIMITATIONS AND FUTURE RESEARCH

Previous research focused on other nationalities of international students on campus or the general international population at specific institutions. Only a few studies addressed Saudi students at U.S. colleges and universities. Nonetheless, these studies did not touch upon the Islamic identity of Saudi students at Catholic institutions. The current study provided valuable information for practitioners, instructors, and administrators at Catholic institutions to be able to better serve the growing population of Saudi students at American Catholic universities. One of the main limitations of the current study is the limited number of participants which is a characteristic of qualitative research. Moreover, the uniqueness of the geographical location of PU limited generalization of the study findings to other institutions that might benefit from the research implications. However, administrators, faculty members, and student affairs professionals might select the implications that best suit their campus. Future research might take a larger sample of participants utilizing a quantitative survey. Another endeavor may try a multi-campus approach where Saudi students' experiences might be compared and related to campus initiatives and support mechanism.

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STUDENT LOCUS OF CONTROL AND ONLINE COURSE PERFORMANCE: AN EMPIRICAL EXAMINATION OF STUDENT SUCCESS IN ONLINE MANAGEMENT COURSES.

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ABSTRACT

This paper reports a study exploring the performance of students in undergraduate online management principle courses and the moderating effect of student locus of control (LOC) on performance. Using Rotter's (Rotter, 66) definitions of internal and external locus of control, we explore LOC and how it relates to performance outcomes in an online learning environment. Specific hypotheses are developed around the presumption that LOC has a moderating effect on performance outcomes in online courses. These are tested in a series of online management principles courses over a 6 year period with 243 students participating. Our findings suggest that LOC is an important psychological construct that may impact student performance in online courses. We conclude with a discussion of these findings and how they may be useful in effectively designing online management courses.

INTRODUCTION

A recent 2014 survey by the Babson Survey Research Group and co-sponsored by the Online Learning Consortium found that well over 6.7 million students reported taking one or more online course, a 3.7 percent increase from 2013. Thirty-two percent of higher education students now take at least one course online. The percent of academic leaders rating the learning outcomes in online education as the same or superior to those in face-to-face was 74.1%. The proportion of chief academic leaders that say that online learning is critical to their long-term strategy is at a new high of 69.1 percent. (onlinelearningconsortium.org/2014Survey).

Eduventures estimates that in 2011, almost 3 million students were enrolled in fully online programs (Eduventures, 2012). Many other programs provide a portion of their course delivery through online coursework. The same study forecasts the future growth of web-based courses over the next decade to average around forty percent annually. Moreover, distance delivery of curriculum is now becoming a standard medium for supplementing or replacing traditional classroom teaching (Dolezalek, 2003; Drago Peltier & Sorensen, 2002). For many institutions, the increased demand by students for online courses and improvements in web-based technology have made this an economical and useful way to increase student enrollment. The increasing availability of distance education reveals the growing importance of this method of instruction.

The increase in distance education offerings is directly related to the development of the internet and technologies that support online learning. Online education appears to be dramatically altering the education landscape. Although innovative technologies are important for the development of online course delivery, they are not sufficient to assure that distance

education is effective. Online course delivery poses a whole set of unique problems that must be cleverly addressed. Moreover, despite the increased growth and interest in online management education, research surrounding its effectiveness is significantly sparse (Hay et al., 2004a; Martins & Kellermanns, 2004; Zapalska & Brozik, 2006). Future growth of online education will depend on the ability of educators and administrators to assure that this type of education delivery system will prepare students to meet today's competitive challenges (Dolezalek, 2003; Hay et al., 2004b). Clearly, not enough is understood about how to best plan, implement, and to evaluate online courses (Peltier et al., 2003). Pedagogical theories and approaches to effective teaching are needed in online learning environments (Arbaugh, 2002).

Online courses by their very nature are a unique form of course delivery. Many of the traditional methods of delivery in a brick and mortar classroom do not transfer well to the web-based environment. Therefore, online course delivery may have unique issues regarding student success. One such issue may be how well a student deals with the self-directed study nature of online courses. Considerable thought should be applied in the design of online courses, with particular attention paid to how students can more easily move through course content. This paper examines student success in online management principles courses and how that success may be linked to individual student self-motivation. We are interested in knowing whether a student's locus of control will be a partial determinant of their success in online courses. This information in turn can be used in course planning and teaching strategies for online course development.

The next section of this paper provides a review of the extant locus of control literature. The remainder of the paper details the hypotheses, methodology, and results and concludes with a discussion.

Literature review

Locus of control (LOC) was first introduced in 1954 by Julian Rotter (Rotter, 1954). It is conceptualized as an individual's perception of the source of control over their destiny or actions (Gershaw, 1989). It is the extent to which a person believes that an external force is related to the influence on particular events in their life (Moorhead and Griffin, 2004; Firth et al., 2004). A person who considers that their own capabilities and actions can determine their rewards, are referred to as internals. Externals believe that they obtain outcomes outside of their control (Rotter, 1966). Thus, "internals" consider that they have the capability to influence the environment around them and that they can alter the outcome of events that influence them through their own behavior, ability and effort. "Externals" consider that the outcomes they realize are a function of uncontrollable or incomprehensible forces such as fate or luck (Phares, 1962).

This concept has been first applied to the field of organizational behavior by Spector (1982). There has been a plethora of further research, especially in the field of management, examining the effect of LOC on job satisfaction, job performance and job stress (Chen & Silverthorne, 2008; Martin et. al., 2005), motivation (Chen & Silverthorne, 2008) and commitment (Judge et al., 2000). In addition, it has been presented as a moderating factor between incentives and motivation, satisfaction and turnover. Also, many scholars proved that high internal LOC scores are good predictors of occupational success (McShane & Von Glinow, 2008).

According to Phares (1962), people with internal LOC prefer to have power over their own environment, learn faster and perform better in tasks that require expertise and skills. They

do not value outside support or help, and prefer to count on themselves. Their capability will lead to high self-confidence. However, individuals who think that the rewards they receive are due to external factors rather than internal factors are more likely to be less productive and act more passively. Externals tend to adapt to the group's influences and believe that success is achieved with the help of others. Rahim (1996) concluded that internals can cope with stress more easily and effectively than externals. According to Kalbers and Fogarty (2005), individuals with an internal LOC are less likely to experience a high level of stress but those with an external LOC are more likely to be vulnerable to stress and perceive certain events as stressful. Moreover, external LOC has a significant negative influence on job stress and tends to reduce personal accomplishments and job performance. Internals are more likely to have higher levels of job performance and satisfaction (Martin et al., 2005).

Internals, tend to seek more information about the tasks they have to perform in order to increase performance (Lefcourt, 1992). According to Gershaw (1989), internals can better evaluate, learn and obtain larger benefits from social support. They search and apply new knowledge that is helpful for dealing with difficulties and for control.

LOC and Online Learning

As Rotter 1990 suggests, people who are internally motivated like internals will-depend on their own resources to solve problems and work hard. They will likely thrive in a self-regulated, self-motivated environment. People who are externally motivated will depend on others for problem solving and motivation. Externals will often desire contact and collaboration with other students. In online learning situations, internally motivated students will require less of the instructor's time than will externally motivated students. Externals will look to the instructor for information, direction and consistent reminders.

Students often do not clearly understand the asynchronous and virtual nature of online learning, and that it calls on learners to be self-directed and to take responsibility for their learning. They must take greater control of monitoring and managing the learning process. Since this is more the natural approach to learning of the Internal, they may be more inclined to success in the online environment.

Additionally, many students find online course structure to be, in general, very challenging as it often does not fit well with how they have been conditioned to expect to learn. Combine the requirements of online learning with an external locus of control and students may begin with a host of disadvantages that are difficult to overcome. Thus, instructors are challenged to realize the responsibility for providing structure and guidance that will encourage and support students who are assuming increased control of their learning.

Asynchronous online learning rewards and promotes self-directed and self-regulated learning. A model of self-directed learning that integrates motivation with issues of reflection and action is provided by Garrison (1997). The key dimensions are self-monitoring and managing the learning process. Monitoring is the assessment of a variety of information, while managing has to do with "self" control of learning tasks and activities. Initiating curiosity and maintaining determined effort are essential elements in self-direction and effective learning. Without self-monitoring and self-management, learning effectiveness will be diminished considerably. Again, these are some of the clear strengths associated with an internal locus of control.

HYPOTHESES

It seems clear that internals are "wired" for self-monitoring and self-management of the online learning process, whereas externals are less so. Consequently, the researchers predict that:

H₁   *Student's with an Internal LOC will perform significantly better than those with an External LOC in an online course environment.*

Additionally, it appears that internals will find both comfort and success in the online environment and will, therefore, be more satisfied with this form of learning. Externals, on the other hand, will more likely be more frustrated and less successful in online courses. The researchers predict that:

H₂   *Student's with an Internal LOC will be more satisfied with online course learning than will those with an External LOC.*

METHODOLOGY

Sample

The sample for the current study consisted of undergraduate students attending a comprehensive college on the east coast. Participants were enrolled in online management concepts courses offered between 2009 and 2014, and taught by the same instructor. Of the 243 participants, 41 percent were male and all were either juniors or seniors. Respondents were distributed across many majors, with the majority (48%) being business majors.

Data

Students in each class were asked to complete a short online Rotter-based LOC instrument developed using Rotter's 29 questions (see Rotter, 1966). The instrument is shown in Appendix 1. As a measure of the accuracy of the LOC for each student, students were asked to read a description of both internal and external locus of control types and choose which description sounded most like them. Ninety-one (91%) percent of the enrolled students picked the description that matched the outcome of their Rotter questionnaire outcome. It appeared that the online instrument was quite robust and representative of the student's LOC. In addition to the personality data, we gathered from archival means the overall grade point averages and student major. Lastly, we gathered from an end of semester survey a "satisfaction" score for each student based on a 5 point Likert scale item. This score represented the students overall satisfaction with the online course experience.

Measures

Student participants were classified as either internal LOC (I-loc) or external LOC (E-loc) based on the outcomes of their survey. In addition we had the final grade for each student in the course. Table 1 shows the number of students with either internal or external LOC as well as the mean performance given for the course grade. An initial examination of the table reveals that I-loc students had a higher group mean than the group mean for E-loc students. Given that we have an unequal number of students in the I-loc group versus E-loc group, [i.e. I-loc (n=137) E-loc (n=106)], we applied Levene's test of homogeneity which supported the assumption of equal variance.

Table 1 DESCRIPTIVE STATISTICS-COURSE GRADE					
Locus of Control	N	Mean*	Std Dev	Std Error	Min/Max
I-loc	137	76.64	8.13	1.05	54/92
E-loc	106	72.41	11.69	1.42	32/89
TOTAL	243				

* "Mean" indicates mean of grade for the course

Results

Before proceeding to comparison of performance and course satisfaction measures, we wanted to examine both overall student GPA and student major as controls. Since some studies have found students, as well as employees with an internal LOC to be better performers (Spencer, 1982; Daniels, et al, 1976), we wanted to control for overall student performance at the university. We used overall GPA to do this. Applying a simple test of means, we found no significant difference in the overall GPA between the two groups, although Internals did have a slightly higher overall GPA. Since our classes were a mixture of both business students and students from a variety of other majors, we were concerned that business students might perform better in general than, for example, a social work major. Although business students did perform slightly better overall than non-business students, there were no statistically significant differences in our means test.

Table 2 indicates the results of the comparison of mean class performance for Internals and Externals. The model indicates that there was significant differences in performance between the two LOC types.

Table 2 TWO-TAILED T-TEST FOR COURSE GRADE				
Variable	t-value	Df	Standard Error	P-value
Course Grade	2.265*	241	1.87	.0244

*p<.05

Table 3 shows the descriptive statistics for our satisfaction variable. An end of semester survey was administered regarding student perceptions of the online course experience. The question that the satisfaction variable is based upon asked students to rate their overall satisfaction with the online course. A 5-point Likert scale was employed as follows: 1- very satisfied, 2 - satisfied, 3 - unsure, 4 - dissatisfied, 5 - very dissatisfied. The means for satisfaction for both groups are indicated. An initial examination of the table reveals that I-loc students had a lower group mean than the group mean for E-loc students, indicating more satisfaction with the course. As above, we applied Levene's test of homogeneity which supported the assumption of equal variance in the two unequal size groups.

Table 3
DESCRIPTIVE STATISTICS – SATISFACTION

Locus of Control	N	Mean*	Std Dev	Std Error	Min/Max
I-loc	137	2.341	1.37	1.16	1/5
E-loc	106	2.798	1.40	1.18	1/5
TOTAL	243				

* "Mean" indicates mean of satisfaction scores

Table 4 indicates the results of the comparison of mean satisfaction scores for internals and externals. The model indicates that there was significant differences in satisfaction with the online course between the two LOC types.

Table 4
TWO-TAILED T-TEST FOR SATISFACTION SCORE

Variable	t-value	Df	Standard Error	p-value
Satisfaction Score	2.601*	241	1.15	0.0103

*p<.01

It is clear from the T-test models that there are significant differences in performance and satisfaction across the two LOC types. Students with an internal LOC not only performed significantly better than students with an external LOC, they also were significantly more satisfied with the online experience.

DISCUSSION

We began this study with an interest in whether individual student locus of control mattered regarding academic performance in online courses. We also wanted to know who was more satisfied with the experience. Our findings suggest that LOC does matter. Internal LOC students appear to be cognitively built to find more success in online courses. They are more analytical, organized and task oriented. They also tend to be seekers of information and have a preference for individual, self-paced work, with success being drawn from self-sufficiency and self-motivation. External LOC individuals learn best drawing on group interaction, through participation and by interacting with the instructor, none of which are, in general, hallmarks of online courses. Externals are likely to find frustrations with online learning and consequently blame the course and the instructor for lack of success. This may, of course, lead to lack of satisfaction with the learning environment (Drennan & Pisarski, 2005).

This study will add to a growing body of research focused on student cognitive and psychological constructs and online course performance. For example, Severino et al., 2011 found a relationship between internal locus of control and online success. Also, results of research conducted on students taking online computer programming courses found the internal locus of control to have a relationship with success (Şahin Gökçearslan, & Ayfer Alper, 2015; Yukselturk & Bulut, 2007). Kerr et al., 2006 found that student strength in independent learning yielded the strongest online course performance. Independent learning consists of items that assess one's ability to manage time, balance multiple tasks, set goals, and one's disposition regarding self-discipline, self-motivation, and personal responsibility. Many of these attributes are consistent with the internal LOC student. Other studies examining students taking an online course reported that locus of control and academic success were not significantly related (Besich,

2005; Tekedere & Mahiroğlu, 2012).

Even though having an internal LOC may be more conducive to learning in an online class, this should not suggest that all students cannot be effective in these courses. Two things are vital. First, in order to help students succeed in online education, instructors must understand how they learn, how they perceive and process information. Online course should strive to address all types of learners. It is necessary to provide a number of different learning options that take into account student differences. Combining a mixture of approaches and teaching methods allows each online student to find the course tailored to their own strengths and weaknesses.

For example, greater use of collaboration, discussion boards, and even team work could make the online course environment more conducive to success for the external LOC student. It is clear that online technology is improving to the point where more options are available to the instructor for building more variety into the online course environment. Consequently, many of the advantages of the brick and mortar classroom that address external LOC learners can be more readily replicated in online courses through the use of technology and course design.

Furthermore, students have an opportunity to better understand their own psychological makeup and, accordingly, what kind of curriculum delivery best fits their strengths. One might ask whether it would be appropriate to test students for LOC, as well as other factors, early in their college careers and help them to use this information to make improved and informed decisions in course selection. For example, the findings of this study might imply that an external LOC student should consider whether online courses are a best choice for them? Likewise, a student with an internal LOC might thrive in the online course environment. Academic advisors may find this information helpful as they advise students on which section of a course to take as well.

In summary, we believe there is much work to be done regarding online course development. As we mentioned above, there is great growth in the number of course now using this method of curriculum delivery. It will surely continue to grow. Yet both its quality and efficacy will be enhanced by further investigation into the factors that impact student success. There is a growing body of literature that is clarifying what factors impact student success in online courses. Other studies are shedding light on such factors as emotional intelligence, self-efficacy and learning styles and their moderating effect on online course performance. We strongly encouraging a continuation of this line of research as the community of higher education deals with the growth in online curriculum delivery.

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APPENDIX I

Rotter's Locus of Control Scale

For each question select the statement that you agree with the most.

1. a. Children get into trouble because their patents punish them too much.
    b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.
    b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
    b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world
    b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries
5. a. The idea that teachers are unfair to students is nonsense.
    b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.
    b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try some people just don't like you.
    b. People who can't get others to like them don't understand how to get along with others.
8. a. Heredity plays the major role in determining one's personality
    b. It is one's experiences in life which determine what they're like.
9. a. I have often found that what is going to happen will happen.
    b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
    b. Many times exam questions tend to be so unrelated to course work that studying in really useless.
11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
    b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.
    b. This world is run by the few people in power, and there is not much the little guy can do about it.
13. a. When I make plans, I am almost certain that I can make them work.
    b. It is not always wise to plan too far ahead because many things turn out to- be a matter of good or bad fortune anyhow.
14. a. There are certain people who are just no good.
    b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.
    b. Many times we might just as well decide what to do by flipping a coin.

16.   a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
    b. Getting people to do the right thing depends upon ability. Luck has little or nothing to do with it.

17.   a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
    b. By taking an active part in political and social affairs the people can control world events.

18.   a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
    b. There really is no such thing as "luck."

19.   a. One should always be willing to admit mistakes.
    b. It is usually best to cover up one's mistakes.

20.   a. It is hard to know whether or not a person really likes you.
    b. How many friends you have depends upon how nice a person you are.

21.   a. In the long run the bad things that happen to us are balanced by the good ones.
    b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22.   a. With enough effort we can wipe out political corruption.
    b. It is difficult for people to have much control over the things politicians do in office.

23.   a. Sometimes I can't understand how teachers arrive at the grades they give.
    b. There is a direct connection between how hard 1 study and the grades I get.

24.   a. A good leader expects people to decide for themselves what they should do.
    b. A good leader makes it clear to everybody what their jobs are.

25.   a. Many times I feel that I have little influence over the things that happen to me.
    b. It is impossible for me to believe that chance or luck plays an important role in my life.

26.   a. People are lonely because they don't try to be friendly.
    b. There's not much use in trying too hard to please people, if they like you, they like you.

27.   a. There is too much emphasis on athletics in high school.
    b. Team sports are an excellent way to build character.

28.   a. What happens to me is my own doing.
    b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29.   a. Most of the time I can't understand why politicians behave the way they do.
    b. In the long run the people are responsible for bad government on a national as well as on a local level.

BUILDING PROFESSIONAL SOCIAL CAPITAL AMONG MINORITY BUSINESS STUDENTS

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ABSTRACT

Social media has become a way of life for many in society. This is especially true for college students who use social media to interact and maintain social connections. Business people have also realized the value of social media to build social capital and maintain professional networks. Scholarly interest in using professional networking sites, such as LinkedIn, in business school classrooms has recently emerged in the literature. However, the few studies published to date were conducted in majority institutions. Hence, there exists a limited understanding of the role and impact of social media on professional networking among minority students.

This paper provides a review of the social capital literature related to professional and career success. It describes an innovative class exercise where students at a Historically Black University (HBU) develop their professional brand and network using LinkedIn. In addition, it reports the results of a pilot study in which student success in establishing professional linkages is compared with a previously reported study at a majority institution. This comparison revealed that minority students have greater difficulty completing a profile and building professional connections. These results suggest that students from historically disadvantaged groups may need additional support, such as career coaching and mentoring, to build their professional social capital.

INTRODUCTION

Scholarly interest in the concept of social capital among business scholars has been growing since appearing in the literature over a decade ago (Adler & Kwon, 2002). In its broadest sense, social capital suggests that one's family, friends, and associates are an important asset that can be utilized in a crisis, enjoyed, or be leveraged for material gain such as a new job (Woolcock & Narayan, 2000). The essence of social capital is that the goodwill that others have toward us is a valuable resource. Goodwill involves sympathy, trust, and forgiveness by friends, family, and colleagues. The benefits of social capital flow from the information, influence, and camaraderie it provides (Adler & Kwon, 2002). The sources of social capital lie within the social structure or community in which the individual resides. Two types of social capital have been noted in the literature: bridging and bonding. Bridging involves cultivating external relationships in different communities, while bonding refers to individual internal ties or self-identity within the community (Adler & Kwon, 2002).

The management literature has linked social capital to career success (Burt, 2009; Gabbay & Zuckerman, 1998; Podolny & Baron, 1997; Siebert, Kraimer, & Liden, 2001). Seminal studies suggest that social capital can be understood via the size and composition of network structures and the nature of social resources in the network. The impact of social resources on career success are thought to be related to three network benefits: access to information, resources, and mentorship (Siebert, Kraimer, & Liden, 2001).

The importance of higher education to career success is well documented; however there is a growing understanding that social capital is also a significant factor, especially in acquiring employment within a student's major (Gerard, 2012; McCorkle & McCorkle, 2012; Peterson & Dover, 2014). College students who come from disadvantaged backgrounds and communities often have limited social capital relevant to the business world and relatively

few professional networks, or role models (Fairchild & Robinson, 2004; St. John, 2013; Smith, 2005). As such, the development of professional social capital while in school is important to business students from these backgrounds. With rising student debt loads and default rates, as well as low graduation rates, historically black universities are facing increasing questions about the value proposition of higher education by students, parents, regulators, and the government (Clay, 2012). Hence, understanding the role of social capital in achieving "gainful employment" among their student body is critical.

Technological advances have enabled the rapid growth of social media over the past decade. As a result, most students are customers of popular social media sites such as Facebook and Instagram. These sites have changed the way students and society at large learn, communicate, and participate in the marketplace of ideas, products, and services. While students are familiar with the principles and practices of social networking in personal relationships, recent research has revealed that they are unfamiliar with the application of social media for personal branding, professional networking, and career success (Lewis, Messina, & Wellington, 2014).

In the business context, LinkedIn is the leading professional networking site used by millions of people around the world to build and maintain effective professional networks (Peterson & Dover, 2014). Unfortunately, recent research shows that business students are relatively unfamiliar with this powerful tool (Lewis, Messina, & Wellington, 2014). Furthermore, scholarly exploration of the use and impact of social media-based professional networking in the classroom among business students has been quite limited (Gerard, 2012; McCorkle & McCorkle, 2012; Peterson & Dover, 2014).

Studies exploring the use of professional social media published to date were conducted in majority institutions. As such, there exists a limited understanding of the role and impact of professional social networking among minority students. This research provides a review of the social capital literature related to professional and career success. It describes an innovative class exercise where students at a Historically Black University (HBU) developed their professional brand and network using LinkedIn™ professional networking services. In addition, the results of a pilot study are reported in which student success in establishing professional linkages is compared with a previously reported study at a majority institution.

SOCIAL CAPITAL AND PROFESSSIONAL SUCCESS

Social capital can be defined as "the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor" (Adler & Kwon, 2002, p.23). The sources of social capital reside within the social structure of the individual or group. Social structure has three dimensions or types of exchange: market relations, hierarchical relations, and social relations (Adler & Kwon, 2002). Market relations involve the exchange of products and services, including labor. Hierarchical relations refer to those relationships in which obedience to authority is exchanged for material or emotional security. Social relations are based on relationships in which favors and gifts are exchanged for mutual benefit. Adler and Kwon (2002) note that most relationships, particularly those in a business context, will involve a mix of all three sources of social capital. Furthermore, under conditions of frequent interaction and feedback, such as in the workplace, market and hierarchical relations inevitably produce social relations or ties (e.g., between superior and subordinate, as in mentoring).

The literature suggests that there are two types of social capital: bonding or internally focused ties and bridging or externally focused ties (Burt, 2009). Bourdieu (1985, p.248)

defines bridging as "the aggregate of actual or potential resources which are linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance." Burt (2009) suggests that bridging ties include friends, colleagues, and general contacts which afford opportunities to deploy human and financial capital. Bridging capital focuses on external linkages or ties beyond the individual and their community (beyond the urban neighborhood into corporate business culture). Bonding capital is developed within a community such as an organization, ethnic group, etc. and is intended to foster shared values, group cohesiveness, and pursuit of common goals (Alder & Kwon, 2002). Thus, bonding capital focuses on internal linkages or ties within the individual and their community (e.g., within an urban neighborhood).

Adler and Kwon (2002) propose that there are three conditions under which social capital can be leveraged: opportunity, motivation, and ability. Opportunities for social capital "transactions" flow from an individual's network of social ties. Bridging or external ties allow the individual to take advantage of their network member's resources (e.g., professional mentors). Bonding or internal ties facilitate the opportunity for individuals to come together for collective action (e.g., urban community organizing). The ability to take advantage of social capital and which type of social capital should be more effective depends on the task and symbolic environment being faced. Task contingencies refer to the goals and objectives of the individual or group (e.g., becoming professionally employed upon graduation from college), while the symbolic environment refers to norms and beliefs in the context that impact the value of specific social capital (e.g., student membership in a professional association vs. membership in a social fraternity).

The motivation for exchange of social capital between "donor" and "recipient" can range on a continuum from instrumental (i.e., self-interest) to altruistic (i.e., interest of others) and are based on social norms and trust (Portes, 2000). Norms are acquired early in life via socialization (i.e., a result of bonding capital) or by experience of shared destiny with others (i.e., an outcome of bridging capital). Trust is vital to social exchange and represents the mutual obligations of both actors that can be enforced by the community (e.g., employer employee relationship in the workplace). In the case of professional networking, a "donor," may be motivated to provide professional mentoring for instrumental reasons to produce a possible job candidate or better subordinate, as well as for altruistic reasons such as "giving back to the community."

Ability refers to the "donor's" expertise and access to mobilize certain resources on behalf of the "recipient" (Adler & Kwon, 2002). The concept of ability can be illustrated by an employment situation involving an open position. The "donor" in the organization who has an interested family member may have the opportunity and motivation to recommend them for employment, but due to the work performance of the "donor" the ability to influence the organization through the recommendation is limited.

A seminal study by Siebert, Kraimer, and Liden (2001) found strong linkages between social capital and career success. They found that the number of ties and the strength of ties outside the individual's group significantly influenced access to information and resources. Likewise, bridging ties to contacts at higher levels in an organization were positively associated with access to information and career sponsorship. Ultimately, access to information and resources, as well as career sponsorship, resulted in higher levels of promotions, salary, and career satisfaction. These findings suggest that professional success requires strong bridging capital beyond one's immediate circumstance or reference group.

Research focused on the relationship between social capital and employment in minority communities has revealed that the presence of strong bonding capital within a community and the lack of bridging capital outside the community create barriers to career success. Fairchild and Robinson (2004) studied both employers and prospective employees in

an urban context to better understand persistent black unemployment. They found that prospective employees had strong relationships and bonding ties within race. However, these job seekers had limited connections or weak tie bridging capital with white firm owners. Thus, the limited bridging capital present in urban black communities presents a significant barrier to employment and career success. Another key study (Smith, 2005) found that deficiencies in social capital access among black urban poor was related to functional deficiencies of their job referral networks. These networks were characterized by strong bonding capital, but potential "donors" either lacked the ability (e.g., limited credibility with the employer due to work performance) or motivation (e.g., lack of trust in the associate's work ethic) to act on behalf of job seekers. The inability to activate social capital under these circumstances results in limited employment opportunities. Finally, a recent study by St. John (2013) concerning academic success of black males at a majority white university found that strong tie bonding capital in the student's relationships with parents, family, and friends was critical in the college decision-making process, while success in college was associated with weak tie bridging capital to faculty, administrators, and college friends. Of course, academic success in college often determines the quality of employment opportunities a student can pursue upon graduation.

PROFESSIONAL NETWORKING VIA SOCIAL MEDIA

Scholarly interest in the pedagogical use of social media to assist students in developing professional networks has recently emerged in the literature (Gerard, 2012; Lewis, Messina, & Wellington, 2014; McCorkle & McCorkle, 2012; Peterson & Dover, 2014). Networking has been defined as the opportunity to create value by identifying opportunities to build friendships and business partnerships (Peterson & Dover, 2014). Networking skills are vital to students seeking employment because it is estimated that 80% of all positions are not posted in public forums and that a majority of people obtained their most recent position through networking (Bradford, 2005). Peterson and Dover (2014) note that college career centers are a valuable resource for students providing assistance with resumes, interviewing skills, and career fairs. However, with the advent of social media students can now broaden their networks beyond university-based resources. Social media is "the electronic means by which people and organizations communicate experience, facts, knowledge, intentions, opinions, perceptions and sentiments in a variety of forms that are referred to as content" (Lewis, Messina, & Wellington, 2014). For business people, LinkedIn™ professional networking services is the leading professional social media site with millions of users world-wide (Peterson & Dover, 2014). However, a recent research on the social media perceptions and habits of business students revealed that only 29% used LinkedIn™ and only sss38% believed that social media experiences were useful for career placement in their field (Lewis, Messina, & Wellington, 2014). This finding suggests that an opportunity exists to teach students the importance and value of using social media for professional networking and career success.

Recently there has been increasing scholarly interest in deploying LinkedIn™ as a pedagogical tool in business classrooms. Gerard (2012) reports using LinkedIn™ as a class "ice breaker" in capstone strategy courses at a regional state university in the Northeastern U.S. to help students introduce themselves and develop relationships. The exercise also helped students gain insights into the advantages and disadvantages of professional social networking and ways to effectively manage a career network. McCorkle and McCorkle (2012) report teaching professional social media and networking to marketing students at a large state university in the Midwestern U.S. through a class assignment using LinkedIn™ professional networking services. The assignment had three phases: setting up a digital

resume and personal learning network; developing a SWOT analysis and personal brand; and engaging in social networking. Students surveyed reported very favorable impressions and value from the exercise, with 96% recommending the continued use of the LinkedIn™ assignment. In another study, Peterson and Dover (2014) report on the development of an innovative class exercise using LinkedIn™ at a large state university in the Western U.S. Students were expected to build profiles, develop connections, join groups, post comments, and obtain letters of recommendation. A survey of students revealed that students learned how to use professional networking tools to improve knowledge and access to professionals, as well as securing job offers based on their LinkedIn™ profile and active participation. Student comments were overwhelmingly positive.

RESEARCH DESIGN

Prior research using professional social networking to develop and enhance career success in the business classroom has been conducted at universities with limited minority student populations. As previously noted, students from historically disadvantaged backgrounds face increased challenges in developing professional social capital because of the presence of strong bonding ties within community and weak bridging ties outside the community, especially to the business community. Thus, there is a need to better understand the role and effectiveness of professional social networking tools such as LinkeIn™ among minority business students. Such insight could be important to improving both the quality and quantity of employment offers to recent graduates. An important question involves the extent to which majority students and minority students differ in the knowledge, skills, and abilities to develop bridging capital via professional social networking.

This pilot study involves the use of a class assignment adapted from Peterson and Dover (2014) involving marketing principles students at a Historically Black University (HBU). In this exercise students developed an individual marketing plan based on LinkedIn™ professional networking services (see Appendix A). Unlike Peterson and Dover (2014), the students in the present study were asked to begin by responding to a series of marketing plan questions: What is your passion; What is your mission; What is your dream job (segmentation); What is your best first step (targeting); how will you position your brand (positioning)? Based on these questions, students were required to meet with the professor for a 30-minute interview to discuss their preliminary marketing plan. Next the students were required to complete a LinkedIn™ profile with a goal of achieving an All-Star (highest) level of completion. As in the Peterson and Dover (2014) study, the number of connections, groups, comments, recommendations, and job search information were measured in a pre-test and post-test questionnaire (Appendix B) and turned in to the professor. Students also submitted screen shots of their LinkedIn™ profile, connections, etc. along with written final responses to the assignment questions. Questionnaire results (n=46) were then tabulated and a comparison made with results reported (n=40) by Peterson and Dover (2014).

RESULTS

The percentage of students reporting having a LinkedIn™ account prior to the assignment was very similar between the HBU students (32.6%) and the comparison group (29.3%). However, HBU students reported a much lower percentage of LinkedIn™ profile completion (52%) versus the comparison group (88.3%). While HBU students and the comparison group reported similar average number of connections in the pre-test at 6.4 and 5.6 respectively, the post-test revealed that the comparison group achieved double the average number of connections or 52.4 connections compared to 26.7 connections for the HBU students. Similar results occurred when comparing the average number of groups

students joined, with the comparison group at 8.5 groups and HBU students at 4.3 groups. Less dramatic differences were noted in the number of posts and recommendations both written and received. It should be noted that the absolute number of recommendations was quite low for both groups.

Table 1 COMPARISON OF PROFESSIONAL NETWORKING USING LINKEDIN™ BETWEEN BUSINESS STUDENTS AT A LARGE STATE UNIVERSITY (LSU) AND A HISTORICALLY BLACK UNIVERSITY (HBU)				
LinkedIn™ Activity	**LSU Pre (n=40)**	**LSU Post(n=40)**	**HBU Pre (%)**	**HBU Post (%)**
Have a LinkedIn™ Account	29.3%	100.0%	32.6%	98.0%
Percentage Complete	19.63%	88.29%	2.20%	52.0%
Avg. Number of Connections	5.66	52.39	6.40	26.70
Avg. Number of Groups	0.61	8.51	0.02	4.30
Avg. Number of Posts	0.02	4.71	0.00	3.40
Avg. Write a Recommendation	0.02	0.95	0.09	1.29
Avg. Obtain Recommendation	0.12	1.12	0.28	0.24

CONCLUSION AND FUTURE RESEARCH

This research revealed preliminary findings that minority students at an HBU have greater difficulty completing a profile and building professional connections when compared with students at a large state university. These results suggest that students from historically disadvantaged groups may need additional support such as career coaching and mentoring to build their professional social capital. While this conclusion must be treated with caution due to the context of a single university comparison and small sample sizes, results suggest that much work remains to be done both in the classroom and university career centers to assist historically disadvantaged students in achieving career success. Some authors (Clay, 2012) have noted that the greatest strength of historically black institutions, the presence of strong bonding ties, may actually become a barrier for students who lack exposure outside the university, particularly related to bridging ties to the business world.

Further research should include expanding this study to include other HBUs and majority institutions to determine if the preliminary findings can be replicated with other institutions with similar missions. Studies should also include larger sample sizes and the use of statistical analysis to evaluate statistical differences between students based on university characteristics. In addition, student socio-economic data should be evaluated to determine if certain backgrounds influence the ability to develop bridging ties. Finally, introducing mentoring and coaching to future studies would reveal the possible impact of these interventions to help minority students build bridges to the business world in order to maximize their opportunities for professional success.

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APPENDIX A: INDIVIDUAL MARKETING PLAN

The purpose of the individual marketing plan (IMP) assignment is to develop your Knowledge, Skills, and Abilities (KSAs) in the area of segmentation, targeting, and positioning using professional networking through social media, specifically LinkedIn. LinkedIn is a free professional networking website which allows members to connect to colleagues, companies, industry associations, and thought leaders in their field of passion and interest.

This assignment should be completed in writing by no later than Friday April 24, 2015. The IMP assignment is worth 100 points.

Instructions: Please complete the individual marketing plan elements provided in the outline below and if you don't already have a LinkedIn account, please sign up at www.linkedin.com. You will need to show proof of your LinkedIn participation by completing a brief survey instrument and print the evidence of ALL the various materials noted below. It is up to you to have all the documentation turned in all at once, prior to the deadline. All documentation must be clearly labeled.

Linking to the professor, or his graduate assistant, does not count in your tally of connections. You will need to update your LinkedIn baseline form you filled out previously. A copy is attached.

1. What is your passion? This could be a hobby, profession, or activity that you often think about and/or engage in. Your passion could be based on Knowledge, Skills, Abilities (KSAs) and experiences that are unique to you. *Example: "My passions is teaching"*

2. Develop a personal mission statement related to your passion. *Example: "My mission is to equip* others for personal and professional success in their area of greatest passion."

3. Segmentation: What is your dream job? How might you turn your passion into paid employment or a business venture? What are some job titles that most closely "align" with your passion. *Example: Professor; Organizational Consultant; Life Coach.*

4. Targeting: What is your best first step? What are some companies, organizations, professional associations, and industries which have positions related to your passion and dream job? *Example: Public and Private Universities; American Marketing Association; International Coach Federation; Life Coaching Industry.*

5. Positioning: Based on your knowledge, skills, abilities (KSAs) and experiences, what unique benefits do you bring to prospective employers or business opportunities? Please complete the following positioning statement format:

To (prospective employer or opportunity), (your name/brand) offers (benefit 1), (benefit 2), and (benefit 3), because only (your name/brand), is (reason to believe 1), (reason to believe 2), and (reason to believe 3).

Example: To Historically Black Colleges and Universities, Dr. Kenneth Russ offers continuous improvement in student, college, and university success, because only Dr. Kenneth Russ has a PhD in Marketing from an AACSB Accredited, Carnegie Research 1 university; has served in leadership positions in industry for over 25 years including as CEO of a $100million company; and has demonstrated track record of success in customer-focused, high performing organizations.

6. Marketing Mix: Product Complete an All-star level of your LinkedIn profile, including a photo. Profiles earn more completeness for adding work history, skills, expertise, education, and so forth.

7. Marketing Mix: Promotion Build a minimum of 20 new connections, with at least 10 being professionals. *Example: professionals could include co-workers and members of professional student organizations, such as the Accounting Society.* Note: You should also try to connect with other professionals outside your existing network.

8. Marketing Mix: Distribution/Place Join at least five groups. Groups are collections of people with similar interests such as a company or industry, goals, or job responsibilities that wish to pose questions, share information, or network with others of similar interest.

9. Marketing Mix: Product Development: Post a question/comment/etc. in these groups at least five times (for a minimum of five times overall, not per group).

10. Marketing Mix: Promotion Write one letter of recommendation for another connection and receive on letter of recommendation written by another connection (traditionally, one paragraph and posted on your profile for others to see) Ideally the letter of recommendation should come from a professional source, but for purposes of this assignment it may be provided by a friend.

11. Marketing Mix: Price using the job search feature in LinkIn find a posting for an entry-level position in a company of interest to you and determine the job requirements, as well as the starting salary range and benefits.

APPENDIX B: SURVEY OF PROFESSIONAL USE OF SOCIAL MEDIA

Name: _____

The following survey concerns usage of the LinkedIn professional networking website.

1. How familiar are you with LinkedIn? (Circle the response that most applies to you)
Very familiar Somewhat familiar Unfamiliar Never heard of LinkedIn 4 3 2 1
2. Do you have a LinkedIn account? (Circle one):

YES   YES   NO   (if NO, you're done) (But don't use it)

3. What is your Profile Strength?: _____

4. How many connections do you have? Please give the Exact Number _____

5. How many groups and associations are you linked to? _____

6. Have you posted questions to these groups or associations? (Circle one) YES   NO

7. If yes to question 6, how many times have you posted to groups or associations? _____

8. Have you written a recommendation for someone on LinkedIn?   (Circle one)   YES NO

9. If yes to question 8, how many recommendations have you written? _____

10. Have you received a recommendation from someone? (Circle one)   YES   NO

11. If yes to question 10, how many recommendations have you received? _____

ATTACKING CLASSROOM APATHY

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ABSTRACT

This research centers on a pervasive problem in university classrooms: chronically ill-prepared students. The study presents a discussion of the problem, a hierarchical model of learning, and a resulting pre-class intervention tested on 117 college students (predominantly late-sophomore and junior level). The activity required students to summarize learning objectives before material was covered (ex-ante). The summaries were graded and returned to students for revision and subsequent use as study guides. Data analysis showed that students perceived the activity to significantly impact both class and examination preparation (p < .0001). Furthermore, regression results show that objective summaries explained more than 15 percent of the variation in exam performance (p < .0001). Results are important owing to the fact that the intervention was not only perceived by students to be helpful, but also shown to be related empirically to performance. It is also of interest to note that course content required substantial learning, understanding, and use of mathematics, a subject matter from which most students flee.

INTRODUCTION

College students increasingly arrive unprepared for the day's class activities. Many have not read the assigned material, or if they have, not in sufficient depth to allow them to move from a basic recognition level to being able to critically analyze, extend, or integrate topics. Owing to that lack of effort, a basic instructional tool for deep learning in the classroom, meaningful guided discussion across students, is immediately precluded. Lack of preparation is a problem that plagues four-year colleges and universities, running across disciplines from small liberal arts colleges to internationally known research institutions.

It is empirical reality: students are not studying. Today's average student hits the books only about 15 hours per week (Lipka & Berrett, 2010). If a typical semester load is 14-15 hours, students average only one hour of study for every hour in class. That is 1/2 to 1/3 of the two- to three-hour heuristic that most professors suggest to their students (Welker, 2012). Adding to the preparation gap is the fact that recent research points to an even more disappointing and continuing trend: the percentage of those who read assigned material prior to class is declining (Lineweaver, 2010). Students are not only reading less, but also are not practicing quantitative analysis and application in their coursework and, therefore, leave college without those essential life and work skills (Berrett & Sander, 2013). Furthermore, a significant number of students are avoiding courses that are more rigorous. The result is that many are not learning tools, techniques, and theories that they can use in the real-world to their immediate benefit. CBS News (2014) cites a study of 2,300 undergraduates from 24 collegiate schools that showed 45 percent of students demonstrate no significant improvement in critical thinking, critical reasoning, and writing skills by the end of their second year at university. The study suggests the blame rests with students that seek out easy courses and do not study, and a university culture that values faculty research productivity over quality teaching.

Yet, students do not set out to fail. We suggest they haven't been challenged and, often, they don't know *how* to study. The purpose of this research is to present a successful quality management intervention that works to reverse the slide. We begin with a review of relevant literature, then present a resulting model of learning, follow with analysis, and end with discussion.

LITERATURE REVIEW

Bloom's work in the cognitive domain identified six ordered layers of knowledge (1956). The central thesis is that one moves systematically through each stratum of learning. At the lowest levels, one is simply involved in memorizing facts and terms. The focus is on identifying, defining, and matching. The ability to apply what was learned is non-existent at these basic levels. Analysis and application form the middle levels of the hierarchy. Here students are able to organize concepts and use them to solve problems.

However, at the highest levels one has synthesized combinations of ideas and concepts, and is able to evaluate and extrapolate on the basis of what was learned. That is to say, one takes separate ideas and joins them in such a manner that a new whole is formed. For example, a student who has learned at these levels is able to encounter a difficult situation at work, take concepts learned in class, aggregate them, and apply that merged knowledge to appropriately attack the real-world problem that was previously un-encountered.

Anderson and Krathwohl (2001) flipped the top two strata of Bloom's work. Their layers are remembering, understanding, applying, analyzing, evaluating, and creating. Remembering and understanding still cluster on recall and definitions. The middle layers center on distinguishing and using concepts. The focus of evaluation is being able to defend or justify a position; and creating is the ability to extend to some new approach. While the terms are different and reorganized, the fundamental idea remains the same as Bloom's work: there are levels of learning, they are ordered, and one must pass through each sequentially in order to get to the most desired layers (the top).

Brightman (2006) collapsed Bloom's cognitive work into three levels. They are rote, meaningful-integrated (MI), and critical thinking. Students simply memorize and recall at the rote level. This lowest grouping is the most temporal in nature; ideas are quickly forgotten. At the MI level, students are required to translate material into at least two of three languages: words, pictures, and symbols. For example, a student in a basic business statistics class would take a concept such as a "mean," explain the formula in simple English and draw a picture of it. The MI level is also where students compare and contrast tools, theories, and techniques. Finally, at the critical thinking level, students demonstrate that they can combine and appropriately apply what they have learned to negotiate unforeseen complexity. Thus, critical thinking is a combination of Bloom's analysis, synthesis, and evaluation levels.

Daley suggests two central problems with today's college students (2010). First, he believes that they leave high school unprepared for the ensuing rigor. In general, they have not been challenged and arrive with poor reading and writing skills [and if they cannot read and write, forget about deep math skills authors]. Second, they have no self-knowledge and, as such, do not have appropriate and practiced levels of motivation and discipline. These two key deficiencies form a caustic interaction with the typical time constraints that students encounter from the outset of their university studies. They are woefully lacking in skills and fail when faced with time constraints; they arrive to class [on the rare occasion when they do show up] unprepared and cluttered. Daley's observation is they do not attempt and complete assignments owing to the fact they never had their proverbial feet held to the fire in high school.

O'Brien (2010) notes that students are admitted to college with sterling SAT scores and high GPA's from high school. He states that students actually learn not only from lectures, but also by spending time wrestling with the material on their own. Yet, he cites research from the University of California system that these same students, who are seemingly so well-prepared, study only an average of 14 hours per week (down from 24 in 1961). Apparently the cause is not that education costs more and students are seeking employment more to pay for it. Neither is it that technology has streamlined the study process somewhat, as the descent was most pronounced from 1961 to 1981, well before the advent and proliferation of mainstream personal information tools. The problem is that students simply do not know how to study. Students are able to make it through their coursework with less effort owing to a student professor gap. The disconnect begins with an assigned deep activity, which the professor must first create and subsequently grade. Those activities require significant time investment to complete. Students gain power by complaining if the assignment is demanding. And they take more of the professor's time by coming in for help during office hours. The course evaluation process, while noble in its genesis, has become one of you scratch my back and I will scratch yours. One needs solid student evaluations *and* significant numbers of peer-reviewed research publications for tenure; so the professor takes the easy way out with homework, makes the assignments easier, and rigor suffers.

Lineweaver's research shows that students are not reading assignments before coming to class (2010). She notes that this is particularly true when those assignments are not assessed. While some success has been found by using pop-quizzes over the readings, students find them to be punitive, rather than a positive reinforcement. Lineweaver notes that it is important to not only motivate students to read, but also actively engage with the material and each other. She proposes on-line discussions as one method of doing so. While students reported that they felt they were better prepared for class, the use of the on-line discussions was not a significant predictor of exam performance.

Roberts approaches his work from the prospective of a professor (2010). His book suggests that students will be more successful if they show their profs that they are diligent in their efforts, work in groups outside of class, and learn to think critically. Hard-working does not mean simply plowing a bunch of unfocused hours outside the classroom. Rather, the key to learning is for students to understand that the prize is found in the *process of getting to an answer*, not simply "the answer" itself (p.102). Roberts suggests that better professors allow students to investigate questions that are not well-defined, forcing students to think over and wrangle with competing prospective solutions. He challenges students to become cynical readers, wherein they look for better arguments and conclusions, thereby not simply memorizing text. The idea is to not only look at how an explanation works from the stated position, but also from the opposite perspective.

Yu (2011) studied 395 undergraduate students in principles of accounting courses. Key to the work was the focus on non-cognitive factors of study hours and study habits. For study hours, students were asked to track the daily number of hours they spent studying, stratified by weeks where no exam was scheduled and those where an exam was to be administered. An interesting finding was that number of hours studying in and of itself was not a significant predictor of success in the class. However, *study habits* were significant at the .01 level when students were divided into high and low performing groups. Higher performing student habits included greater frequencies of reading before and after lectures, completing homework, participating in class, group studying, consulting with classmates, and reviewing notes. These results suggest that while simply throwing hours at classes does not work, a more focused approach does.

AWARENESS-BREAKTHROUGH MODEL

It is clear from the literature that students are not working effectively in college classes. They arrive unprepared owing to the fact that they either have not studied, or they do not know how to study. Those contentions are reflected in NESSE results (National Survey of Student Engagement, 2014). Across disciplines, only 27% of students report coming to class always prepared, ranging from 24% for arts and humanities majors to a high of 31% for those in health profession fields. Furthermore, fully half do not write two or more drafts of assignments before submitting them as a final product (again true across disciplines: arts/humanities, social sciences, physical sciences, business, education, engineering, and health). The key, then, is to engage students so that they are able to move out of rote level activities into those that allow (force) them to consistently practice and improve their critical communication, reasoning, and thinking skills. In an effort to close that learning gap, the Awareness-Breakthrough model is proposed.

The works of Bloom, Anderson & Krathwohl, and Brightman suggest a hierarchical learning paradigm. That is to say, one must be familiar with basic concepts (lower levels of learning) before one can effectively distinguish and apply them in the real-world (higher levels of learning). The academic gold to be mined is at the highest levels. Therefore, coursework should be aimed at facilitating a climb up the continuum of learning. Based on our literature review, we collapse cognitive learning into three, ordered, stratum:

Awareness

Applied Discovery

Breakthrough
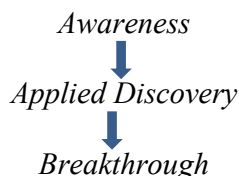
Figure 1

Figure 1 shows awareness as the most basic level. Here one learns the jargon and becomes familiar with discreet content. This is the definitional level. The next step is significant. One takes those discreet bits and begins to combine them owing to structured exercise. The focus of the activities serves to prevent wasted and unproductive time, and facilitates learning in digestible bites. Once those steps have been negotiated, students have the foundational tools to breakthrough to new levels of application and understanding. Similar to Brightman's (2006) concept of critical thinking, they are able to confront the complexity of the real-world by distinguishing and deploying an appropriate approach.

The process is facilitated by the use of five-seven meaningful learning objectives for a block of material, each written by the instructor/professor. Focusing student efforts on learning objectives eliminates wandering through a cognitive desert of unrelated and unfamiliar ideas, and allows them to acquaint themselves with important basic ideas. We suggest the overwhelming majority be written at the applied discovery and breakthrough levels, so that not only are the important concepts identified, but also the student broadens their efforts to comparing, contrasting, and deploying those theories and tools. Finally, a student's first crack at handling a breakthrough problem should not be either during an exam or, even worse, after they graduate. The best place for initial breakthrough is in meaningful guided class discussion, wherein students are separated into small groups. However, for this approach to work, the student must be prepared for class.

THE INTERVENTION

The key is to design course work so that the student is taken through the three levels in sequence, at an appropriate level of challenge. Thus, we conducted an intervention that required students to read and write, rewarded them for those efforts, and then challenged them further in the classroom with group activities, facilitated by lecture-assigned task when the concepts become complex. The process is centered on two- to three-page learning objective summaries. Students are tasked with, and earn points for, defining the elements of the concepts, tools, and theories. They earn more points for taking the concepts, tools, and theories apart and attempting to discuss how the pieces fit together and why. They then earn even more points for providing a basic example of how a tool might be (or is) used in the real-world. The idea is that they have already defined the concepts, struggled with comparing-contrasting and distinguishing, and thought about their use in the real-world *before* the professor utters a word. That is to say, all these activities are done pre-lecture, and any "lecturing" that is done is very short, followed immediately by in-class activity, and conducted at the highest levels. Some might call this approach a flipped class. Thus, classroom activities are geared toward individual thought in groups, wherein those individual contributions are combined into a more complex whole, ultimately aimed at breakthrough.

For example, an actual learning objective from one of our courses is: Compare and contrast the five generic operations strategies (cost, quality, speed, flexibility, and service). In order to compare and contrast, students must first define them. Once defined, they are then led to compare the five for meaningful similarities and differences. In order to meet the point goal of the learning objective, students then take the five and investigate how one of those competitive priorities might be found in a real business.

Where a learning objective requires math, we ask the students to define the concept or technique, run a simple calculation, attack the math by taking apart the formula and identifying the key pieces, and then translate those pieces into simple English such that they have redefined the formula in their own words. Finally, we ask them to either draw a picture of the tool or technique.

Needless to say, the initial summary efforts on the part of the students are generally poor. Grading them requires a substantial time commitment of the part of the professor. However, towards the end of the semester students are much more polished and their output is generally very good. The required time investment in grading them is greatly reduced. For most students, it is the first time that they have been challenged to study. They have made it through their entire college careers by memorizing slides that professors give them in advance, cover in class, and then test on in exams. They are better readers, owing to the fact they have actually practiced doing so during the semester. They are better writers, as well. The combination of the summaries results in some 21-30, graded, written pages over the course of the semester. Oral communication skills are improved as students not only discuss concepts among their group members, but also are forced to defend positions, individually, in class after those group discussions have taken place. Math and other analytical capabilities are greatly improved. Finally, they are much further down the experience curve from a thinking/problem solving perspective. The product is significantly more ready for the complexity of their world after graduation.

ANALYSIS

We measured the effectiveness of the summaries in a sample of 117 students in two stages. First, business statistics and operations management students were asked to answer yes/no to three statements, in order, without knowing what was to follow next. They were

allowed time to think and write their yes/no answer between questions. The students were not allowed to write their names on their responses; thus, they were completely anonymous.

The first statement was, "The summaries help prepare me for class." The second was, "The summaries help prepare me for exams." The third was, "I give the summaries my best effort." Results of the survey are presented below:

Table 1 DESCRIPTIVE RESULTS			
Question	Yes Reponses	No Responses	Total
Helped prepare for class	107	10	117
Helped prepare for exams	93	24	117
Gave my best effort	54	63	117

A large-sample Binomial Test was used to measure statistical significance (Siegel & Castellan, 1988). This test is appropriate when a single sample is taken from a population that consists of only two classes. If the yes/no responses were truly random, then the probability of either a yes or no response equals that of a coin flip: 50% (or .5). Therefore, we tested to see if yes responses were statistically higher than 50 percent. The sample was greater than 25 and $Npq > 9$, allowing us to use the normal approximation to the binomial distribution. The value of Z calculated by using equation 1:

$$Z = (Y - Np) \div \sqrt{Npq} \qquad (1)$$

Where:
Y = number of observations of interest
N = total number of observations
p = probability of a Y response = .5
$q = (1\text{-}p)$

We corrected for continuity, from discrete to continuous, which results in a "better" normal approximation (ibid, p. 43). The resulting test statistic calculation is shown below:

$$Z = [(Y \pm .5) - Np] \div \sqrt{Npq} \qquad (2)$$

The idea behind the mathematics is beautifully simple. A Z-score is nothing more than the number of standard deviations from the mean (calculated by dividing distance in units by the unit width of each standard deviation). Thus, the center point of the standard normal distribution is zero (for at the mean, one is zero standard deviations away). The higher the Z, the further the distance away from the mean, and the greater the probability that distance is statistically significant. Therefore, from equation 1, we would expect the distance between Y and Np to be very small (or equal to zero), given a sampling distribution variance of Npq, if the null is true. The resulting Z score would also be very small.

However, our results showed Z's of 8.89 for question one and 6.29 for question two: both significant at $< .0001$. Clearly, students believed that the summaries were helping them prepare for both class and exams, and that their efforts weren't wasted. While the Z for effort was not significant (-.74), it is interesting to note that nearly 54% admitted that they weren't giving their best effort. This finding suggests that students were honest in their responses, and is consistent with many visits to office hours wherein students shared that they were studying for the first time in their academic careers. As such, they were not used to allocating such significant blocks of time and thought in their studies, an anecdotal finding consistent with the literature review.

In the second stage of the analysis, we tested the statistical relationship between summary score and exam performance using regression. The accumulated summary score over the entire semester was used as the predictor variable. The dependent variable was the total of three hour-exam scores, taken over the entire semester. Results are shown below:

Table 2 REGRESSION RESULTS	
R^2	0.145472255
Model	.76 (score) + 187.97
Model P value	.000022051
Degrees of freedom	116

The regression output shows that the relationship between summary score and exam performance is *highly* statistically significant. With a p-value less than .0001, the probability that the relationship is spurious is effectively zero. Furthermore, the summaries alone explain approximately 15 percent of the variation in exam score, and every additional point scored on the outline resulted in almost one point better performance on an exam (.76). Finally, those who did not complete any summaries could expect a low D average on their exams (62.65%) and a similar grade for the semester.

DISCUSSION

The objective of this work was to introduce a revised model of learning and subsequent intervention aimed at narrowing college course preparation and study gaps identified in the literature review. A hierarchical model of awareness, discovery, and breakthrough was presented. Empirical results point to the efficacy of both the model and the intervention. First, a solid foundation can be established when students "go first" through the material, assisted by cognitive learning objectives for each block of material to help the initial navigation through the material. Second, that foundation helps students meet the challenge to learn on their own and rely less on memorizing lecture notes and slides from their professors. They are capable of doing so in a structured environment wherein they make multiple passes through concepts, cycling through increasingly higher learning levels. Third, the efforts of college educators to take responsibility for the study gap and champion a return to focused rigor are thusly supported. Furthermore, the ease with which the model and intervention can be generalized across programs of study is seen in the National Survey of Student Engagement (2014). NESSE shows three broad constructs that map to both. These engagement indicators are academic challenge, learning with peers, and experiences with faculty. Academic challenge is a combination of higher-order learning, reflective and integrated learning, learning strategies, and quantitative reasoning. Higher-order learning requires that the student not only apply and analyze based on facts, theories, and methods, but also evaluate and form new ideas and understandings. Identifying and defining those facts, theories, and methods are examples of the awareness level. In order to put facts, theories, and methods to use, one must move past definitions and combine ideas (reflect and integrate) in order to breakthrough to new meanings.

In addition, learning strategies as defined by NESSE require that the student discern key ideas, review them in their notes, and summarize what was learned. Clearly those activities map to both the Awareness-Breakthrough model and the intervention of requiring ex-ante thinking, combining, and communicating (written, with respect to the objective summaries) on the part of students. Allowing students to work on their summaries in small groups (two-four) facilitates learning with peers and sharing ideas. We also observe that both the model and intervention fall squarely on effective teaching practices (as identified by

NESSE) by faculty grading and returning summaries in a timely manner. The Awareness-Breakthrough model helps keep faculty on the critical path, while returning summaries graded with constructive criticism facilitates the process of providing feedback and important direction to students. Thus, grading is not a waste of time; rather, it becomes an important learning tool focused on positive student-faculty interaction.

Finally, while both the model and invention map broadly across disciplines, we would be remiss if we offered the objective summary approach as one that cures *all* ills. For the huge majority of students, it works. However, it is a sad fact that a few continued to either ignore the assignments or completed them in a haphazard manner, even when shown empirical reality. While significant progress was made in changing student work habits, one is reminded that learning, at some point, falls squarely on the shoulders of students. The model and intervention help them do so, but do not guarantee that all will accept that ultimate responsibility.

We are also reminded that while our results explain 15% of the variation in achievement, some 85% remains unexplained. Thus, significant fertile ground remains for future research.

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EXPLORING KNOWLEDGE MANAGEMENT IN HIGHER EDUCATION INSTITUTIONS: PROCESSES, INFLUENCES, AND OUTCOMES

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ABSTRACT

The current state of Knowledge Management (KM) literature in the higher education sector is unclear. KM can transform institutions into effective learning organizations aimed at aligning knowledge-based activities with organizational goals. Over the past decade, there has been a growing interest on the impact of KM on organizational performance. However, most research projects have been conducted in a business arena. This study analyzes recent KM literature in the Higher Education Institution (HEI) sector and explores three KM themes KM processes, influences, and outcomes on performance in existing HEI studies. This study used an integrative literature review approach to obtain empirical evidence of the three KM themes in the higher education context. An analysis of the literature provides insight into how KM in HEIs is framed in scholarly research during the early 21st century. For scholars, particularly those who are new to this field, our manuscript provides a coherent lens for their studies based on integration of the 22 prior frameworks. For academic institutions, this manuscript enables self-checks of KM activities and key influences that maximize the institutions' capabilities to manage their knowledge assets.

INTRODUCTION

Knowledge Management (KM) is recognized as one of the most important management strategies for an organization to create knowledge value that leads to sustainable competitive advantages (Wen, 2009). Many organizations consider KM as a key component of their strategies to create a sustainable competitive advantage in today's knowledge-based society (Nonaka & Takeuchi, 2004). Higher Education Institutions (HEIs) can apply KM practices to support their missions (Ramachandran, Chong, & Wong, 2013). KM assists HEIs in exploring their organizational strategies aimed at increasing knowledge-based activities in line with their institutional goals.

Over the past decade, there has been a growing interest in the impact of KM. However, most research projects have been conducted in a business arena. Not many studies have explored KM in academic institutions (Ramachandran et al., 2013). Principles and patterns of KM that are implemented in an educational setting can be similar to (Keeley, 2004) or different from (Thitithananon & Klaewthanong, 2007) application in the corporate sector.

Researchers have been studying KM frameworks and various factors that affect KM. The latest two KM meta-analysis studies were conducted by Heisig (2009) and Lehner and Haas (2010). However, their studies focus on the KM application in business. Currently, no published

studies explore KM processes and key success factors in an HEI context. This integrative literature review approach will provide insight into studies of KM in HEIs during the last decade.

Purpose Statement

The purposes of this study are to examine and analyze recent KM literature in the higher education sector and to explore KM processes, influences, and outcomes that are framed in the HEI studies.

The study is guided by three research questions:

1. What are the KM processes used in HEIs?
2. What are the KM influences used in HEIs?
3. How does KM impact HEI performance?

METHOD

To accomplish the research purposes, we use the integrative literature review "a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated" (Torraco 2005, p. 356). This study aims to reconceptualize the existing KM literature in the HEI context.

Search Process

The search for appropriate literature was conducted in Academic Search Complete (Ebsco) and ProQuest databases using the terms "Knowledge Management" and "Higher Education" and their related expressions (i.e., managing knowledge, KM, university, and college). The initial search using these keywords in the subject field resulted in 195 publications, but most were irrelevant to this study. Thus, we changed the search field by using the title field that provided us more relevant papers.

The term "Knowledge Management" first appeared in the ABI Inform Index in 1975 (Serenko & Bontis, 2004). We repeated their process and limited the search with the two aforementioned key terms since our study focuses on how to manage an organizations' knowledge in the higher education context. We used all years available in the databases at the time of the research from 2001 to 2014 (September 30). The search resulted in 27 articles in Ebsco and 17 dissertations in ProQuest.

Additionally, we used Google Scholar to increase the number of papers. Google Scholar led to other documents that cited original papers. We reviewed the cited documents of the 4 articles that most related to our research topic. This forward snowballing technique resulted in 8 extra articles for a total of 56 initial papers.

Selection Process

To screen papers for relevance, we set the inclusion criteria: (1) peer reviewed (for articles), (2) English language, (3) all years available in the database, (4) an empirical study, and (5) focus on research studied in relation to KM processes, influences, and outcomes in the HEI context. Then, we assessed the relevance of papers based on their abstracts. As a result, we identified and included 15 articles and 7 dissertations for the final analysis.

Abstraction and Synthesis

We used a review matrix table to organize data. This table presents a summative overview of publication and consists of key aspects related to the research purposes, including name of author (s), publication year, and study findings. Then we used open coding, a qualitative data analysis technique (Merriam, 2009), to identify common themes across 22 reviewed publications (see Appendix).

FINDINGS

This section reports findings relevant to the four research questions. It begins with a brief overview of 22 analyzed publications. Then we explore KM processes, influences, and outcomes using existing studies.

Overview of the Analyzed Publications

An exhaustive search for KM literature in the HEIs yielded 22 relevant publications published between 2002 and 2013.Eight publications were dissertations and 14 were journal articles in 13 different peer reviewed journals. The country-based population included the U.S. (6 studies), Malaysia (4 studies), Iran (3 studies), Thailand (2 studies), and China, India, Israeli, Norway, Serbia, Turkey, and the UK.

To investigate the three KM themes, we employed a framework concept. A framework is a concise and holistic description of major elements and principles of a domain (Heisig, 2009). It explains a mechanism of any domain by listing the major elements as well as their relationships and the principles of how these elements interact (Heisig, 2009). In KM empirical studies, many scholars have suggested three major elements for a KM framework (Cranfield, 2011; Gold, Malhotra, & Segars, 2001; Watcharadamrongkun, 2012). The first element, KM influence, is organizational enablers that manage knowledge in an efficient manner (Gold et al, 2001). The second element, KM process, is an organization's activities that handle the organization's knowledge (Cranfield, 2011; Gold et al, 2001). The last element, KM outcome, refers to the quality and effectiveness of overall organizational performance (Watcharadamrongkun, 2012).

KM Processes

Among the 22 selected papers, we found 17 KM process frameworks. To classify the activities of KM processes, we employed Heisig's (2009) analysis as a guideline to differentiate KM process terms. Heisig studied 160 KM frameworks in a business sector developed during 1995-2003 and categorized KM processes into six categories: share, create, use, store, identify, and acquire.

Table 1 lists the KM activities used in the 17 KM process frameworks in our sample. We repeated Heisig's (2009) analysis to categorize the activity terms into six constructs. We changed the category of identify into assess because the term assess can describe all KM activities in its classification. Consequently, the six constructs used in this analysis are acquire, create, store, share, use, and assess. Then, we combined similar terms within a category. To classify each term in a proper construct, we examined its definition that is mentioned in each analyzed study.

Table 1 represents quantitative data for the six categories on term and framework levels how often a term is mentioned within all frameworks and how many frameworks that one or more terms in each category are mentioned. For example, the Share category (with an upper-case

letter) includes 10 activities that yield 23 cases in the 17 frameworks. The activity of share (with a lower-case letter) is the most frequently used (6 cases) among 10 different activities in the Share category.

Table 1
Six Classifications of KM Processes Used in HEIs

KM process categories	Total count of terms in all frameworks (67)	Number of frameworks	Percent of framework (n=17)
1. Share: share (6), externalization (4), socialization (4), transfer among organizational members (3), allocation (1), contribute (1), dissemination (1), distribution (1), integration (1), presentation (1)	23	17	1000
2. Store: combination (4), codification (3), store (2), organization (1), sustain (1)	11	10	58.2
3. Use: internalization (4), use (2), application (1), institutionalization (1), transfer to job (1), transform (1)	10	9	52.4
4. Create: generate/ generation (4), create/ creation (3), build (1), improvement (1), learn (1)	10	9	52.4
5. Acquire: acquisition (2), buy (1), capture (1), gain (1), get (1)	6	6	35.9
6. Assess: analyze (1), assess (1), define organizational purpose (1), evaluation (1), identify (1), measure (1), validation (1)	7	5	29.1

Note. Numbers in parentheses correspond to the number of entire publications in the 17 analyzed frameworks mentioning KM processes

Share

All of the 17 frameworks mention knowledge sharing in their KM processes. Knowledge sharing is a process of distributing ideas between people (Rahimi, Arbabisarjou, Allameh, & Aghababaei, 2011). Many terms that have been used to describe a knowledge sharing process including share, externalization, socialization, transfer, allocation, contribution, dissemination, distribution, integration, and presentation.

Store

Knowledge storage involves a process to embed and categorize knowledge in an organization's members and mechanisms so that it can be easily retrieved (Aujirapongpan, Vadhanasindhu, Chandrachai, & Cooparat, 2010). Five terms in this category contain combination, codification, storage, organization, and sustain.

Use

The purpose of knowledge utilization is to apply knowledge to individuals' work embedded in organizational operations (Aujirapongpan et al., 2010). The Use category includes internalization, usage, application, institutionalization, transfer, and transform.

Create
Knowledge creation focuses on the development of new knowledge or the replacement of existing knowledge (Watcharadamrongkun, 2012). Synonymous terms includes generation, creation, build, improvement, and learn.

Acquire
Knowledge acquisition refers to activities of the accessibility and assimilation of acquired knowledge (Aujirapongpan et al., 2010). Similar terms include acquisition, buy, capture, gain, and get.

Assess
Knowledge assessment focuses on an analysis that assures usefulness and value for an organization (Watcharadamrongkun, 2012). The examined terms in this purpose include analysis of existing knowledge (Shoham & Perry, 2009), defining an organization's purposes and strategies (Shoham & Perry, 2009), and identification of knowledge deficiency (Dagli et al. 2009).

This section examines the KM process constructs in higher education research. The six categories show an analysis of terms in the 17 KM process frameworks. The next section will examine KM influences to provide an understanding of how HEIs manage knowledge practices to achieve their knowledge-based goals.

KM Influences
We found 16 frameworks in 22 targeted studies regarding KM driving and hindering factors. We extracted 76 different terms from the 16 KM frameworks and modified the previous analysis of Heisig (2009) and Lehner and Haas (2010) to classify the components of the KM influences. Our classification contains three main categories: organizational management, human orientation, and KM mechanism. Table 2 represents quantitative results of the content analysis of the 16 KM frameworks mentioning the description of the KM influences. The classification of synonyms and related terms results in three main categories with 11 sub-categories.

Table 2 THREE CLASSIFICATIONS OF KM INFLUENCES USED IN HEIS			
KM influence categories	Total count of terms in all frameworks (76)	Number of frameworks	Percent of framework (n=16)
1. Organizational management	37	15	93.5
1.1 Technology: technology/ IT resource (5), infrastructure (4), tool (2)			
1.2 Communication: knowledge sharing community (2), community of practice (1), story-telling (1), learning from others (1), F2F interactive communication (1), opened communication (1), availability of local and English languages (1)			
1.3 Policy and procedure: policy and strategy (2), internal process (2), workload and time constraint (2)			
1.4 Motivation and reward system:			

KM influence categories	Total count of terms in all frameworks (76)	Number of frameworks	Percent of framework (n=16)
Table 2 **THREE CLASSIFICATIONS OF KM INFLUENCES USED IN HEIS**			
reward/incentive/benefit (3), motivation (2), recognition (1)			
1.5 Structure: structure/ info-structure (3)			
1.6 Human resource practice: training and mentoring (2), human resource (1)			
2. Human orientation 2.1 Culture: culture (10) 2.2 Leadership: leadership (7), attitude of senior management (1), top management support (1) 2.3 Individual attitude and skill: understanding KM (3), experience (1), knowledge self-efficacy (1), perception of students and faculties (1), skill (1), trust in person (1), volunteer (1)	28	13	81.2 5
3. KM mechanism 3.1 Measurement: measurement/performance measurement (3), KM roadmap (1), KM system quality (1) 3.2 KM system quality: explicit and tacit knowledge (2), knowledge capture and acquisition (1), meaning (1), trust in knowledge (1), knowledge center/ hub (1)	11	7	43.5

Note. Numbers in parentheses correspond to the number of entire publications in the 16 analyzed frameworks mentioning KM influences

Organizational Management

The largest portion of KM influence terms are in the organizational management category with 37 terms mentioned in 15 frameworks. This category includes six sub-categories focusing on the management mechanism that involves organizational policies, processes, practices, and infrastructure to support KM processes.

Technology terms are the most cited terms found in this sub-category (11 times out of 37 cases). Four different terms include technology, IT resource, infrastructure, and tool. These terms refer to an infrastructure of technological devices and systems (such as hardware, software, network) to enhance the development and distribution of knowledge across an organization (Basu & Sengupta, 2007; Lee, 2007; Mohayidin, Azirawani, Kamaruddin, & Margono, 2007).

Eight diverse terms relate to an organization's communication. Although these terms are different, they share the same purpose of creating knowledge sharing among organizational members. The knowledge sharing community is one of the most effective communication mechanisms that supports the better KM processes (Golden, 2009; McCarthy, 2006). This community includes face-to-face interactive communication (Tan & Noor, 2013), an openness in communication (Tan & Noor, 2013), a knowledge sharing platform called a community of practice (Chumjit, 2012), a story-telling technique (Chumjit, 2012), and an availability of local and English languages (Arntzen, Worasinchai, & Ribière, 2009).

Policy and procedure refer to a broad collection of organizational management mechanisms for KM implementation. Three terms include KM policy and strategy (Golden,

2009), internal process (Davoodi, Alipourian, Norouzi, & Anvari, 2012), and workload as well as time constraint (Chumjit, 2012).

Motivation and reward system refers to social and psychological aspects that encourage individuals to feel rewarded to share knowledge in their workplace community (Arntzen et al., 2009). The motivation and reward system ranges from monetary, such as bonuses and incentives, to non-monetary incentives, such as recognition and promotion (Chumjit, 2012; Tan & Noor, 2013).

Structure or info-structure is mentioned in four studies that define the term differently. Cranfield (2011) viewed structure in terms of management structure and style, in particular a chain of command in managing knowledge. Mohayidin et al. (2007) used the term info-structure as an initiative from top management to create KM culture and change management programs. Coukos-Semmel (2002) and Watcharadamrongkun (2012) defined structure as the set of contextual factors referring to an institution's size, age, auspice, functional area, and Carnegie classification.

Human resource practice involves personal development activities provided by an institution. These activities aim to increase an individual's understandings and skills for KM implementation (Chumjit, 2012; Golden, 2009).

Human Orientation

The second category of KM influences, human orientation, involves individuals' attitudes and behaviors facing KM. This category has three sub-categories including culture, leadership, and individual attitude and skill.

Culture, the most frequently cited term, is a pattern of individuals' beliefs and behaviors that enables members to share their ideas and knowledge (Lee, 2007; Ramachandran et al., 2013). The term culture in KM influence frameworks is a broad term that has multiple characteristics. For example, Ramachandran et al. (2013) defines culture as "a set of beliefs [including] organizational purpose, criteria of performance, the location of authority, legitimate base of power, decision-making orientation, leadership style, compliance, evaluation, and motivation" (p.79). Lee (2007) concentrates on knowledge sharing aspects of culture comprised of community-orientation, trust or openness, collaboration, entrepreneurship, and responsiveness. Tan and Noor (2013) have a specific focus on individuals' willingness to share knowledge. Culture in these frameworks has diverse characteristics but the same purpose regarding individuals' values, norms, and behaviors to conduct KM.

Leadership involves top management's attitudes and supportive actions toward KM. Similar to culture, leadership has a complex description with a variety of definitions and components. In the context of managing knowledge assets, it can be defined as the leaders' abilities to align KM with organizational strategy, promote the value of KM, facilitate the development of a learning organization, and assess the impact of knowledge (Ramachandran et al., 2013). Some studies examine leadership in terms of administrator vision, strategic planning, value of learning, and motivation (Arntzen et al., 2009; Lee, 2007). Others study top management's understanding of the importance of KM and their engagement in knowledge sharing practices (Tan & Noor, 2013). These examples illustrate the strategic focus on KM.

The last sub-category, individual attitude and skill, refers to organization members' perceptions (Arsenijević, Tot, & Arsenijević, 2010), understanding or knowledge (Chumjit,

2012), and experiences or skills (Cranfield, 2011; Yusoff et al., 2012) regarding KM practices, in particular the importance and use of KM (Coukos-Semmel, 2002; Lee, 2007). Other cited terms are knowledge self-efficacy, volunteer, and trust. Knowledge self-efficacy and volunteer refer to an individual's voluntary willingness and ability to share knowledge in a team (Chumjit, 2012; Tan & Noor, 2013). Trust a person is a psychological state of an individual who believes that other persons are reliable and competent enough to share knowledge through collaboration (Ellingsen, 2003; Tan & Noor, 2013).

KM Mechanism

The last category of KM influences is the KM mechanism itself. It deals with an effort to produce a KM outcome effectively. Two sub-categories include measurement and system quality.

Measurement or performance measurement is a foundation of the KM initiative "to control, evaluate, and improve knowledge practices to ensure that KM stays on track" (Ramachandran et al., 2013, p.81). The purposes of measurement are not only to monitor the KM on-going processes but also to assess the relationship of its processes and organizational performance (Lee, 2007; Yusoff et al., 2012). A KM roadmap includes a master plan and an action plan to clearly identify what are the purposes and activities in conducting KM (Arntzen et al., 2009).

KM system quality refers to knowledge resulting from the KM system that is highly valued by individuals (Tan & Noor, 2013). Similar terms include knowledge meaning, trust in knowledge sources, effective explicit and tacit knowledge, and knowledge capture and acquisition. These terms describe the quality of knowledge assets. In addition, knowledge center and hub influence capacity of a knowledge source because knowledge that is maintained and stored efficiently can lead to availability and accessibility (Yusoff et al., 2012).

This analysis shows that KM influences are diverse and complex. They involve multiple interactions between individual and organizational enablers. An academic institution needs to manage these factors as a whole so that the KM processes can be executed as optimally as possible.

KM Outcomes

Table 3 demonstrates the analysis of the 18 KM outcome frameworks. The classification of the different outcome terms lead to three broad categories including achievement of higher education mission, improvement of organization management, and effectiveness of KM. The major purpose of the first two categories is to measure organizational performance resulting from managing knowledge. The third category primarily assesses the perception of organizational members toward the KM effectiveness.

Table 3 **THREE CLASSIFICATIONS OF KM OUTCOMES USED IN HEIS**			
KM outcome categories	Total count of terms in all frameworks (43)	Number of frame works	Percent of framework (n=18)
1. Achievement of higher education missions	19	13	72.2
1.1 Teaching: teaching improvement (4), learning culture			

KM outcome categories	Total count of terms in all frameworks (43)	Number of frame works	Percent of framework (n=18)
Table 3 **THREE CLASSIFICATIONS OF KM OUTCOMES USED IN HEIS**			
(2)			
1.2 Research: research and publications (3), research collaboration (1)			
1.3 Academic service: industry interface (1)			
1.4 Productivity: creativity/ innovation performance (2), productivity of employees (2), organizational performance (1)			
1.5 Performance score: accreditation score (1), rating score (1), pass rate (1)			
2. Improvement of organization management:	8	6	33.3
2.1 Organizational development: strategic planning/ decision-making (2), administration (1), change management (1), quality control (1)			
2.2 Individual development: faculty growth (2), job satisfaction/ motivation (1)			
3. KM effectiveness	16	7	38.9
3.1 Knowledge asset: knowledge creation (5), knowledge capitalization/ social capital (2), knowledge utilization to job (2), knowledge sharing/ lessons learned (1), information shipping (1)			
3.2 Perception toward KM: perception of importance (2), perception of use (2), KM effectiveness (1)			

Note. Numbers in parentheses correspond to the number of entire publications in the 18 analyzed frameworks mentioning KM outcomes

Achievement of Higher Education Missions

The largest portion of KM outcome terms is allotted to the dimension of higher education mission with 19 of 43 total terms. The sub-categories within this group comprise three core missions of academic institutions and two higher education outcome proxies. These five sub-categories consist of teaching, research and publication, academic service, productivity, and performance as assessed by an academic testing agency.

Six studies indicate that KM helps improve teaching competencies and increase learning culture through the value-added change in teaching and learning (Arntzen et al., 2009; Arsenijević et al., 2010; Cranfield, 2011; McCarthy, 2006; Mohayidin et al., 2007). Teaching and learning can be enhanced through knowledge sharing processes among all members. Chumjit (2012) determines that the knowledge creation processes assist the development of the teaching approach called student-centered learning.

Producing research and publications is cited by four research studies. KM increases the research collaboration across a university resulting in an increase in the number of research projects and publications (Chumjit, 2012; Cranfield, 2011; Tan & Noor, 2013). KM improves an accessibility to scholarly communication, such as informal communications about initial research, formal publications, and technical reports (McCarthy, 2006).

Only one study mentions the impact of KM on academic service. KM has a positive influence on the enterprise's product innovation performance through a relationship between the network embeddedness of university industry collaboration and KM during collaborating processes (Chen & Wei, 2008).

Productivity contains creativity and innovation performance, organizational performance, and employees' productivity. Commonly, productivity in HEI literature reflects on such output as student growth, faculty growth, quality of campus placements, publications, and product innovation (Arntzen et al., 2009; Basu & Sengupta, 2007; Chen & Wei, 2008). Another perspective focuses on productivity in human resources. Rahimi et al. (2012) validates a human resource productivity model of Beaudreau (2009) named ACHIEVE that combines seven words: Ability, Clarity, Help, Incentive, Evaluation, Validity, and Environment. The study of Rahimi et al. views productivity with a perspective in management processes.

Only one KM study uses a performance score assessed by an accrediting agency to infer organizational performance. The study of Watcharadamrongkun (2012) integrates three achievement scores including accreditation score, rating score, and North American Pharmacist Licensure Examination (NAPLEX) pass rate to measure academic performance of colleges and schools of pharmacy in the US. Formal assessment from the national agency is lacking in most studies.

Improvement of Organization Management

The second category, improvement of organization management, includes organizational development and individual development. Organizational development involves any processes aimed at accomplishing an organization's desired goals. Four studies endorse that KM benefits the processes of decision-making (Keeley, 2004), strategic planning (Chumjit, 2012), change management (Mohayidin et al., 2007), and quality control (Cranfield, 2011). Accessible and actionable knowledge assets help support managerial decisions based on empirically sound evidence.

The other sub-classification is individual development. KM generates the competency development of an institution's members, in particular faculty members. KM provides directly impacts on quality of teaching and number of research publications, which lead to faculty growth (Basu & Sengupta, 2007). Furthermore, KM fosters a collaborative learning environment that enables individuals to perform jobs successfully (Arntzen et al., 2009).

KM Effectiveness

The effectiveness of KM reflects an institution's use of the KM processes. KM effectiveness covers two sub-categories: knowledge assets and individuals' perceptions toward KM. Knowledge assets involve the development (Arntzen et al., 2009; Cranfield, 2011) and the utilization (Ellingsen, 2003) of the knowledge capital as the desired outcome of KM. The other KM effectiveness sub-category investigates the knowledge value of organizational members. Two studies report the perception of faculty members toward the use or performance and the importance of KM strategies (Coukos-Semmel, 2002; Lee, 2007).

The analysis of the KM outcomes indicates that KM is perceived not only to be a management tool that primarily intends to enhance an academic institution's missions, but also to provide the benefits that closely link to the quality and improvement of organizational

management processes. KM outcomes can be embraced through the assessment of the effectiveness of KM processes aiming at producing knowledge assets occurring in an academic institution.

DISCUSSION

We used an integrative literature review approach to analyze KM processes, influences, and outcomes in 22 HEI studies. The investigation of this study addresses major issues of each KM theme as follows.

KM Processes

The analysis of the 17 KM process frameworks reveals the six core activities including share (100 percent), store (59 percent), use (53 percent), create (53 percent), acquire (35 percent), and assess (29 percent). This classification warrants discussion of two important facets.

First, knowledge sharing becomes a primary concern of the KM studies in higher education. This activity is cited in all of the 17 KM process frameworks. The major argument about why several research studies contribute to knowledge sharing relates to its outcome. Nonaka and Takeuchi (2004), authors of the dominant perspective on knowledge management over the past 20 years, remark that knowledge sharing is the transformation of tacit knowledge into explicit knowledge through the processes of social interaction. Then explicit knowledge is internalized in individuals as new tacit knowledge in practice. With this endorsement, it implies that the success of KM ultimately depends on knowledge sharing behavior.

The activity of assessing knowledge is least cited (5 out of 17 frameworks). Knowledge assessment can play a vital role in the KM processes because it focuses on the analysis of the value and usefulness of the KM system. Knowledge assessment can be conducted at the beginning and ending steps of any KM process. Assessment at the beginning helps identify the right knowledge for the right person at the right place. Assessment at the ending step assists in refining knowledge for the organization's long-term use. Knowledge assessment should be included in the KM processes.

KM Influences

The 76 KM influence terms in Table 2 represent both soft and hard concepts in the management field. The soft and hard concepts can be used as the alternative lenses to understand the facets of KM influences. The soft lens has the perspective that it is necessary to get individuals to share what they know to make KM work in the organization (Gan, Ryan, & Gururajan, 2006). This concept has an appreciation of the importance of organizational culture. In contrast, the hard lens looks at the deployment of an organization's infrastructure (such as information technology, work practice, and chain of command) to enable KM activities within the organization (Gan et al., 2006; Siriram, 2012).

We further examined the KM influences through the soft and hard lenses and grouped the 76 KM influence terms into 11 sub-categories regarding Table 2. Figure 1 portrays the interaction of two aspects of soft and hard. There are six soft and five hard KM influences. The soft influences reflect the intrinsic drive to encourage individuals to build organizational knowledge-based values. The hard influences show the explicit practices of the organization to lead members to keep on the KM track. These two aspects can be portrayed by the Yin-Yang

symbol that represents the interconnected and interdependent approach to enhance KM integration in an institution.

Soft influences
1. Culture
2. Leadership
3. Individual attitude
4. Motivation & reward system
5. KM quality (i.e., explicit & tacit knowledge, trust)

Hard influences
1. Structure
2. Policy & procedure
3. Human resource practices
4. Communication
5. Technology
6. Performance measurement
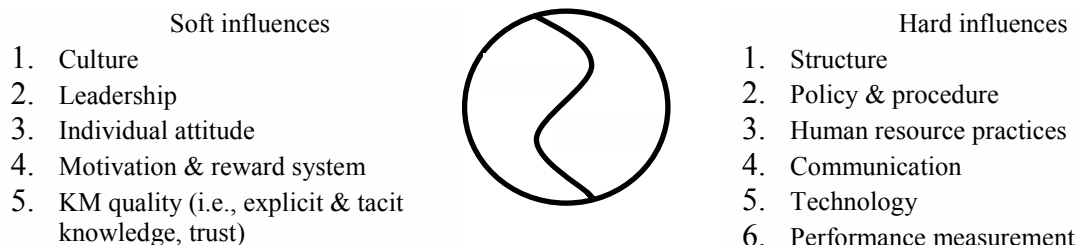
Figure 1
Soft and Hard KM Influences

KM Outcomes

The 43 outcome terms used in education performance leads us to classify three broad categories of KM outcomes: achievement of higher education mission, improvement of organization management, and KM effectiveness. Both direct and indirect organizational performance measurement can be applied to these outcome categories. Direct measurement can be performed by higher education's productivity (such as the number of research grants and publications, the number of community service activities, and students' achievement scores) and performance scores assessed by accredited education agencies (such as ranking and rating). Indirect measurement that focuses on performance management can be assessed through examination of organizational management processes, such as strategic planning, change management process, quality control, and human resource management and development. These approaches contribute to assessing the effectiveness of KM through organizational performance.

CONCLUSION

We discovered various KM processes, influences, and outcomes that are important for transforming an academic institution into a learning organization (Marquardt, 2011). To conclude our study, we propose a framework showing relationships among sets of KM factors that have been identified as important to the university's functions (Figure 2). KM is continually processed with a range of activities to acquire, create, store, share, use, and assess knowledge for knowledge reuse especially in the accomplishment of higher education missions and the improvement of organization management. To achieve an institution's goal, there are two main factors, organizational management and human orientation, that influence the successful application of the KM initiative. The former ties to the explicit infrastructure of organizational structure, policy and procedure, human resource practice, technology, communication, and motivation system. The latter concerns an organization's intangible aspects comprised of culture, leadership, and individual attitude and experience toward KM. These two core influences are interconnected to improve the management of knowledge flow throughout the institution.
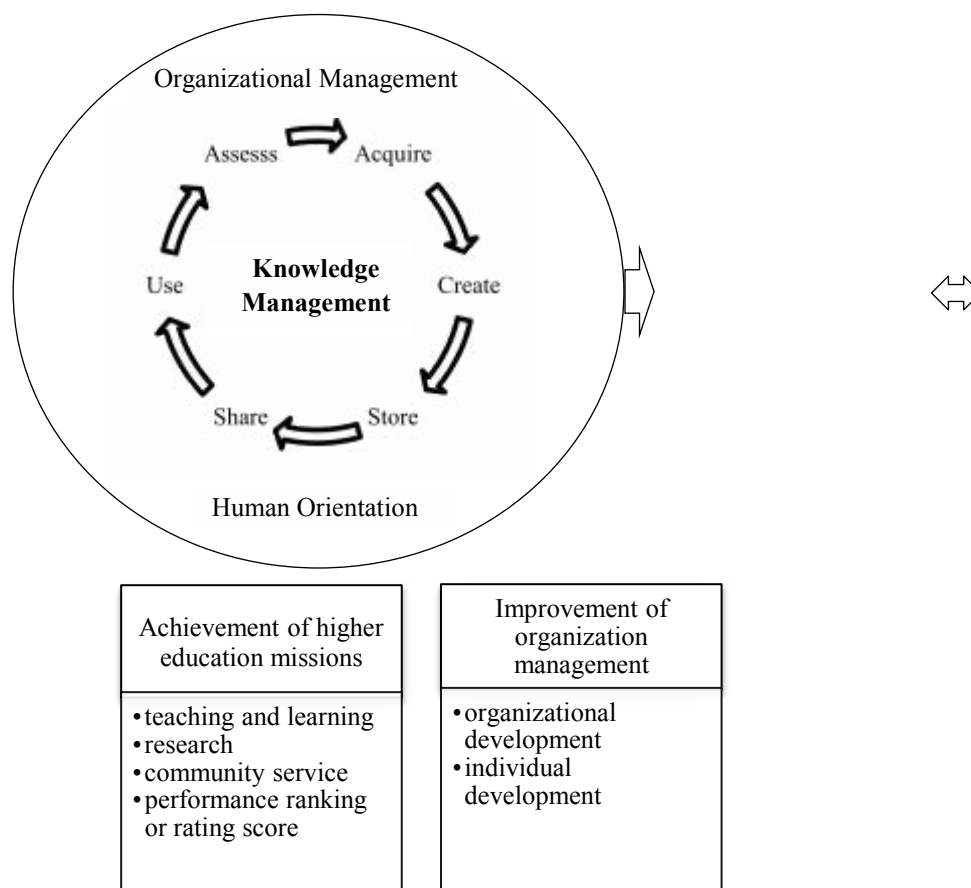
Figure 2
Proposed KM Framework in HEIs

IMPLICATIONS

This study contributes to the existing KM body of knowledge by investigating the constructs of the three KM themes in the higher education arena. It reconceptualizes the existing KM literature concerning KM processes, influences, and outcomes in the HEI context. It offers a holistic conceptualization of how KM, especially the KM framework, is dynamically addressed by the 22 previous studies. For scholars, particularly those who are new to the KM field, our findings provide a reference enabling a quick access to a comprehensive list of KM studies. Practically, the findings assist the academic institutions to conduct self-checks of KM activities and key KM influences that maximize the institutions' capabilities to create and manage their knowledge assets. Proper management of knowledge is likely to provide an opportunity for developing a learning organization which is essential for adaptiveness in dynamic environments (Marquardt, 2011).

LIMITATIONS

Our findings are based on a review of published journal articles and dissertations. We concentrated on the empirical studies addressing the three KM themes in the academic institutions. The major limitation is the limited number of analyzed publications. Few were available that met our criteria. Some publications related to this area may have been missed because of their use of differing terminology.

FUTURE RESEARCH

This study opens up the avenue for future research possibilities. The proposed KM framework can be utilized with qualitative and quantitative research to examine the dynamics of KM. Better research designs will likely identify and assess KM processes, influences, and outcomes and provide clearer understanding in relation to the potential benefits of KM for organizational learning and performance. Longitudinal studies and multiple case studies of KM systems in HEI may provide significant new insight.

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APPENDIX

No.	Author (s)	KM Framework		
		Process	**Influence**	**Outcome**
1.	Coukos-Semmel (2002)	KMAT processes Generation Codification Transfer	KMAT strategies Culture Leadership Technology Measurement Contextual factors Functional area Carnegie classification State control Institutional age	KM effectiveness and efficiency Organization's use of KM processes Relationship between the use ratings and the importance rating
2.	Ellingsen (2003)		Trust in knowledge sources	Knowledge utilization to job
3.	Keeley (2004)	SECI model localization Externalization Combination Internalization KM process model framework Get Use Learn Contribute Assess Build and Sustain		Improving planning and decision-making
4.	McCarthy (2006)	KM activities Capturing and creating Sharing Measuring	KM factors Knowledge sharing community Culture Technology	KM Benefits Teaching Learning Research
5.	Basu and Sengupta (2007)		KM components Infrastructure Culture Motivation Attitude of senior management	Performance Student enrollment Faculty growth Faculty attrition Quality of campus placements Publications Industry interface

Table caption above table: **LIST OF THE 22 KM ACADEMIC PUBLICATIONS IN HIGHER EDUCATION INSTITUTIONS**

Wen, Y. (2009). An effectiveness measurement model for knowledge management. *Knowledge-based systems*, *22*(5), 363-367.

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(caption above table) LIST OF THE 22 KM ACADEMIC PUBLICATIONS IN HIGHER EDUCATION INSTITUTIONS

No.	Author (s)	KM Framework		
		Process	Influence	Outcome
6.	Lee (2007)	KMAT processes Generation Codification Transfer	KMAT strategies Leadership Culture Technology Measurement	KM strategies Perceptions of performance Perceptions of importance
7.	Mohayidin, Azirawani, Kamaruddin, and Margono (2007)	Personal KM practices Generation Acquisition Storing Dissemination	Socio-technical components Info-culture Infrastructure Info-structure	Dependent variable Value added change in teaching and learning
8.	Chen and Wei (2008)	KM activities Sharing and transfer Transformation		KM outcomes Enterprise's product innovation performance Enterprise learning performance
9.	Arntzen, Worasinchai, and Ribière (2009)		KM barriers Work overload Lack of a clear KM roadmap Make the acquired knowledge available in two languages Motivate people to codify their knowledge and to use technological systems	KM outcomes Knowledge capitalization Use or reuse knowledge Create knowledge Actualization of knowledge Productivity Share knowledge and lessons learned Identify and localize knowledge Knowledge acquisition Use the right infrastructure People's satisfaction and motivation
10.	Dagli, Silman, and Birol (2009)	KM tools Deficiency of knowledge Improvement and buying of knowledge Sharing of knowledge Analyzing knowledge		
11.	Golden (2009)		KM practices Policies and strategies Leadership Incentives Knowledge capture and acquisition 1.	

| No. | Author (s) | KM Framework | | |
		Process	Influence	Outcome
			raining and mentoring Communications	
12.	Shoham and Perry (2009)	KM processes Define organizational purpose or organizational need Analyze knowledge Cooperate and transmit accumulated knowledge and experience		Change management
13.	Arsenijević, Tot, and Arsenijević (2010)	KM processes aining and creating Sharing and allocation Storage and organization Usage of new knowledge	Perception of students and faculties	Learning culture in class
14.	Cranfield (2011)		Impacts on KM implementation Culture Management structure and style Difficulties experienced	KM Benefits Quality control Teaching and research resources used Information shipping
15.	Rahimi, Arbabisarjou, Allameh, and Aghababaei (2011)	SECI Model Socialization Externalization Combination Internalization		Creativity
16.	Chumjit (2012)	SECI Model Socialization Externalization Combination Internalization	Factors for successful KM Understanding KM Meanings Leadership in KM Community of practice Tools Incentives & recognition Training programs Learning volunteers Storytelling Learn from other's experience Factors for Unsuccessful KM Workload and time constraints I will share knowledge if I have a problem There is no note taking Close relationship	KM outcomes Teaching Research Administration Strategic planning

The title row of the table reads: **LIST OF THE 22 KM ACADEMIC PUBLICATIONS IN HIGHER EDUCATION INSTITUTIONS**

No.	Author (s)	KM Framework		
		Process	Influence	Outcome
17.	Davoodi, Alipourian, Norouzi, and Anvari (2012)		Independent variables General management Leadership style Strategic vision Internal process Human resources	Dependent variable KM
18.	Rahimi, Damirch, and Seyyedi (2012)	Independent variables Validation Distribution Presentation Creation Application		Dependent variables Social capital Productivity of employees: ACHIEVE
19.	Watcharadam rongkun (2012)	KM Processes Acquisition Integration Institutionalization	Predictor variables Structure IT resources	Performance ACPE accreditation NAPLEX pass rate Rating of college through USNWR
20.	Yusoff, Mahmood, and Jaafar (2012)	SECI Model Socialization Externalization Combination Internalization	KM enablers Leadership Culture/ structure Process Explicit knowledge Tacit knowledge Knowledge hubs/ centers Measure People/ skills Technological infrastructure	
21.	Ramachandran, Chong, and Wong (2013)	KMAT practices Generation Codification Transfer	KMAT factors Culture Leadership Technology Measurement	
22.	Tan and Noor (2013)	Knowledge sharing	KM enablers Trust Knowledge self-efficacy Reciprocal benefits Top management support Rewards Culture KM system infrastructure KM system quality Openness in communication F2F interactive communication	Research collaboration

<div align="center">LIST OF THE 22 KM ACADEMIC PUBLICATIONS IN HIGHER EDUCATION INSTITUTIONS</div>

ASSESSING STUDENT PROBLEM SOLVINGUSING STRUCTURED VERSUS UNSTRUCTURED CASE ANALYSIS

Angela L Tidwell, Howard University

ABSTRACT

This paper examines student problem solving performance through the use of case study analysis in a required graduate business course. Enrolled students were divided into two groups and assigned to solve the problems of a recent case study. One group was given general (unstructured) instructions to analyze the case. The other group was given detailed (structured) instructions to analyze the case. Problem solving is defined using Bloom's Revised Taxonomy. The literature review investigates research studies that have indicated how problem solving has been defined and how case based learning is used to assess student performance. A single factor ANOVA was used to determine whether there was a significant difference between the groups. Results showed that students who received structured instructions had higher problem solving scores on various levels of Bloom's Taxonomy. The benefits and limitations of the study are discussed.

INTRODUCTION

Problem solving is one of the learning goals noted in the accreditation standards of the Association to Advance Collegiate Schools of Business International (AACSBI). As a learning goal, problem solving is measured to demonstrate that schools accomplish the educational aims at the core of its activities (Attaway et. al, 2011). The assessment or assurance of learning process affords a business school the opportunity to gather data in a standardized format, which is used to assess program outcomes. Furthermore, problem solving is assessed using multiple methods, including but not limited to, quantitative word problems. Problem solving skills are used in qualitative assessments were students must make a decision based on the facts presented, identified issue and the method available to solve the issue. Students utilize problem solving skills in case analysis. This paper will assess student problem solving skills in case analysis in Creating Value in Supply Chains, a required course for Executive MBA students.

Creating Value in Supply Chains is an online course with three major components negotiations and procurement; manufacturing; and logistics. Negotiations consist of working with suppliers and customers to find a mutually agreeable solution formulating and executing a purchasing strategy. The procurement strategy consists of developing a profile of a corporation's needs and its supply environment. That section ends with student executing a procurement strategy during a simulation. The simulation consists of teams that compete against each other to get the best value for the products and services it intends to procure. The second section consists of analyzing manufacturing and logistics problems through case studies. The problems may vary from determining the best quantity of inventory to selecting the best warehouse based on costs analysis. The final section consists of students developing an innovation product business plan that incorporates the procurement, manufacturing and logistics issues. In this final component, measurement of student attainment in the supply chain course usually covers the acquisition of specific

course knowledge in negotiating and purchasing strategies, manufacturing planning, execution and control, as well as logistics strategy development.

Prior to the case analysis, students were also introduced to theories of supply chain management through the course material and previous case analysis. In addition to the course content and skills from the case analysis process described above, students were expected to acquire additional perspective which form part of the course objectives: (1) assess and analyze the strategic role of supply chain management (SCM) in order to make decisions of supply chain resource investments;(2) assess ethical and corporate responsibility dimensions of each SCM decision; (3) devise solutions to a given set of SCM problems, including daily challenges that supply chain managers commonly face; (4) negotiate successfully based on knowledge of effective negotiation practices; and (5) use software as an analytical tool to solve SCM problems such as those related to inventory, forecasting, quality control, and location analysis.

Furthermore, student performance is measured at intervals in the course. Assignments include live negotiations, recent headline discussions, and case analysis. Students were also introduced to supply chain management theory for purchasing, supply management, quality control, inventory management, transportation and location analysis. The assignments served multiple purposes for students that allowed them to: integrate knowledge from cross-functional disciplines; recognize and communicate different conceptual models; build confidence and knowledge of supply chain management theories; and foster development of problem solving skills.

This paper extends the work of Collins, Lewis and Friday-Stroud (2011) and examines the data recently collected in there quired graduate-level business course, Creating Value in Supply Chains, to assess student problem solving and the role of case methodology in the demonstration of student learning and accomplishment of learning outcomes. The following sections describe the relevant literature, the method for assessing problem solving, results of the study, conclusion and future research.

LITERATURE REVIEW

Deek (1999) created a problem solving process that is grounded in the work of Bloom (1956) on cognitive processes or skills, Sternberg (1985) on cognitive structures or facilities, and Gagne (1985) on cognitive outcome or results. Deek categorized problem solving into six recursive stages: formulating the problem, planning the solution, designing the solution, translating the solution, testing the solution, and delivering the solution. Problem formulation requires knowledge about the domain or subject, problem modeling skills, and communication skills. Solution planning requires general subject knowledge, problem-specific knowledge, and strategic skills. Solution design requires the same knowledge and skills as the planning stage. Solution translation requires, in addition to the knowledge and skills of the previous stage, additional organizational, syntactical, semantic and pragmatic skills. Solution testing requires similar organizational and communication skills. Solution delivery also requires organizational and communication skills. However, Cooper et al. (2008) argue that knowledge-lean, closed problems do not require any specific content knowledge to solve and that have a specific path to the answer.

Recent literature shows problem solving as identifying gaps between reality and goals and taking actions to resolve it (Shermerhorn, 2013); Grieff, Holte and Fulke (2013) research suggested that problem solving can be understood in different ways such as domain-specific and analytical problem solving; interactive problem solving; and collaborative learning. Problem solving is not limited to quantitative contexts. He (2015) argues that a significant reason hinders management courses from emphasizing problem-solving skills as a

learning goal in their classroom the lack of a systematic approach and relevant teaching materials for the development of problem-solving skills in these courses. Furthermore, problem solving has been extended as a type of instruction method. Problem-based learning is believed to be able to help the students more effectively master relevant knowledge, build problem-solving skills, promote self-directed learning, improve collaboration, and inspire further learning and exploratory motives (Hmelo-Silver, 2004; Brownwell & Jameson, 2004)

Recent literature shows that various assessments have been used across disciplines to analyze students'problem solving within and beyond the classroom.Young-Lin(2015) measured student problem solving performance using data stored on a computer-based tutorial program; Dekhane et al. (2013) assessed student problem solving through the use of developing mobile apps; Ghosh (2015) considered problem solving in a hospital operation context; Myskowsky (2015) measured problem solving based on personality traits; and Cevik (2015) assess problem solving of nursing students. The case study methodology is one assessment that offers a balance of real-world application and the convenience of readily available data.

Collins et al. (2011) reported that case studies have the advantage of going beyond rote memorization of theories and concepts to challenge students to put themselves in the positions of the characters and consider the implications of making a decision (Andrews & Noel, 1986; Herreid, 1994; Sansalone, 1990). However, case analyses sometimes provide more information to students than they would realistically have in actual organizational situations (Gloeckler, 2008). In addition, case studies do not replicate the complete experience of making a decision in terms of the real-time surge or intricacy of emotions, thoughts, and peer or supervisory pressure (Andrews and Noel, 1986; Mitnick, 2009).

The Revised Bloom's Taxonomy was used to prepare and assess the case analysis and yield greater results in the area of student-centered learning (Anderson & Krathwohl, 2001). The six (6) cognitive domains in the Revised Bloom's Taxonomy from lower order thinking to higher order thinking are: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating (Anderson & Krathwohl, 2001). The lower two cognitive domains, Remembering and Understanding, focus on student retaining information and being able to display a basic understanding. With the higher order domains, Applying, Analyzing, Evaluating, and Creating, students are expected to demonstrate that they can utilize the information gained at the lower level domains in various capacities. That is, they can apply the information and use their problem solving skills to apply the information in different scenarios. This is specifically critical to graduate students who often desire management positions. The case-based instruction can improve the effect of learning for graduate students with more complex example cases and labs (Chin et al., 2014).

Case analysis must meet two objectives: develop student problem solving skills that employers expect and engage students in the topic of interest. In 2011, Collins et al. assessed critical thinking using structured versus unstructured case analysis. Their study involved assessing student performance from two sections of an undergraduate capstone course, Strategic Management. The findings supported the hypothesis that student critical thinking performance was significantly higher on case analysis when provided with structured instructions.

There are various methods that can be used to deploy the written case analysis. This paper focuses on the differences between the structured case analysis approach and the unstructured approach. The structured case analysis method provides the students with detailed directions to guide them through the analysis of the case. On the other hand, in the unstructured case analysis method the students are given a framework for conducting the analysis. Previous research shows that students who were taken through a progressive learning process, moving from structured to unstructured case analysis were successful in

traditional (unstructured) case analysis approach (Klebba & Hamilton, 2007). This research hypothesizes that the students provided with the detailed guideline will have higher scores on the problem solving rubric than those who were provided the framework.

METHODOLOGY

The problem solving learning goal was assessed using a business case assignment (i.e., a course-embedded measure) in the Creating Value in Supply Chains course. Enrolled students were candidates in a graduate business program. There were two sections of the course. The online course lasted five weeks, and students in each section completed a final case analysis to assess problem solving. Students were asked to complete a comprehensive case study. The cases were assigned from a database of reputable case studies applicable to the subject matter and program level. There was one professor teaching two sections of this course during the semester in which this assessment took place. The professor provided one group with a detailed guide for completing the case, while the other group received a brief framework of the components of the case analysis.

The detail guide (structured) consisted of specific components that must be addressed in the case analysis. The components included in the guide are to provide: 1) An overview of the relevant facts; 2) Identify the issues in the cases; 3) The relevant rules and exceptions, if applicable; 4) An application of the rule to the facts; 5) A probable conclusion.

The brief framework (unstructured) for completing the case analysis contained guidelines to aid in the analysis. The guidelines to the students are to provide: 1) the major issues, including internal and external environmental factors; 2) possible solutions to the issues; 3) pros and cons of the solution; 4) a cost-benefit analysis; 5) a final solution. For the purpose of this research, we assessed a random sample of the case analyses from both groups using a grading rubric (see Figure 1) from the National Center for Research on Evaluation, Standards & Student Testing (CRESST)

Each case analysis was graded on a scale of 1 to 4, for each level of Bloom's Taxonomy (the taxonomy).The mean was calculated for each group, by level. Typically, the one-way ANOVA is used to test for differences among at least three groups; the two-group case can be covered by a T-test. When there are only two means to compare, the T-test and the F-test are equivalent (Gosset, 1908). An independent-samples T-test was conducted to compare structured and unstructured instructions at every level of the taxonomy.

RESULTS

The results (Table 1) illustrate significant differences in overall problem solving abilities between the two groups: the structured group had higher overall problem solving scores(3.3) compared to the scores of the Unstructured group (2.2).Moreover, there were significant differences between subgroups of the taxonomy. All pvalues were significant at $p<0.05$. There was a significant difference in the scores for structured (M=3.7, SD=0.83) and unstructured (M=2.8, SD=0.58) conditions at the 'Understanding' level; t (22)=15.48, p=0.0028. These results suggest that structured instructions have an effect on 'Understanding'. Specifically, the results suggest that when students receive structured instructions, their critical thinking increases at the lowest level of Bloom's Revised Taxonomy, 'Understanding. Significant differences were also found at every other level of the taxonomy.

In addition, there was a significant difference in the scores for structured (M=3.8, SD=0.84) and unstructured (M=2.4, SD=0.32) conditions at the 'Research' level; t (22)=9.71, p = 0.0005. The two groups varied the most at this level. These results suggest

that structured instructions have an effect on 'Research'. Specifically, the results suggest that when students receive structured instructions, their critical thinking increases at the 'Research' level of Bloom's Revised Taxonomy.

Next, there was a significant difference in the scores for structured (M=2.9, SD=0.73) and unstructured (M=2.2, SD=0.62) conditions at the 'Planning' level; t (22)=18.81, p = 0.0088. These results suggest that structured instructions have an effect on 'Planning'. Specifically, the results suggest that when students receive structured instructions, their critical thinking increases at the 'Planning' level. However, the two groups had the least difference at this level of the taxonomy.

There was also a significant difference in the scores for structured (M=3.3, SD=1.12) and unstructured (M=2.0, SD=0.7) conditions at the 'Carrying Out Plan' level; t (22)=16.76, p = 0.0014. These results suggest that structured instructions have an effect on 'Carrying out Plans'. Specifically, the results suggest that when students receive structured instructions, their critical thinking increases at the 'Carrying out Plan' level of the taxonomy.

Furthermore, there was a significant difference in the scores for structured (M=3.1, SD=1.3) and unstructured (M=1.8, SD=0.81) conditions at the 'Evaluate Results' level; t (22)=9.11, p = 0.0151. These results suggest that structured instructions really do have an effect on 'Evaluate Results'. Specifically, the results suggest that when students receive structured instructions, their critical thinking increases at the 'Evaluate Results' level of the taxonomy.

Finally, there was a significant difference in the scores for structured (M=2.9, SD=1.3) and unstructured (M=2.2, SD=0.84) conditions at the 'Communicate' level; t (22)=11.28, p = 0.0059. These results suggest that structured instructions really do have an effecton 'Communicate'. Specifically, the results suggest that when students receive structured instructions, their critical thinking increases at the highest level of the taxonomy, 'Communicate'.

However, the two groups differed in patterns of the irresponses across the five problem solving subtests. Neither group showed progressive scores at higher orders of Bloom's taxonomy. Structured scores were highest at the two lowest levels of the taxonomy, 'Understanding' and 'Research'. Unstructured scores were highest at 'Understanding' and 'Planning', but decreased from there, with the exception of 'Communicate'.

CONCLUSIONS AND FUTURE RESEARCH

The intent of this study was to extend the research of Collins et al. (2011) by applying their model of structured versus unstructured case analysis to problem solving, and determine whether either, both or none had an effect on student's problem solving abilities on an assigned case study at various levels of Bloom's Taxonomy. The problem solving abilities of students enrolled in the Creating Value in Supply Chains were compared across two sections of the course. The differentiating factor for the two groups was the type of instruction given. Results suggest that detailed (structured) guidelines on case analysis assignments may result in greater critical thinking performance of students compared to students receiving a framework (unstructured) on the same assignment. Future research will include collecting more data, to support or refute the conclusions. Also, more than one faculty member to improve inter-rater reliability may improve future assessment results. In addition, other factors related to the students, online learning and the faculty members should also be controlled for in future research to determine if the difference among groups is statistically significant.

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Subtest Group	t-value	df	p-value	Mean Difference	Std. Error Difference
Understanding	15.4	22	.0028	0.9	0.25
Research	9.71	22	.0005	1.4	0.52
Planning	18.8	22	.0088	0.2	0.11
Carrying Out Plan	16.7	22	.0014	1.3	0.42
Evaluate Results	9.11	22	.0151	1.3	0.49
Communicate	11.2	22	.0059	0.7	0.18

Table 1

	1	2	3	4
Understanding the Problem	Need a complete explanation of the problem before getting started	Needs some clarification from others to understand the problem	Understands (can explain) the problem and proceeds to the next step	Understands the problem and relates it to other situations in the working world
Research & Gather Information	Does not collect any information that relates to the topic	Collects very little information, some relates to the topic	Collects some basic information, most relates to the topic	Collects a great deal of information, all relates to the topic
Planning to Solve the Problem	Designs only one strategy, required assistance to evaluate strategy	Brainstorms a few strategies and requires assistance to select an appropriate strategy	Brainstorms several strategies, decides on an appropriate solution	Brainstorms many strategies, decides on appropriate solution to each strategy
Carrying out the Plan	Attempts to solve problem with an inadequate strategy	Solves problem without making modifications	Solves problem using design, makes appropriate modifications to conclude	Challenges self to try new methods to solve problem
Evaluating the Results	Requires assistance to evaluate solutions	Limited evaluation of solution without assistance, compare solution to the problem	Compare actual and expected results	Suggests other modifications or applications for other work situations, design own evaluation criteria
Communicates Result	Explains what happened in simple terms	Explains what happened using terminology related to the problem	Explains the reason one method is better using specialized language and symbols including specific measurements and quantities	Generalizes solution, describes how solution can be used in other situations

Figure 1
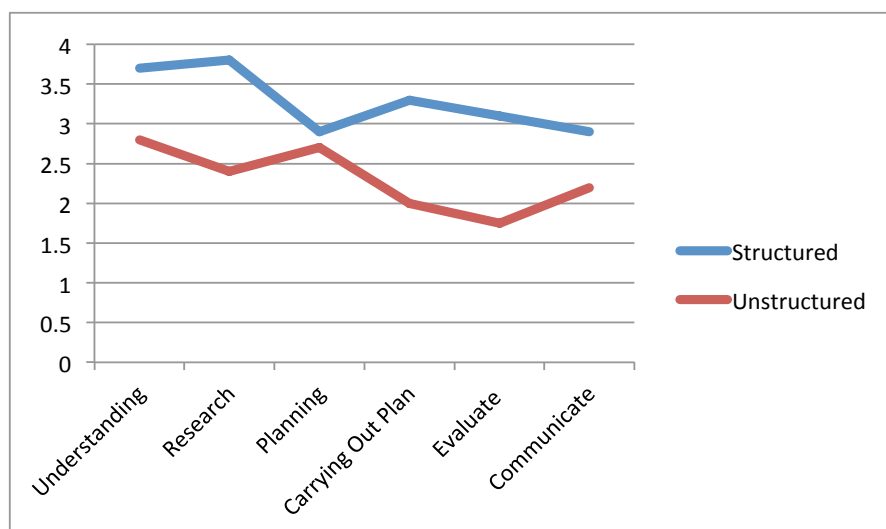
Problem solving abilities of students in Creating Value in Supply Chains course receiving Structured (n=12) and Unstructured (n=11) directions on case analysis (maximum score per subtest = 4)

Figure 2

ACADEMIC CAPITALISM AND THE IMPACT ON STATE SPENDING FOR HIGHER EDUCATION: PERCEPTIONS FROM MEMBERS OF THE OKLAHOMA STATE LEGISLATURE

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ABSTRACT

A significant body of literature in political science and economics demonstrates that a variety of competing interests impact state spending for higher education. With a changing political landscape and declining university operating budgets funded by state governments, the future of public spending for higher education is uncertain. This study examines state legislator perceptions of state spending for higher education in Oklahoma. The study explores how legislators perceive state spending for higher education and the process by which participants seek to understand higher education's level of financial need in Oklahoma. This qualitative study aimed to explore these perceptions through legislative session observations, committee documents, and participant interviews of legislative members and legislative assistants. The study found that Oklahoma has a higher education governance system with high autonomy, the Oklahoma State Regents for Higher Education (OSRHE). The OSRHE receives money for all public higher education institutions in a lump sum appropriation. The lump sum is one component of a large omnibus budget bill that legislators vote on for all state agencies. Because of higher education's autonomy and the methodical appropriations process, there is little need for most legislators to have an intimate understanding of how public institutions operate financially. The findings suggest that higher education's autonomy and the appropriations process impact how legislators understand and perceive higher education operations and spending habits. The perception of spending habits may have long-term implications on higher education appropriations in Oklahoma.

INTRODUCTION

The integration of universities into the market economy has given rise to numerous research studies over the past two decades (Slaughter & Leslie, 1997; Slaughter & Rhodes, 2004; Ehrenberg, 2000; Tuchman, 2004; Blumenstyk, 2001; Mowery & Ziedonis, 2000). *Academic capitalism* contends that an interdependent relationship exists between higher education and the market economy. Furthermore, the theory indicates that by engaging in market behavior, universities will make changes to their organizational governance by developing new offices and personnel to manage these relationships. The interconnectedness of the new networks alters the identity of institutions and their relationship to external stakeholders (Slaughter & Rhoades, 2004).

Research suggests that since 1940, higher education has undergone a systematic shift (Ehrenberg, 2000). The implications of this shift have been the subject of much debate, especially with regard to funding, student education, affordability, access, and the future of higher education itself. Although many scholars have contributed to the larger body of work, the landscape of higher education has continued to change, making further research necessary. This study explores the existing research related to higher education funding past and present. The study is not limited to funding figures, but embraces a discussion of the shifts in politics, society

and culture that have collectively impacted state spending on higher education and resulted in the perpetuation of academic capitalism. Research demonstrates that the percentage of university operating budgets funded by state governments has decreased significantly since 1980 (Ehrenberg, 2000; Rizzo, 2004). Recent literatures has explored some of the factors contributing to this change, and its potential impact on higher education establishments.

The percentage of higher education expenses funded by state governments decreased significantly from the late 1940s (Boyd, 2002; McKeown-Moak, 2001; McPherson & Schapiro, 2006), while the average tuition price at public institutions increased by 248% between 1970 and 2001 (Ehrenberg, 2000). States funded 74% of the cost of higher education at public institutions in 1970, but by 2000 that figure had fallen to 43% (Rizzo, 2004). State allocations for higher education nearly tripled from the early 1970s, reaching over $60 billion in FY2000 (Rizzo, 2004) and $88 billion in FY2009 (SHEEO, 2009). However, these figures can be deceptive. The number of students attending college rose substantially, thus limiting the funding increase by percentage of students enrolled to only 1% per year (25.9% total), and the consumer rate of inflation rose by 346.56% (Financial Trend Forecaster, 2010). In addition, between 1980 and 1996 the educational expense per student rose 42 percentage points higher than consumer price inflation (Kane & Orszag, 2004).

The effects of academic capitalism has gradually impacted state spending on higher education since 1980. There seems to be an evolving relationship between students, universities, governments, the economy, and business (Robst, 2001). Universities have developed as interstitial organizations, producing knowledge and forming partnerships with both the public and private sectors (Slaughter & Leslie, 1997). This relationship has had a profound impact on university spending, campus infrastructure, and revenue streams. This study is a glimpse in to that evolving relationship. It is intended to capture legislative perceptions of university needs.

PURPOSE AND SETTING

The purpose of this research was to explore how members of the Oklahoma State Legislature and legislative staffers perceived higher education's level of financial need in the state. A qualitative design was chosen to explore how legislative members and staffers interpreted and understood their experiences. The fundamental premise of a qualitative study is that social reality is situated in how members interpret its meaning (Creswell, 2009). The study was conducted through the lens of an interpretavist epistemological view that suggests that different perspectives will emerge according to how higher education interacts with the market economy and how members of the state legislature perceive that interaction. More specifically, the study employed a symbolic interactionist theoretical perspective, believing that change derives from the interactio n of members within each perspective (Crotty, 1998). State legislators respond to society's collective conscience by developing policy.

The primary setting for this study was the State of Oklahoma Capitol building, which was constructed in 1919. Situated just west of downtown Oklahoma City, one of two metropolitan areas in Oklahoma, the building is identifiable through its white dome and neoclassica l architectural features. Each year, the capitol is the gathering site for legislative decision making for the state. It also houses the Oklahoma Supreme Court, the state treasurer, state auditor, and state attorney general. The study was conducted during the First Session of the 54th Oklahoma Legislature. The legislative session opened on February 4, 2013 and adjourned sine die on May 24, 2013. Observations of legislative sessions were conducted in May 2013. Participant interviews took place after session adjournment, from May 26, 2013 until June 25, 2013.

The study is a time specific snapshot of a bounded system (Smith, 1978). Studying

policymakers and their construction of social constraints may present opportunities for understanding emotional and political tendencies that affect decision-making. The study was exploratory and the purpose was to examine a single entity, the state spending process for higher education process in Oklahoma. The researcher used a variety of methods conducive to exploring state appropriations and how Oklahoma policymakers identified higher education in the greater scope of state appropriations.

LITERATURE REVIEW

Oklahoma traditionally spent nearly 50% of its state budget on common and higher education (Rizzo, 2004). In 2011, however, 36 states, including Oklahoma, cut their funding to higher education operating budgets (Johnson, Oliff, & Williams, 2010). At the beginning of the recession in 2008, Oklahoma experienced its largest budget deficit since the Great Depression (Douglass, 2010). The decline in state revenue collections in Oklahoma led to budget conversations such as cutbacks to higher education, public health, and the state workforce (Johnson, Oliff, & Williams, 2010). This section draws a brief distinction between the different state funding structures used in the United States, before focusing specifically on the Oklahoma system and the funding process currently in place. A table of all states and their higher education governance structure is provided in the appendices.

Governing Boards and Funding

Research suggests that support for public universities is seemingly contingent on the actions and commitment of three critical entities: a) the campus, b) the higher education governing body, and c) the state government (Weerts & Ronca, 2006). There are three primary structures that states commonly use to appropriate money to higher education: 1) Consolidated governing boards, 2) coordinating boards, and 3) state planning agencies. Several scholars (Nicholson-Crotty &

Meier, 2003; Knott & Payne, 2002; Weerts & Ronca, 2006) have suggested that the type of governing body may affect the extent of the appropriations and enhance political control. This section highlights the different types of governing structures and their impact on state spending. The section will end with a discussion of the higher governance structure in Oklahoma and the regulation level of each state.

Consolidated Governing Boards

A consolidated governing board typically provides the governance for a unitary higher education entity. A unitary governing board is a single body and power is centralized. Although many states have umbrella organizations and boards that assist with regulation, power is centralized within the unitary board. For example, the University System of Ohio contains all public universities, colleges, and technical schools in Ohio. Most states with unitary governing boards allocate money to the governing board at large. Universities that have a single governing board, rather than a larger coordinating board, tend to receive a higher proportion of state appropriations. Examples of states with a unitary governing board include Florida, Iowa, Illinois, Massachusetts, New Hampshire, Oklahoma, Oregon, Utah, and Wisconsin (Weerts & Ronca, 2006; Nicholson-Crotty & Meier, 2003).

Coordinating Boards

Coordinating boards are usually made up of numerous universities and colleges. Coordinating boards are decentralized, and decision-making is left to each system. For example, the state of Texas has six university systems that each contains multiple colleges and universities. Each system is governed by its own Board of Regents. Research suggests that

states with a decentralized governing system have higher tuition costs and a larger proportion of tuition paid for by students (Bowen et al., 1997). Coordinating boards do not govern institutions and may or may not have regulatory or advisory authority over academic budgets (Knott & Payne, 2003). Examples of states with coordinating boards include Colorado, Kentucky, Louisiana, Missouri, Montana, Virginia, and Washington (Nicholson-Crotty & Meier, 2003; Knott & Payne, 2002).

State Planning Agencies

States with planning agencies or advisory committees typically have the least centralized structure. Planning agencies typically do not have any governance authority over higher education institutions. This is the least common governance structure and its impact on state spending varies. However, flagship institutions within these states typically receive the most political favors (Knott & Payne, 2003). There are currently eight states with a minimally regulated planning agency, including California, Delaware, Michigan, Minnesota, Nebraska, New Mexico, Vermont, and West Virginia (Nicholson-Crotty & Meier, 2003).

Regulatory Powers

Consolidated governing boards will always have regulatory authority over program approval and budget. However, coordinating boards may or may not have regulatory power depending upon the system. Planning or advisory agencies have no regulatory authority. Knott and Payne (2002) researched higher education governance by state. Table 1 demonstrates the regulatory power of higher education systems in each state.

Oklahoma

Oklahoma has a centralized and highly regulated governing board with strong regulatory powers (Nicholson-Crotty & Meier, 2003). Oklahoma has a state regents system that serves as an umbrella organization covering several smaller boards of regents. The Oklahoma State Legislature pays a lump sum to the Oklahoma State Regents of Higher Education (OSRHE), which then allocates money to all colleges and universities on the basis of a formula. The money for all public higher education institutions is dependent on state revenue collections. The following section focuses specifically on the interaction of the OSRHE as a conduit between legislative appropriations and university operating budgets.

The OSRHE is the entity responsible for the allocation of funds to all public higher education institutions in the state of Oklahoma. The power of the state regents and the defined role of the agency are vested in Article 13, Section A of the Oklahoma Constitution. Established in 1941, the OSRHE seeks to maintain the integrity of the higher education system and to coordinate the state's 25 public higher education entities. It is an umbrella organization comprising two research institutions, 10 regional universities, and 11 community colleges, with each system governed by a board of regents.

To provide an equitable distribution, a funding formula was created to serve as a guide for allocating money to public higher education institutions. Each institution must draft a funding proposal and submit their expected expenses to the regents. The institution must then send representatives to a budget hearing where the school has the opportunity to defend its budget proposal (Kreidler, 2009). The budget proposal provides the regents with an idea of the institutional cost, and they then allocate the money accordingly (Part One: The State System, 2012).

METHODS

The study used qualitative methods to explore legislator perceptions of state spending in

Oklahoma. Merriam (2002) states that there are three major sources of data collection for qualitative research: interviews, documents, and observations. This study employed participant interviews and a series of observations during legislative sessions to ensure data triangulation (Patton, 2002). The unit of analysis in this study was the individual participant. Seven legislators and seven political staffers were chosen for interviews. Criterion sampling was used to select interview participants.

Participants

Legislator participants for this study were members of the Oklahoma State Legislature and were selected on the basis of their political background, educational experience, and committee involvement. Specifically, all participants selected served on one of the following legislative committees: Senate Appropriations Committee, Senate Appropriations' Subcommittee on Education, Senate Committee on Education, House Appropriations and Budget Committee, House Appropriations' Subcommittee on Higher Education, or Higher Education and Career Technology Committee. Participant involvement in one of these committees was important because it indicated that the member should be somewhat familiar with the policies and practices related to higher education and/or state appropriations. Legislator participants represented both political parties, Democratic and Republican, and both districts with a public institution and without one. Participants experienced varied, with newly elected policymakers and those nearing the term-out period (12 years). Participants represented both men and women, and served in both legislative bodies, the Oklahoma House of Representatives and the Oklahoma Senate.

Legislative staffers served as a supplemental data source for the study. Legislative staffers aid members of the legislature through a variety of tasks that include advising on issues, agenda setting, press correspondence, researching issues, clerical work, etc. Staffers were important to this study because their research and counsel may have influenced the political perspectives of members of the legislature. Seven legislative staffers were chosen for interviews. Although it was not required that they serve a legislator who was also a participant in this study, those selected served a legislator whose committee involvement corresponded with the areas listed in the preceding section. Staffer participants represented both political parties, Democratic and Republican, varied in experience from five months to 15 years.

FINDINGS

The findings in this study suggest that there is no clear partnership between higher education officials and the Oklahoma legislature. Universities in Oklahoma do little to tell their story to the legislature, and most legislators do little to seek an understanding of higher education's level of need. Although most legislators identified that higher education is likely to need increased appropriations, few seemed interested in examining the need specifically. There seems to be a substantial disconnect in the state funding process in relation to higher education. As one legislator participant said, a majority of the state funding issues are "on autopilot." Nearly all participants spoke of the limitations of the budget process and that there were "so few in the process." Although each legislative participant in this study sat on a committee related to appropriations or higher education, few spoke of the intricacies of needs and issues.

Your Perceptions are Your Realities

For most legislators, their view of higher education needs were shaped by their own perceptions. When asked about her perceptions of the process, one legislator responded that "your perceptions are your experiences." Another legislator stated that "everyone's perceptions are based on their experiences and we have folks who went to a large university and then folks that didn't go to school at all." Another member added, "universities have to be very cognizant of their public perception because of the political reality and, for lack of a better

term, the pressure that the far right is going to put on elected officials, when it comes to funding higher ed." Furthermore, when asked about the perception of higher education spending, one legislator discussed the perception of the far right stating that "they are very anti-debt, and they don't understand that concept and method of financing facilities is extremely important...." A moment later, she elaborated on the importance of educating the far right on higher education funding issues, stating:

That perception (on bond indebtedness) generally comes from the same group. And the commonality is that a lot of them don't have, they don't have a university experience. They don't understand the value of it....So I think that schools have to, probably the best, the biggest challenge they're going to have is how do they join forces. And, instead of competing, and pitting and they've gotten better at it over the last few years, and how does our regional university system band together and become kind of a cohesive unit, and how do the large universities, not work against each other, but work cooperatively because that's going to be their big challenge.

In addition to the perceptions of individuals who have not attended a higher education institution, perceptions of university budgets can be tied to participants' multiple experiences. Several legislators discussed the effect of football and large stadiums on the perception of need. One legislator stated:

When you're looking at this pot of money and it's hard to put more in to the pot, then you come out on the short end of the stick a lot of times. Which is really unfortunate because it's not, and I think a lot of time too, and I'm not 100% sure on this, but I think a lot of people when they look at Oklahoma's higher education, they immediately think of football. And they think 'oh well these are huge money making endeavors, and they have these huge stadiums and they give all these, these schools must have tons of money'.

Another legislator discussed university needs in relation to student contributions: People will come out to the Board of Regents and say 'the tuition and fees are too high.' Okay? And I would say, let's get in my car and we will drive through the student parking lot and we'll look at the cars. Okay? That would settle the argument. Okay? So, there is a perception in the legislature that, um, well, there are very nice cars in the parking lot.

In comparison to the political effect of personal experience, another majority legislator added: "And so when you tend to look at people's priorities, it tends to have to do with your personal experiences than even more than party or rural/urban, and those of us that see a value in a four year degree from a major institution and tend to put that as a priority."

Competing Interests

Most legislators were quick to note the size of the state budget and the percentage allocated to higher education. One member added, "Our state budget consistently runs 53 to 55 percent of the budget going to education as a whole." Although most focused on the relationship of education appropriations in comparison to the state budget at large, their perception of higher education allocations varied. One member described higher education appropriations as "deplorable," while another added "piss pour." However, one legislator explained, "well, when you look at our total state budget and you look at total state spending, um, I feel like we're in line with other states that are within our region, and other states that we generally compete with." Two legislators echoed that sentiment suggesting that spending by percentage was "in-line" and "a good balance with the state budget." However, another member declared, "the current level of state spending, compared to other states, not near, what I feel we should be at."

Participants genuinely value higher education and support funding initiatives. However, their perception of higher education's need in comparison to other areas varied. One legislator stated, "We have a lot of gaps and holes, and we have a lot of areas that we neglected for

years that we need to shore up and make sure that we're competitive." Although several suggested that we have to find better ways to fund higher education, most believed that appropriations will "continue to be status quo." One legislator added, "Oklahoma has multiple priorities, and when you start to appropriate dollars, we find things that we've neglected for years." When it comes to education for funding priorities, one participant stated, "It's all linked together….Everything is tied together, and it comes together."

The perception of funding needs for higher education varied among participants. One legislator indicated: I really think some of the legislators think we're spending too much on highered. One legislator made the comment that, that highered is not in the state constitution so therefore we shouldn't have to fund highered at all. Like then it's not our responsibility to fund anyone's college education, even if they're really smart and have like you know the best and the brightest in our state. He says that it's not our responsibility to fund them so when you look at the real question of this state legislative session is that what is what is a core function of government? Do we fund public safety? Do we fund the state highway patrol? Do we fund corrections? Department of Corrections office in my district, they're outnumbered 100 to 1 in my precinct and there's no way that's safe. Those all can affect our views of higher education and could impact funding both in the immediate future and far out.

When comparing the interests of all budget priorities, most agree that their perceptions of funding needs for higher education are impacted by competing interests. Although most participants question university operating budgets and rising tuition prices, their perceptions of higher education appropriations were impacted more by competing interests. This view may be due to the nature of the appropriations process. Possible explanations for this phenomenon are discussed in subsequent sections.

Funding Facilities

Although opposition to federal policies may affect the availability of dollars, participants indicated that there is resistance to financing college campus buildings. The Master Lease Program was discussed at length in the Senate. One member stated:

The capital asset and management legislation that passed this year is actually probably going to impact universities because those facilities are going to be inventoried. So as we begin to look at all the state's assets comprehensively all across the state so that we know all that we're managing, all that we're paying to upkeep, um, I think it's going to impact university systems. And redirect those back to services that benefit the state of Oklahoma and not just building buildings, so that will be a change.

Building space was a big concern among several legislative participants. One legislator added, "Well, we need more buildings to graduate more people. Plain and simple. The legislature doesn't think our schools should be built, it's just dollars and cents, and that's going to hurt us in the long run." In addition to the Master Lease Program, the House worked toward a cap on bond indebtedness. Members had varying views. One legislator stated, "Members don't understand capital projects," while another added that "they're good, it's tightening our belt by focusing on core government." In addition, a majority party member added:

There are those who don't think we should build anything. So, I think really the big challenge over the next few years is going to be facility space and probably not so much as that appropriated but I think it's going to be a battle we're going to fight internally on debt for a long time.

Participants had varying views on leveraging debt for capital improvement projects. Collective ly, however, most participants shared that they were conservative on funding initiatives.

Understanding Spending

Several members stated that data pertaining to agency spending, and specifically higher education, were not always readily available. One legislator stated, "I take it for granted before I was elected that our elected officials knew where every dollar went." Another participant stated that, "Can you really say that they're out of control with spending? Or can you say, think they're doing a great job with what they have? We're not sure." Most participants agreed that data could be made available to them. In addition, participants believed the bodies tend to be more reactive then strategic. One legislator stated that, "As legislators, for years [we] have just kind of responded to whatever pressures had to the most, urgent, at that any particular time rather than looking at things as a comprehensive, strategic, manner." A long-time state legislator stated:

At the end of the day when we bring these appropriation bills out, we voted on the higher ed appropriations and career tech and the career college. And it's not detailed in there how each college gets how much money. And it's not detailed in there on how [much] text books [cost], and like professors on their salaries, or the light bill, or the phone bill, and the internet bill, and, I don't know. No one has ever brought that stuff to me.

Several participants spoke of the difficulty of planning strategically. One legislator shared that, "With term limits now days, it's just so hard to have real oversight." In addition to term limits, one participant explained:

We respond well to federal funding. We responded well to what teachers and educators are screaming about in that year. But, the opposite is coming up with a strategic long-term plan and saying 'okay well we need to heavily invest in this area to shore up and then, but then, next session, next year, we need to move this along' But part of that is just politics. It's hard to be strategic and thoughtful.

Several participants stated that the legislature routinely responds to current funding issues and past shortages. However, little discussion of strategic funding took place. One legislator stated: We get an awful lot of opinions as elected officials, lots and lots of opinions. But they're focused on what one person, about what they think. But I very rarely do I get real data brought to me, and I kind a like decisions, data-driven decisions, from a strategic background. I'm used to making decisions with what numbers tell me, but we don't get a lot of that, from education, or from anybody, which is not a good thing, because then it kind a looks like we're hiding something, because then we don't exactly how much this costs. And then, state agencies are the worst, and higher education institutions are the worst, and they're just as bad about it as everyone else too. They tell us what they want us to know but not what the truth is all the time.

Participants suggested that funding reform is necessary but the process has remained constant. Several participants described budget prioritization as "status quo," while another declared, "Education is going to get 50% of the budget, always." A staffer described the process by stating, "There might be some that want to change how highered gets funded but they won't voice it. [My legislator would] rather focus on things he can change."

The State Constitution and Fiscal Control

The preceding section demonstrated that legislators seldom receive data pertaining to higher education spending. In addition, several participants believed the legislature lacked control over government agencies. Several participants, in addition, mentioned higher education specifically. One legislator stated:

Most people don't understand that there's that constitutional barrier that prevents us from really having a say in how those dollars gets spent. And that's probably true, and actually, there's a hard constitutional barrier when it comes to highered. But the populace constitution that we have, which is one of the largest constitutions in the world, especially

when it comes to the state governments, dilutes the power of the Governor. It dilutes the power of the Legislature. All these agencies are really their own little fiefdoms. And they really have their own little board that they report to. And especially with term limits now days, it's just so hard to have real oversight with any of them, but especially with highered because that constitutional wall.

In addition to the constitutional provision, tuition-setting authority has been controlled by the Board of Regents since 2003. One legislator stated: These are the things that we don't have any control over as legislators. Sure we can pass bills that say they have to sit on their head three times and spin six times a day, but the thing is that the control, when the money leaves the Senate, the House, the legislative body, we have no more control.

Although most would consider this a win for higher education, the legislature controls the money budgeted to higher education at large. Several participants described funding as "status quo." However, participants were referring to higher education funding in comparison to the state budget at large. The state tax structure and percentage of personal income collected is often a greater indicator of future appropriations to higher education.

CONCLUSIONS AND IMPLICATION

Although qualitative research is not generalizable, some findings in this study may be relevant to states with a similar structure. States typically contain one of three higher education governance structures: a consolidated governing board, a decentralized system of coordinating boards, and an advisory or planning agency. Oklahoma has a highly regulated consolidated governing board, the Oklahoma State Regents for Higher Education (Nicholson-Crotty & Meier, 2003). In addition, Knott and Payne (2002) discussed that highly regulated higher education governance systems may be more susceptible to political influence. The findings in this study indicate that the political implications of a highly-regulated system may be beyond persuasion and suggestions.

States that appropriate in lump sum to a highly regulated governing board may experience a disconnect between legislative bodies and the higher education systems. Higher education systems that are not highly regulated typically have a state legislature that determines funding for each public institution. The result is that those legislators likely better understand the higher education needs of the institutions in their state. Although arguments can be made that autonomy is a good thing for higher education, it may hinder state appropriations. Oklahoma legislators have no incentive to be involved in or understand internal higher education issues. In less regulated states, legislatures determine the budget of each institution and have a better understanding of the issues and needs. Several legislators in this study referenced having no control over the system and many demonstrated little intimate knowledge of their needs.

Taken together, many legislator participants did not view higher education as a partner. Their perception of higher education was a system of "wasteful spending." Most legislative attempts to ascertain the intricacies of university spending habits were in pursuit to substantiate preconceived beliefs of wasteful spending. For many, their understanding of university spending habits was limited to surface-level observations like landscaping, nice cars in the parking lot, and football coach salaries. It is likely that states with the same higher education governance structure have legislators that view higher education in the same way. This may have real impact on the future. As new policy issues arise that can compete with higher education funding, there are likely fewer legislators in those states willing to champion higher education. More research is necessary to explore the issue. Table 1, located in the appendices, provides a view of higher education governance structure by state.

The concept of academic capitalism (Slaughter & Leslie, 1997; Slaughter & Rhoades, 2004) contends that higher education is becoming increasingly integrated into the new market economy. The concept claims that the market-related actions of universities have had a

profound impact on university spending, campus infrastructure and revenue streams. Research related to the concept suggests that the investment in academic patents (Mowery & Ziedonis, 2000), research parks (Tuchman, 2004), and auxiliary services (Archibald & Feldman, 2006) has increased steadily. Several scholars stated that universities have developed into entrepreneurial business centers (Baez & Slaughter, 2001; Etzkowitz & Kemelgo, 1998).

The findings in this study indicated that most participants believe that universities should make a larger effort to secure alternative funding sources. Two participants indicated that there are members of the Oklahoma legislature who believe that higher education should be completely privatized. Although most participants thought that complete privatization was extreme, many expected practices that subscribe to the concept of academic capitalism. For example, one legislator stated, "I don't look at what's good for [public university]. I look at how's [public university] good for the state of Oklahoma. The tenets of academic capitalism acknowledge the emerging relationships of institutions with external entities. One participant believed that any dollar appropriated to higher education should be maximized and multiplied through the institutions' creative business ventures. Another legislator stated, "An appropriated dollar it brings a cost of less than a dollar because of the process that buck has to go to get to the university. So if that dollar, that's worth less than a dollar, allows universities to bring in other dollars, than it's a worthy investment." Collectively, legislators' perceptions of higher education's level of financial need in Oklahoma were impacted by the potential to garner additional revenues beyond state appropriations and tuition increases. What are we going to get on a return on investment?" The findings in this study seem to support several of the general tenets of academic capitalism and further substantiate the development of the concept.

State legislators' perception of higher education's financial need appeared to be influenced by the collective effect of multiple factors including state revenue collections, the state budget process, federal initiatives, university operations, competing discretionary interests and lobbying. Although the OSRHE publishes financial reports online, few legislators sought the information unless the data aided in developing related policy or interim studies. The observed behavior of members suggests that the relationship between universities and the legislature remains fairly contentious. Although universities have experienced a decline in the percentage of their operating budgets financed by the state, state legislators expressed frustration at a general lack of control. Although the perception of the current level of need varied among legislator participants in this study, the findings propose that opportunities to impact perceptions positively may exist. While strategies to improve perceptions may be lengthy, most center on universities and the OSRHE approaching the legislature as a partner, rather than a hindrance.

The findings in this study indicate that most legislators did little to seek understanding of higher education's current level of financial need in Oklahoma. The interaction between universities, the OSRHE and the legislature was limited to those with power and influence. University officials occasionally visited committees to lobby for additional dollars. However, a large percentage of dollars appropriated to higher education came from the larger omnibus budget bill. High-ranking members of the higher education community met informally with decision-makers to influence appropriations decisions, but output by percentage of the budget remained constant. A small group of legislators and governor's designees crafted the omnibus budget and decided what percentage went to higher education.

The OSRHE received an appropriation in lump sum, as dictated by Article 13, Section A of the Oklahoma Constitution, and used a budget formula (Figure 4) to allocate to each institution. In 2003, tuition-setting authority was removed from the legislature and given to the OSRHE. The findings demonstrate that because tuition-setting rests with the OSRHE and most legislators are not involved in the budget process, few members sought a thorough understanding of university operations or the OSRHE distribution process to each institution.

Although most members indicated that they are normally aware of tuition increases,

several explained that these are announced in the summer months after a legislative session with little discussion among members. While some think that tuition authority should be returned to the legislature, no member indicated a real desire to reclaim this responsibility. Although many expressed a desire to keep higher education affordable, appropriations have not kept pace with university operation costs. Several members indicated that the budget process should be changed, but action remained status quo. The findings propose that although tendencies have grown considerably more conservative over the past decade, the outlook for future budget process remained uncertain. The legislator participants' perceptions of higher education need at large seemed to be tied to economic outlook and comparisons with competing interests.

Taken together and against the backdrop of a changing political landscape, Oklahoma seems to be experiencing a gradual shift that is not altogether different from what is happening in other states. Although Oklahoma may have unique interests that compete with higher education for discretionary funds, the funding pattern is similar to that of other states. It appears likely that Oklahoma will continue to fund higher education at a similar percentage of the state budget, but that the dollar amount will fail to keep pace with university operating budgets. My hope is that the state legislature will work with the OSRHE and university officials to pursue private partnerships that can leverage state appropriations and achieve a greater return on investment.

Academic Capitalism

The concept of academic capitalism (Slaughter & Leslie, 1997; Slaughter & Rhoades, 2004) contends that higher education is becoming increasingly integrated into the new market economy. The concept claims that the market-related actions of universities have had a profound impact on university spending, campus infrastructure and revenue streams. Research related to the concept suggests that the investment in academic patents (Mowery & Ziedonis, 2000), research parks (Tuchman, 2004), and auxiliary services (Archibald & Feldman, 2006) has increased steadily. Several scholars stated that universities have developed into entrepreneurial business centers (Baez & Slaughter, 2001; Etzkowitz & Kemelgo, 1998).

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Collectively, legislators' perceptions of higher education's level of financial need in Oklahoma were impacted by the potential to garner additional revenues beyond state appropriations and tuition increases. What are we going to get on a return on investment?" The findings in this study seem to support several of the general tenets of academic capitalism and further substantiate the development of the concept.

Relationship of the Findings to Practice

The previous sections discussed the findings in this study in relation to previous research and theory. Although the findings generally support previous research and theory, the

process and perceptions of higher education vary slightly. This section discusses the relationship of the findings to practice.

As discussed at several points in this study the proportion of university operating budgets funded by the state has decreased significantly since 1980. Academic capitalism indicates that universities have leveraged the decline with increasing tuition fees and external funding opportunities. The pursuit or expectation of additional funding opportunities may impact how legislators view higher education's level of financial need in Oklahoma. One legislator stated:

A dollar for highered, what does it mean? It doesn't just mean that it's a dollar. It means that there's federal funds attached to that. It means there's private research dollars attached to that. And does it give the university the capacity to raise funds privately as well? So they [higher education institutions] need to be able to prove to me what does the dollar mean.

Higher education controls the ability to increase tuition and fees. Although most members indicated a need to protect low-income students, participants expected a return on investment. They recognized the interaction between an educated workforce, higher education, and economic development. Participants believed that investment in higher education and students should benefit the state in return. Literature devoted to academic capitalism indicates that state spending efforts for higher education are more calculated than in decades past (Robst, 2001)**.**

Recommendations for State Legislators and University Administration

In Oklahoma, nearly every legislator, regardless of political party, understands the importance of an educated citizenry. However, most legislators spend little time researching the intricacies of each individual institution's budget. Legislators have too many issues and entities to examine to know everything on which university officials place value. Unless higher education information is readily available and delivered in a format that demands attention, most of the cost-saving or cost-seeking strategies go largely unnoticed. "Perception is reality," and legislators notice "million dollar pear trees" or "the nice cars in the student parking lot." If legislators search university operating budgets unsolicited, it is likely that they are searching for remnants of wasteful spending to contribute to their argument. This stems from higher education being just one budget item amidst a political landscape that is seeking to tighten and reduce government spending. From this perspective, six recommendations for university and legislative officials emerged.

The first recommendation is for university administrators and state legislators to utilize the time out of session to seek understanding from one another. There seems to be an undertone of distrust and blame. Walking through the halls of a university, a common theme is to b lame the legislature for funding declines. In order to balance the money, however, the legislature must determine needs versus wants. The findings in the study suggest that universities do not do enough to demonstrate how they are using the money they receive. One legislator participant indicated that he would spend time out of session in summer 2013 to research university fees in comparison to tuition. As mentioned in the previous paragraph, anytime a legislator examines university spending unsolicited, it is not normally a positive thing for universities.

Universities need to demonstrate to legislators why investing in higher education is a good use of taxpayer money. They must approach legislators in a way that really grabs their attention. Attempting to address funding concerns in the spring, amidst an active legislative session, does little to separate higher education from other discretionary spending items. University officials should approach legislators while their legislators are conducting interim studies. The summer and early fall provide legislators with an opportunity to research and consider the bills they will author in session. Focusing on late summer and early fall as a

window to present data may provide a greater opportunity to influence policy-makers and policy. This recommendation deals specifically with timing, but several of the subsequent recommendations focus on means.

The second recommendation is for university administrators to explore opportunities to present data that separates institutional needs and wants. Several participants indicated that the legislature does not often receive data specifically related to higher education spending. Two legislators believed that the public colleges in their district were hiding information from them. University officials should focus on presenting data that demonstrates that universities' operations are maximizing and conserving state-appropriated dollars. The approach should not only demonstrate why universities are a good investment, but how the money is being leveraged in a meaningful way. Members' perceptions of state spending in higher education are often influenced by past experiences. However, most members do little to seek an understanding of higher education's level of need. Their understanding of need is often disrupted by surface-level exposure like football coach salaries, landscaping costs, and new and high cost student-service buildings. Public institutions should explore opportunities to share the story in a process that is data-driven and comprehensive. If money is spent on new buildings, what did the institutions receive in return that suggest it was money well spent? One member indicated that something as simple as a quick, bulleted list would be beneficial.

The third recommendation is for state legislators to seek understanding of higher education's level of financial need. As the subsequent sections indicate, many legislators who are not members of an appropriation or higher education committee did little to determine the funding level and need of higher education institutes. The appropriation to higher education in Oklahoma represents 15.8% of the state budget (Oklahoma State System for Higher Education, 2012) but several participants had a limited understanding of the budget breakdown. One method to achieve this is for administrators to take advantage breaks in the legislative session to share their story.

The fourth recommendation is for university officials to present state legislators with data pertaining to external revenue streams and the minimizing of tuition increases. Several legislative members made reference to public institutions being wasteful in spending. However, many had no clear understanding of the external funding sources that universities seek. Several participants shared that they believed that opportunities exist for institutions to grow alternative funding sources but were unaware of current efforts to do this. One member believed that universities should invite legislators to view or assist in strategic planning efforts that involved spending and funding. Providing opportunities for legislators to see the planning efforts in action may help to positively influence perceptions regarding state spending for higher education.

The fifth recommendation is that public institutions should seek opportunities to collaborate with other bodies and voice collective concerns. One member indicated that higher education institutions must "join forces and instead of competing and pitting, band together and become

kind of a cohesive unit." One participant stated that Higher Education Day at the capitol was not nearly enough to educate legislators, while another said that the OSRHE should provide the legislature with a better snapshot of higher education's needs in general. Two participants suggested a "college fair" for legislators where institutions distributed a brief and concise figure of costs and expenses.

The sixth recommendation is for administrators and public servants beyond the Oklahoma system to examine, and, if warranted, apply the findings from this study. Higher education officials enjoy the concept of autonomy, being able to make budget decisions separate from bureaucratic processes and legislative control. There are certainly advantages to a centralized and self-regulated system. In fact, most state systems tend to be highly self-regulated. Nicholson-Crotty and Meier (2002) suggest one political concern of a centralized and

highly regulated system is that all decision-makers are in one centralized location and the opportunity for political influence is greater. In this study, however, an additional concern was identified. Self-regulated systems are still dependent on state funding. However, because of the OSRHE's autonomy, most legislators were not aware of what higher education entities were doing financially. In addition, no real champion of higher education emerged. There seems to be adisconnect in Oklahoma between higher education and the legislature. That disconnect seems to be exacerbated by the limited need for interaction. This has implications for the sustainability of long-term funding, not only for Oklahoma but also for states with a similar system.

Although the above recommendations may help to improve relationships and perceptions, it is possible that such efforts may do little to impact appropriations to higher education.

LIMITATIONS

There are several delimitations that exist in this study: (1) the study is limited to members of the Oklahoma State Legislature and no attempt to interview legislators in other states was made, (2) legislative assistants had varying knowledge of the budget process and, (3) the study was qualitative and the results may not truly represent the beliefs of all the state legislators in Oklahoma. In addition to those listed, other delimitations may exist.

First, with qualitative research the accuracy of the study findings are limited to the information participants share. The legislative participants in this study are public figures and likely considered political implications during the interviews. Second, the interviews took place immediately following the First Session of the 54th Oklahoma Legislature. The 54th Oklahoma Legislature was at the midterm and timing may have influenced what participants were willing to share. Third, I attempted to approach the study without bias, but many legislators seem to assume that I was in favor of increased spending for higher education. This undertone may have impacted the type of information participants were willing to share, especially those participants who identified themselves as fiscally conservative. Fourth, although I am well versed in the academic literature pertaining to higher education spending, my knowledge of the Oklahoma process was limited to relevant literature, participant interviews, observations, and documents I observed. I was not present in closed committee meetings where many of the key discussions and debates took place. I cannot conceptualize the full effect of the atmosphere, passion, or emotion that ensued when budget numbers were being finalized.

FUTURE RESEARCH

Throughout the duration of this study, multiple opportunities for future research emerged. The research in this study employed qualitative methods and focused specifically on seven legislators and seven staffers and their perceptions of the process. The limited scope of this study supports the need for future research regarding legislative perspectives and the developing landscape of spending in Oklahoma. Based on previous research in the field and legislator responses in this study, there is an opportunity for both qualitative and quantitative work investigating party factions, lobbying efforts, and competing interests. This study identified three specific areas that warrant future research: the "über conservative" faction, the impact of in-house lobbyists, and competing interests.

Specifically, building on the findings presented in this paper a survey instrument would present an opportunity to further develop the study. Provided in the appendices is a Higher Education Governance Structure by State (Knott & Payne, 2002). A survey instrument may be able to provide some insight to whether perceptions of higher education spending among legislators vary based on higher education governance structure.

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APPENDICES

Table 1	
Knott and Payne (2002) Higher Education Governance Structure by State	
State	**Type**
Alabama	Highly Regulated Governing or Coordinating Board
Alaska	Minimally Regulated Planning or Advisory Agency
Arizona	Highly Regulated Governing or Coordinating Board
Arkansas	Minimally Regulated State Planning or Advisory Agency
California	Minimally Regulated State Planning or Advisory Agency
Colorado	Moderately Regulated Coordinating Board
Connecticut	Highly Regulated Governing or Coordinating Board
Delaware	Minimally Regulated State Planning or Advisory Agency
Florida	Highly Regulated Governing or Coordinating Board
Georgia	Highly Regulated Governing or Coordinating Board
Hawaii	Minimally Regulated State Planning or Advisory Agency
Idaho	Highly Regulated Governing or Coordinating Board
Illinois	Minimally Regulated State Planning or Advisory Agency
Indiana	Moderately Regulated Coordinating Board
Iowa	Highly Regulated Governing or Coordinating Board
Kansas	Highly Regulated Governing or Coordinating Board
Kentucky	Moderately Regulated Coordinating Board
Louisiana	Moderately Regulated Coordinating Board
Maine	Highly Regulated Governing or Coordinating Board
Maryland	Highly Regulated Governing or Coordinating Board
Massachusetts	Highly Regulated Governing or Coordinating Board
Michigan	Minimally Regulated State Planning or Advisory Agency
Minnesota	Minimally Regulated State Planning or Advisory Agency
Mississippi	Highly Regulated Governing or Coordinating Board
Missouri	Moderately Regulated Coordinating Board
Montana	Highly Regulated Governing or Coordinating Board
Nebraska	Minimally Regulated State Planning or Advisory Agency
Nevada	Minimally Regulated State Planning or Advisory Agency
New Hampshire	Highly Regulated Governing or Coordinating Board
New Jersey	Highly Regulated Governing or Coordinating Board
New Mexico	Minimally Regulated State Planning or Advisory Agency
New York	Moderately Regulated Coordinating Board
North Carolina	Highly Regulated Governing or Coordinating Board
North Dakota	Highly Regulated Governing or Coordinating Board
Ohio	Highly Regulated Governing or Coordinating Board
Oklahoma	**Highly Regulated Governing or Coordinating Board**
Oregon	Highly Regulated Governing or Coordinating Board
Pennsylvania	Moderately Regulated Coordinating Board
Rhode Island	Highly Regulated Governing or Coordinating Board
South Carolina	Minimally Regulated State Planning or Advisory Agency
South Dakota	Minimally Regulated State Planning or Advisory Agency
Tennessee	Moderately Regulated Coordinating Board

Texas	Moderately Regulated Coordinating Board
Utah	Highly Regulated Governing or Coordinating Board
Vermont	Minimally Regulated State Planning or Advisory Agency
Virginia	Moderately Regulated Coordinating Board
Washington	Moderately Regulated Coordinating Board
West Virginia	Minimally Regulated State Planning or Advisory Agency
Wisconsin	Highly Regulated Governing or Coordinating Board
Wyoming	Highly Regulated Governing or Coordinating Board

WHICH HELPS ACCOUNTING STUDENTS LEARN MORE: TRADITIONAL HOMEWORK, ONLINE HOMEWORK, OR CLICKERS?

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ABSTRACT

This paper reports that in a classroom setting in which students were assigned traditional paper based homework, online homework, and too in-class quizzes using clickers, students believed that online homework would be the most useful component of learning. However, of the three tasks, only the in-class clicker quizzes actually correlated with test performance. The results call into questions the usefulness of assigning homework as a means of increasing student learning.

Using technology in university classrooms is becoming increasingly popular. Two technologies being increasingly used are online homework managers and clickers. The online homework managers enable students to complete homework on the internet. Clickers are devices that allow students to respond to in-class questions and communicate those answers to the instructor. This paper examines student opinions about which technology is most helpful and which technology is best in promoting learning.

Publishers advertise their online homework managers as a key component of their textbook inventory and assert that they improve learning. The systems may provide efficiency benefits to both students and instructors. Students complete homework in a convenient format, receive feedback on their answers and performance, and often may receive hints and access to textbook sections. Instructors rely upon the system to grade homework and track grades.

Clickers, or classroom response devices, increase student classroom engagement and provide instant feedback to students. The feedback can be useful both as teaching a concept directly and through showing students in which areas they need to improve. Clicker feedback can also alert instructors to content areas that are not sufficiently understood by students.

Faculty should consider three issues when choosing to adopt a homework management system or clicker: 1) does the technology add to the instructors' efficiency and effectiveness, 2) do the students like the technology, and 3) does the technology improve student learning. The technologies should have some superiority to traditional homework to justify the added expense of course adoption. This study tests two of those issues; whether students perceive a homework manager as promoting learning, and whether the technology matches those expectations and actually improves learning as measured by test performance. The data show that students perceive the online homework manager to be more helpful than other tools in preparing for tests, but that the use of the online homework manager does not actually improve test performance. However, higher clicker scores do help explain student test performance; using the clickers appears to proxy for both class attendance as well as class preparation.

HOMEWORK MANAGERS AND CLICKERS

Traditional homework may or may not be useful in fostering learning (Lefcort & Eiger, 2003; Paschal, Weinstein, & Walberg, 1984; Peters, Kethley, & Bullington, 2002). Homework's

effect depends upon domain (Eren & Henderson, 2011) and students' ability (Eren & Henderson, 2008). Research is also inconclusive about online homework managers. Students sometimes believe that an online homework manager helps their performance (Cutshall & Bland, 2011; Smolira, 2008), and sometimes do not believe that a homework manager has an effect on performance (McCabe & Meuter, 2011).

Online homework managers, usually accompanied by electronic versions of the textbooks, are popular add-ons to university textbooks. For example, Wiley, Prentice Hall, McGraw Hill, and Cengage, among other publishers, market online homework managers. The publishers assert that their online materials improve student performance. Wiley commissioned a study that shows that students using the WileyPlus homework management system improved scores during a course more than students not doing traditional homework (BroadviewAnalytics, 2011). Prentice Hall states that students grades improve when they use its MyAccountingLab (Speckler, 2010). McGraw hill says that its Connect system is based on research on student study habits (McGrawHill, 2011). However, most independent research shows little or no improvement in student performance when using an online homework manager when compared to using traditional homework (Lee, Courtney, & Balassi, 2010; Palocsay & Stevens, 2008).

Students believe that clickers improve performance, and actual performance is often, although not always, higher in class sections that use clickers (FitzPatrick, Finn, & Campisi, 2011). Clickers also improve attendance and increase student engagement (Caldwell, 2007).

As students work through assessment materials, they should develop the perception that increased work will improve their learning and test performance. In specific, doing homework should provide repetition that increases student confidence in their test-taking ability. As they do homework, whether online or traditional, they may look up answers in the textbook and practice the concepts taught in the course, improving test scores. Taking clicker quizzes could improve test taking by increasing attention and engagement as well as by providing feedback and content.

> *H1:*   *Students believe that assessment tools improve test performance.*
>   *a.*   *Students believe that traditional homework improves test performance b.*
>   *Students believe that online homework improves test performance*
>   *c.*   *Students believe that clicker quizzes improve test performance*
>
> *H2:*   *Assessment tools improve test performance*
>   *a.*   *Traditional homework improves test performance b.*
>   *Online homework improves test performance*
>   *c.*   *Clicker quizzes improve test performance*

Students who believe that an assessment method improves test performance probably work harder in that assessment method. For example, students that believe that homework is helpful in obtaining a better test score will probably do more homework.

> *H3:*   *Student perceptions of the helpfulness of assessment tools will be correlated with the extent to which they use those assessment tools for*
>   *a.*   *Traditional homework b.*
>   *Online homework*
>   *c.*   *Clicker quizzes*

METHOD

Scores and opinions were gathered from students enrolled in an introductory financial accounting class. The class was offered at a public university. In complying with intuitional review requirements, students had the option to be included in the study; students that either indicated that they did not want to participate or who did not answer were excluded from the study. Table 1 gives the demographic information of students who opted to participate or to not participate in the study. Students that did not participate in general performed worse during the class, which may have some effect on the results. GPA and standardized test information was not gathered on non-participating students.

Table 1 DEMOGRAPHICS		
	<u>Participants</u>	<u>Non-Participants</u>
N	99	49
Average class status (Fresh = 1…)	2.3	2.1
Percent female	50%	31%
Accounting majors	12%	8%
Other business majors	41%	45%
Average midterm grade, % of average	103%	94%
Average final grade, % of average	103%	93%
Average ACT Verbal	23	
Average ACT Math	25	
Average SAT Verbal	541	
Average SAT Math	565	
GPA	3.09	

In addition to gathering student scores, the students were asked to report how useful the textbook, homework, and clicker quizzes were in helping them learn. Student learning/performance was measured by their performance on two types of test. Students completed three multiple choice mid-term examinations during the semester. For each student, the scores across the three mid-terms were averaged and divided into the average for the whole class. A measure of 1 indicates that a student's average for the three midterms equaled the class average. The final test was consisted of a problem in which students completed journal entries and financial statements. Its scores were normalized the same way as the midterm scores.

During the semester, the students completed twelve homework assignments using the WileyPlus homework manager, ten traditional homework problems from the textbook, and eighteen scored clicker quizzes. The scores of each of these assessments were normalized to a percentage of class average. For the WileyPlus assignments, students had five attempts to complete each problem, and were not allowed to turn in homework late. The traditional homework was scored based on completion. The clicker quizzes consisted of questions posted on an overhead display. Students entered answers on the clicker. After the question was entered by all of the students, the answers were displayed for student feedback.

RESULTS

Students indicated how much they thought different course components helped learning course subject matter using a four point scale. Answering 1 indicated that the component was very helpful, 2 that the component was helpful, 3 that the component was not helpful, and 4 that the component was very unhelpful. As 2.5 is the mid-point between negative and positive opinions of the components, mean responses significantly below 2.5 indicate that students believe the assessment to be helpful to learning. Students believe that all three assessment exercises, online homework, clicker quizzes, and traditional homework, are helpful, supporting Hypothesis 1. In ranking the three assessment components, students marginally rate the online homework as be more helpful than the clicker quizzes, and rate the clicker quizzes as being significantly more helpful than the manual homework assignments.

Hypothesis 2 states that each of the course components helps with actual learning as measured by test performance. The three assessment methods were tested against two types of test: multiple choice and problem. The hypothesis was tested by using multiple regression with gender, class status (freshman, sophomore, junior, or senior), major (accounting, business, non-business), sex, GPA, and verbal and math standardized test scores (measured as a percentage of the average of the participating students) were entered into the regression formula as controls. The significant variables are shown in Table 3. Only the math standardized test result and clicker quiz results were significant. Therefore, Hypothesis 2 was supported only for the clicker tests, not for traditional homework or online homework.

Table 2
PERCEPTIONS OF HELPFULNESS

	M	SD	Difference from other assessments T	p	Difference from midpoint T	p
Online homework	1.54	0.65			-14.69	<.01
Clicker quizzes	1.72	0.76	1.94	<.10	-10.02	<.01
Traditional homework	2.09	0.77	4.05	<.01	-5.18	<.01

T-score is to the next smallest value

Smaller values indicate greater perceived helpfulness

1 = Very Helpful

2 = Helpful

3 = Not helpful

4 = Very unhelpful

In addition to completing a multiple regression, hierarchical regression was used to test the contribution of each independent variable. Each variable was entered into the equation in the expected causal order. The math standardized test score was entered first followed by the clicker test results. The contribution to the overall R^2 is shown for each model in Table 3, as well as the standardized Betas that show the relative contribution. With hierarchical regression, a path model can be constructed by measuring the change in coefficients as each variable is entered (Cohen, Cohen, West, & Aiken, 2003). The coefficients of the path model are the contribution

of the standardized Beta that passes through that path from the originating variable. The associated path models are shown in Figure 1.

Table 3
PREDICTION OF FINAL AND MIDTERM SCORES

Independent Variable	Constant	Math Test	Clicker Quiz	Adjusted R^2
Final (Problem)	0.203	0.705	0.115	0.361
Standardized Beta		0.555	0.175	
p	<.10	<.01	<.05	
R^2 increase		0.339	0.022	

GPA, Sex, Class, Major, Verbal standardized test score, Online homework and Traditional homework not significant

Midterm (Multiple Choice)	0.335	0.483	0.190	0.415
Standardized Beta		0.478	0.365	
p	<.01	<.01	<.01	
R^2 increase		0.292	0.123	

GPA, Sex, Class, Major, Verbal standardized test score, Online homework and Traditional homework not significant

FIGURE 1
TEST PERFORMANCE MODELS WITH STANDARDIZED COEFFICIENTS
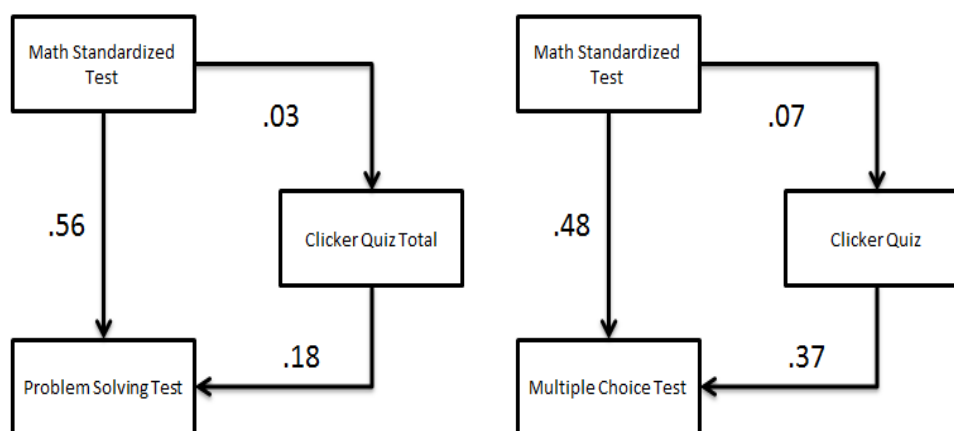
Hypothesis 3 is tested by measuring the correlations between students' perceptions of how a course component would help them to learn and the extent that they earned points using those course components. The hypothesis was supported for the online homework and clicker

quizzes; both had significant positive correlations (.33 for the online homework and .32 for the clicker quizzes), but not for the traditional homework.

Two additional exploratory tests were conducted. First, students' perceptions of the helpfulness of the components were regressed against test performance. Students' perceptions did not affect test performance. Second, both regression formulas were retried replacing the clicker quiz scores with the number of clicker quizzes taken, indicating attendance, and the percentage score on those clicker quizzes. If the clicker attendance is significant and explains as much variance as the clicker score, than the significance of the clicker quiz can be explained by attendance at class.   However, significant clicker score would be indicative of class preparation as opposed to attendance. Both clicker scores, attendance and score, were significant in predicting the multiple choice test scores, but only the score predicted problem performance.

DISCUSSION

This paper shows the results of simultaneously testing the effect of three types of classroom assessment tools: traditional homework, online homework, and clicker quizzes. Neither of the types of homework improves student test scores, but clicker quizzes did have a positive effect on test scores. The positive effect can be explained both by class attendance and preparation. However, the tests do not reveal whether the use of clickers increased class attendance and preparation, or whether success on the clicker quizzes simply measured existing attendance and preparation.   Another limitation of the research is that it may not be generalizable to other disciplines, to other brands of online homework managers, or to other structures of homework.

However, the results do indicate that assigning homework may not be very helpful in assisting student learning, whether the homework is online or traditional. Online homework did not seem to offer any advantage or disadvantage over traditional homework. Students themselves are not good judges as what tools are helpful, as they thought the online homework assignments provided the greatest assistance. Clicker quizzes, however, are associated with better test performance regardless of the structure of the tests.   Instructors may consider carefully the use of homework in their courses, and which tools are more useful in adding value.

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FEASIBILITY ANALYSIS OF E-TEXTBOOK AND E-READER ADOPTION AT A BUSINESS SCHOOL: PERSPECTIVE FROM INFORMATION SYSTEMS STUDENTS

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ABSTRACT

E-textbooks have gained growing popularity in higher education, as a means to rein in the skyrocketing costs of textbooks and enhance learning effectiveness. Some business schools have recently initiated e-textbook and e-reader adoption projects spanning the entire curriculum of an academic program or school. The impacts of such large-scale e-textbook and e-reader adoption is not well understood in the literature. This exploratory study aims to help decision makers understand the benefits and challenges of a wholesale adoption of e-textbooks and e-readers. Following the methodology used by professional systems analysts, 84 students enrolled in a Systems Analysis and Design class performed feasibility analysis of an e-textbook and e-reader adoption project for a business school. The top intangible benefits identified by student analysts include portability, enhanced learning, convenience in accessing, convenience in purchasing, and increased student engagement with technology. The student analysts also discovered a variety of risk factors affecting the operational feasibility, technical feasibility, political feasibility, and legal feasibility of an e-textbook and e-reader adoption project. Furthermore, threat of technical failure on device availability, lost or stolen device, and technology obsoletion present additional risks to a large-scale e-textbook and e-reader adoption. Implications for research and practice are discussed.

INTRODUCTION

Amid rising costs for higher education, the expense for textbooks has become a main source of financial burden for many college students. According to the Government Accountability Office, textbook prices increased by 82 percent from 2002 to 2012, while the overall consumer price inflation was 28 percent during the same period. The issue of textbook costs is a major concern for stakeholders of higher education including students, parents, faculty, school administrators, and elected officials. In late 2013, United States Senators Al Franken and Dick Durbin introduced the *Affordable College Textbook Act*, aiming to control textbook costs through the use of affordable options such as open access textbooks ("Sen. Franken's Bill to Rein in Rising Textbook Costs Backed by Big Ten Student Group", 2014). The proposed bill gained support from a number of student organizations such as the Association of Big Ten Students and the National Association of Graduate and Professional Students.

To cope with skyrocketing costs of textbooks, many students buy older editions, buy used books, rent books, and sometimes skip the text altogether. Instructors also applied various strategies such as recommending previous editions, negotiating volume discounts from publishers, using open access textbooks, or not using any textbook in their courses. Digital textbooks offer another increasingly popular alternative to traditional printed textbooks (Chesser, 2011; Baek & Monaghan, 2013). According to a survey conducted by e-textbook publisher bookboon.com in

2013, 65% of students in the United States have bought their first e-textbook, and half the students read e-textbooks on multiple devices (Tschiesche, 2013). The market share of e-textbooks is also growing at a rapid rate, with expectation to achieve 25% by 2015 (Reynolds, 2012).

Research has shown that e-textbooks receive the highest acceptance rate among business school students. For instance, in a study of students from 127 universities in the United Kingdom, Nicholas, Rowlands, and Jamali (2010) discovered that business and management students were the most likely group to use e-textbooks according to page views, titles of the most used e-textbooks, and time spent on reading the books. Recently, business schools have become the pioneers of large-scale e-textbook adoption initiatives, where e-textbooks, often from a single vendor or platform, are used throughout the entire curriculum of an academic program or school. These projects often involve the use of e-readers. For example, all students enrolled in the executive MBA program at Purdue University Calumet receive an iPad, with e-textbooks replacing printed textbooks for all courses (Zhao & Abuizam, 2013). In 2010, the Reginald F. Lewis School of Business at Virginia State University adopted an e-textbook program in collaboration with Flat World Knowledge, a digital textbook provider. All business students pay $19.95 per book to receive the textbooks of eight, later expanded to thirteen, core business courses in digital formats downloadable to PCs, laptops, iPads, and smartphones ("About Us", n.d.; Gorski, 2010).

While there has been an active body of research on use of e-textbooks in individual classes, large-scale e-textbook and e-reader initiatives, which undeniably has more profound impacts on course effectiveness and student learning, have received little attention in the literature. Therefore, in this paper, we report an exploratory study of students' assessment of a school-wide e-textbook and e-reader initiative. Specifically, students enrolled in a Systems Analysis and Design class performed feasibility analysis, a method used by professional systems analysts for conducting a well-rounded assessment of a proposed information technology project, on a potential e-textbook and e-reader project for a business school. The results of this exploratory study could help decision makers understand both the benefits and challenges of a wholesale adoption of e-textbooks.

LITERATURE REVIEW

Findings from past studies on electronic books suggest that use of e-books for non-educational purposes do not necessarily imply how students view e-textbooks. Students' overall preference for e-textbooks does not increase with prior experience with e-books (Woody, Daniel, & Baker, 2010) or tablet ownership (Jesse, 2014). Walton (2013) also revealed that while leisure reading and conducting research are the main factors for e-book use, textbook use and reading assigned readings outside of class are not among the reasons traditional undergraduate students use e-books. Therefore, this section provides a brief and focused review of prior research related to use of e-textbooks in the college setting. It is beyond the scope of this article to discuss the body of knowledge on e-books in general.

To date, most authors have compared e-textbooks to printed textbooks in terms of costs, learning outcome, learning experience, and student perceptions and attitudes. As cost advantage is

often cited by both students and faculty as the driving force for e-textbook adoption (Grajek 2013), some scholars have attempted to quantify the economic impacts of e-textbooks. Zhao and Abuizam (2013), for example, found that considerable savings could be achieved by replacing most of the printed books with e-textbooks in an executive MBA program. Ji, Michaels and Waterman (2014) also concluded that e-textbooks were more cost efficient than printed books for students of two undergraduate courses, even when the costs for printing e-textbook pages and time opportunity costs were taken into consideration. On the contrary, a two-year study conducted by Daytona State College determined that students save as little as $1 by purchasing e-textbooks instead of printed books (Anas, 2012).

The impact of e-textbooks on learning outcome is much less equivocal, at least insofar as students' grades are concerned. There is no appreciable difference in test scores or course grades between e-textbook users and those using traditional printed books. Shepperd, Grace and Koch (2008) examined the preference and performance of students who opted for an e-textbook in an introductory psychology course, and found no impact of e-textbooks on final course grades. In a two-year study conducted at Sawyer Business School, Suffolk University (Weisberg, 2011), each semester students enrolled in a management strategy class were randomly assigned to six groups using either a traditional paper textbook or one of the five types of e-readers or devices for accessing e-textbooks. There was no significant difference between the six groups in their performance in weekly quizzes. A number of subsequent studies have confirmed that using e-textbooks versus printed textbooks is not a differentiator of student grades (Murray & Pérez, 2011; Sloan, 2012; Daniel & Woody, 2013; Dwyer & Davidson, 2013; Rockinson-Szapkiw, Courduff, Carter & Bennett, 2013).

Although e-textbook use does not appear to impact learning outcome, it influences learning experience and learning process. While eye fatigue (Baek & Monaghan, 2013; Rockinson-Szapkiw et al., 2013) and increased mental workload (Rockinson-Szapkiw et al., 2013; Daniel & Woody, 2013) are cited in part of the literature as the main drawbacks of reading digital textbooks, other studies have found e-readers to decrease the amount of time and effort to accomplish course tasks and improve efficiency of learning (Weisberg, 2011; Shepperd et al., 2008). Students also appear to adapt different learning strategies when using e-textbooks. Nicholas et al.'s study (2010) revealed that among business and management students who used e-textbooks, only 5 percent had read the whole book, and 22.6% read the entire chapters. Most only dipped into the book for obtaining snippets of information or finding quick facts. Students were also found to be more likely to multitask when reading e-textbooks than printed books in Daniel and Woody (2013). Moreover, many students use e-textbooks as secondary textbooks, complementing instead of replacing printed books (Weisberg, 2011; Zhao & Abuizam, 2013). It is also a common practice for students to print from e-textbooks and read the printed pages instead (Ji et al., 2014).

Student attitude toward and perceptions of e-textbooks has been another topic of interest in the literature. When it comes to the simple preference between e-textbooks and printed textbooks, in numerous studies students indicate that they do not prefer e-textbooks, even when they enjoy reading e-books for personal and leisure purposes (Shepperd et al., 2008; Anas, 2012; Elias, Phillips & Luechtefeld, 2012; Dwyer & Davidson, 2013; Zhao & Abuizam, 2013; Walton, 2013; Jesse, 2014). Woody, Daniel and Baker (2010), for instance, found that students enrolled in

a general psychology course prefer printed textbooks over e-textbooks, regardless of gender, computer use, or comfort with computers. In a survey of 61 faculty members and 216 students at a school of pharmacy, 84% of faculty and 78.7% students preferred printed books (Elias et al., 2012).

The term "e-textbook" describes digital textbooks ranging from electronic files that include nothing more than the exact replica of pages from a printed book, to books embedded in a complex learning system with many interactive features (Chesser, 2011). Analyses at the feature level showed that students appreciate the special features of e-textbooks in general, with note taking, highlighting, and search capabilities as the most desirable (Weisberg, 2011; Sloan, 2012). However, there was also evidence that students did not find interactive features such as embedded quizzes, electronic flash cards, online note sharing, or built-in tutorials to be useful (Simon & Will, 2013).

Recently, a number of studies also investigated the factors predicting student attitude and intention to purchase or use e-textbooks, applying causal behavioral models such as Theory of Planned Behavior (Hsiao & Tang, 2014); Technology Acceptance Model (Nelson et al., 2007; Lai & Ulhas, 2012; Hsiao & Tang, 2014), Innovation Diffusion Theory (Lai & Ulhas, 2012), and Social Cognitive Theory (Stone & Baker-Eveleth, 2013). In keeping with the vast body of research on technology adoption and acceptance, perceptions of ease of use and usefulness of e-texts, social norms, and subjects' motivation, personal innovativeness in IT, self-efficacy, and previous computer experience are confirmed to be direct or indirect antecedents of e-textbook adoption.

To date, most researchers examined e-textbook use as a voluntary choice in the context of a single course pilot, with no long-term commitment for students to use e-textbooks. When a decision is made to adopt e-textbooks at the program or school level, it typically requires the students to use e-textbooks provided by a single publisher, or delivered on a single platform or e-reader, for a majority of courses throughout the curriculum. Students would have to accept a forced adoption, with no freedom to choose printed books on a course by course basis, and no opportunity to opt out. To the knowledge of this author, no studies have been conducted on the potential impacts of such large-scale e-textbook and e-reader adoption projects. The objective of this study, therefore, is to investigate how a school-wide e-textbook initiative will impact the stakeholders, from the perspective of students.

METHOD

Feasibility Analysis

When a school or an academic program considers adopting e-textbooks for an entire curriculum, it effectively embarks on an information systems project, wherein an information and communication technology (e-textbooks) is used to improve the operations (reduce costs and enhance student learning) of the organization. Feasibility analysis is a commonly used method to systematically assess the potential benefits and risks of a proposed information system, performed during the planning phase of the systems develop life cycle (SDLC) of the project. As pointed out by Palvia and Palvia (1988), "A feasibility study/analysis aids in evaluating the suitability of a single or multiple proposed system solution(s) to an identified business problem according to a set of criteria", and "the feasibility study itself is generally prepared by the systems analysts/technical staff with possible assistance from the user group."

When performing a feasibility analysis, systems analysts assess the proposed system using a set of feasibility criteria. The specific criteria may vary depending on the standard practice of the organization and the nature of the project. Brief definitions of the most commonly used feasibility criteria include:

1. **Economic feasibility** requires a cost-benefit analysis of the proposed information system, often involves net present value (NPV) calculations of the financial benefits and costs to reach an estimate of return on investment (ROI) of the project.
2. **Intangible benefits** are benefits that cannot be easily measured monetarily, usually assessed in conjunction with economic feasibility.
3. **Operational feasibility** considers the fit between the proposed system and the current operations of the organization, including business processes and the daily routines of the intended users.
4. **Technical feasibility** ensures that the organization has the technical resources and expertise required to construct, operate, and maintain the system.
5. **Political feasibility** evaluates the impact of the project on stakeholders, other than the intended users, within the organization and identify potential issues that may lead them to oppose to the introduction of the system.
6. **Legal feasibility** addresses potential legal ramifications of the proposed system.

Participants and Procedure

Participants were the students enrolled in a Systems Analysis and Design course during the fall semesters from 2012 to 2014 in a Midwestern university. At this university, the College of Business offers a B.S. in Computer Information Systems (CIS) degree, and a B.S. in Management with concentration in Management Information Systems (MIS) degree. The curriculum of the two IS degrees are highly similar, with CIS leaning toward system development and MIS focusing on IS management. The Systems Analysis and Design course is required for both CIS and MIS majors, usually during their third year in the program. The course is offered once every year during the fall semester. Prior to enrolling in this course, students have taken at least two introductory IS courses as direct and indirect prerequisites. An e-textbook integrated as part of the publisher's online learning product is required for one of the prerequisites, and a similar e-text by another publisher is provided as an option in the other prerequisite. Therefore, the majority of students in this course were expected to have prior experience using e-textbooks.

Data was collected through an in-class exercise, assigned immediately after a lecture on the topics related to project planning and selection including the feasibility analysis. To avoid any effect on the results, the instructor did not use e-textbooks or e-readers as an example during the lecture. The instruction for the exercise was piloted in fall 2011 and revised according to the responses. It described a case scenario of an e-textbook and e-reader initiative under consideration for a school of business. Once adopted, each incoming student would be required to purchase an e-reader during their first year, and e-textbooks will be required for all core business and major courses throughout the four year curriculum. To add realism and specificity to the case scenario

while balancing generalizability of the analysis, the school was described to be considering the Amazon Kindle platform, including the tablet device and software for other operating systems, as the top choice for the project, but still remains open to other alternatives. The estimated benefits and costs for each student, assuming Amazon.com will be selected as the vendor, were given in the instruction. Considering the mixed results of prior research on cost saving of e-textbooks, the values were set so a moderate 18% ROI will be the result assuming a 10% discount rate, and a small 7% ROI when a 15% discount rate is assumed. Students were requested to apply their knowledge and experience, both as future systems analysts and as students, to perform a feasibility analysis on the hypothetical project. Students were instructed to assess the economic feasibility including the intangible benefits first. Then they were required to list, with brief explanations, as many risk factors as they could identify under each of the feasibility criteria discussed in the previous section. In addition, they were required to list risk factors to the project that cannot be categorized under any of the feasibility criteria. While each student needed to submit their own answers, they were encouraged to team up with another student and role play for the exercise, with one acting as a systems analyst and the other as a user. The instruction also emphasized the importance for systems analysts to be objective and impartial: they should analyze the business problem and make assessments base on unbiased facts rather than their personal preferences.

RESULTS

Responses were collected from 84 student analysts enrolled in the three course sections from 2012 to 2014. No demographic or any other personal data was collected because the research question concerns the impacts of e-textbooks and e-readers in general, rather than perceptions and attitudes at the individual level. For economic feasibility, the majority of students correctly calculated the ROI using the information provided in the case description, and no further analysis was performed. The intangible benefits and risk factors identified by each respondent were re-categorized, if necessary, and tabulated. Table 1 and 2 summarize the intangible benefits and risk factors, respectively, and the number and percentage of student analysts who listed each item in their responses.

Table 1 Intangible Benefits		
Benefits	Number of respondents	Percentage (N = 84)
Portability	44	52%
Enhanced learning through advanced features	29	35%
Accessing multiple textbooks on one device	17	20%
Accessing the textbooks anytime anywhere	16	19%
Convenience in the purchasing process	16	19%
Increased student engagement with technology	10	12%
Increased student and faculty morale	9	11%
Environmental gains	8	10%
Enhancing the image and competitive advantage of the school	7	8%
Ease of use	6	7%
No need to worry about losing or damaging a textbook	5	6%
Downloading the latest editions and updates	4	5%
Freeing up space in bookstores, classrooms and lockers	4	5%

Intangible Benefits

Respondents identified a total of 13 intangible benefits – benefits that are difficult to assign a dollar value. Over half of the respondents recognized the value of portability mainly because of the elimination of the need to carry heavy books and backpacks. Some respondents expressed appreciation for the health benefits of using e-textbooks and e-readers. This sentiment is exemplified in one respondent's comment that:

"Students will lessen the chance of back injury by carrying less weight on their backpacks."

Respondents also expected the advanced features of e-textbooks and e-readers to enhance learning effectiveness of students. Features mentioned specifically include note taking, highlighting, search, enlarged fonts, digital homework and assignments, text-to-speech, and tool for communicating and collaborating with teachers and peers. As an example, one respondent commented on the benefit of the search feature:

"A great intangible benefit of using an e-book [is] the use of the search engine. If a student needs to look up a key word it is much quicker with an e-book. This saves a student the time and hassle of looking throughout an entire chapter for a certain vocab word."

The student analysts also valued the convenience of accessing the textbooks for multiple subjects, and therefore the flexibility to study any subject on the same device. Another benefit related to convenient access is the ability to read the textbook anytime, anywhere, on multiple devices. This benefit is summed up by one student's comment that:

"Another benefit would be the added flexibility allowing students to read the books 24/7, on a PC, a tablet, or a phone."

The next intangible benefit is related to the purchasing process of textbooks. Several frustrations with the current book buying process were mentioned in the responses, including worrying about bookstore running out of stock, waiting in long lines at the bookstore, searching for cheapest books, reselling the books, and dealing with third party web sites. As one student summarized:

"Students would not have to worry about finding/reselling the text books. This process will make the whole book buying process a lot less stressful on the students in general."

Respondents also suggested a few positive outcomes not directly related to the use of e-textbooks. Some suggested that *"helping students to become more technologically advanced with the use of tablets"* would be a positive result. Some believed using e-readers would bring students and faculty happiness and pride, therefore improving morale. The environmental benefit of e-textbooks and e-readers through reduced paper consumption was also noted, as well as the potential for the school to gain competitive advantage:

"E-books are getting popular and will be a staple in the future, as an education institute, they have to be competitive and be on the cutting edge of technology to stay relevant and increase enrollment as well."

A few respondents brought up the ease of use of tablets in general, the ability to download the latest editions and updates of the textbooks, and freeing up space in bookstores, classrooms and lockers as benefits. Some also anticipated elimination of the need to worry about losing or damaging a textbook:

"Additionally, we will never see another damaged textbook, or the "my dog ate my homework" excuse."

Table 2 RISK FACTORS		
Risk Factors	Number of respondents	Percentage (N = 84)
Operational feasibility		
Resistance from students due to preference for traditional books	18	21%
Learning curve and training required	14	17%
Availability of specific books and limited choice for instructors	13	15%
Distraction	6	7%
Resistance from instructors	5	6%
Resistance from students due to upfront cost of the e-reader	5	6%
Instructor adjustments required	3	4%
Technical feasibility		
Dependency on network connection	17	20%
Battery life and charging needs	12	14%
Technical support required	12	14%
Software and system compatibility	2	2%
Information security	2	2%
Political feasibility		
Impact on the bookstore	8	10%
Legal feasibility		
Textbook piracy	14	17%
Privacy of student data and personal information	4	5%
Other risk factors		
Threat of technical failure on device availability	27	32%
Lost or stolen device	22	26%
Technology obsoletion	9	11%
Device durability	5	6%
Getting the devices and books in time before school starts	3	4%
Accessibility issue	2	2%
Dependency on one vendor	2	2%
Vision problem	2	2%
Technology dependency	1	1%

Operational Feasibility

In identifying issues that could challenge the fit between e-textbooks and the routines of the intended users, many respondents recognized that both professors and students may still prefer traditional printed textbooks and resist the adoption of e-textbooks. Some first year students may also have difficulty paying for the e-readers if the cost cannot be covered by financial aid. As one respondent noted:

"I believe a lot of students still like paper books better and wouldn't want to use e-books. In fact, some of my professors still don't use Blackboard and do everything on paper. I don't think they will be ready for e-books in their classes anytime soon."

The learning and adjustments required for both instructors and students present another challenge. Proper training would be required for those less experienced with technology to overcome the steep learning curve. As one student analyst pointed out:

"Professors may have to spend their own time adjusting to this tablet to fit to regular classroom setting and training their students how to use it."

Another potential negative impact is the limited availability of textbooks in digital formats, which may force some instructors to make inferior book choices for their courses. Moreover, the entertainment functions of e-readers will pose a challenge to classroom management: *"Another issue that is very likely to happen is having students not pay attention in class because they are on social network sites or playing with apps that you can also download on the devices."*

Technical Feasibility

As to the school's technology infrastructure and resources, student analysts were mostly concerned with the dependency on an Internet connection, and increased demand on both wired and wireless network bandwidth. They also voiced their concern with the battery life of e-readers and the difficulty in finding a place to recharge the devices on campus. One student, for instance, responded that:

"If an internet connection is needed for the book that may cause an issue because there is not internet everywhere and in the case that Kindle's battery runs out the student can no longer study."

In addition, the ability of the school's technology division to provide sufficient user support, ensure software and system compatibility, and the security of information is crucial. One respondent suggested:

"Technical Feasibility can be an issue because a support staff will have to be readily available to support the student's user questions and issues with the device. This support staff will also be responsible for assuring the school systems upgrades are compatible with the Kindles."

Political Feasibility

Only one potential source of resistance from within the university – the bookstore – was identified by the student analysts, for understandable reasons:

"A political feasibility issue could present itself if the university bookstore becomes angry at its reduced revenue from the implementation of the Kindle plan. If other schools follow suit, the bookstore will become obsolete."

Legal Feasibility

While a few respondents were concerned with the school's responsibility in protecting the privacy of students' personal information residing on the devices, the main legal issue is the piracy of digital textbooks by students. As illustrated by one respondent:

"It is much easier to download and steal a copy of a textbook offline [sic] then it is to steal a physical copy of a textbook. Many students may also end up sharing their digital download with others or split costs."

Other Risk Factors

The student analysts also discovered a number of additional risk factors. Many feared that malfunction, damage, or theft will be major threats on device availability. When the students rely on one e-reader for multiple classes, any threat to the device jeopardizes the access to all textbooks. The following excerpt expressed these concerns:

"Some of the risks of this program include an increase in theft. Books don't typically get stolen but a Kindle is something that would be more commonly stolen. Something that points to this is the high frequency of flash drive theft on campus. Another risk is that the Kindle could have malfunctions and or run out of battery when the student needs to use it. Kindles are also more susceptible to damage than a book is."

Two more risk factors were identified concerning the long term usability of the e-reader devices: the likelihood that the device will become obsolete during the four year term of service, and the durability of the device against wear and tear from the frequent use expected. As illustrated in the following two quotes:

"Also another risk with this technology of using the kindle would be if the kindle becomes out dated [sic] over the student's academic career. As we all know technology changes very quickly and improvements are constantly being made to our technology."

"Also how durable and reliable are the kindles? Can they handle the excessive use that the students will demand of them?"

Additionally, a small number of respondents suggested that getting the devices and books in time before school starts, whether the device meets accessibility requirements, dependency on one vendor, possible vision problem brought by the bright and small screen of the e-readers should be considered by the decision makers. Lastly, one student analyst had this to say about the increasing dependency on technology:

"Using Tablets, which are all electronic, leads students further and further away from picking up a book and reading the "old fashioned way"."

DISCUSSION AND CONCLUSIONS

As the pressure on institutions of higher education to reduce student costs increases, replacing traditional printed textbooks with e-textbooks, used in conjunction with e-readers, has become an attractive option for school administrators. To our knowledge this study is among the first to address the benefits and risks of wholesale adoption of e-textbooks and e-readers at an academic program or school in higher education. Furthermore, this study is also among the first to apply the feasibility study method, which enables the respondents to approach the research issue as an open ended question, rather than being restricted to agreeing or disagreeing with a list of items prescribed by the researcher. Acting as both college students and trainees for future systems analysts, Information Systems students are uniquely qualified to serve as informants on this important issue.

Implications

This study revealed a set of intangible benefits of a school-wide adoption of e-textbooks and e-readers. Consistent with findings from past research, students placed high value on convenience of transporting and accessing the books (Nicholas et al., 2010), and advanced features such as note taking, searching, and highlighting (Nicholas et al., 2010; Weisberg, 2011). The findings also suggest that a full scale adoption of e-textbooks brings additional benefits over e-text use in a single course. We discovered searching and buying traditional textbooks to be a stressful process for some students, hence the elimination of such process was considered a welcomed improvement. Furthermore, the benefits of e-textbooks and e-readers are not restricted by the traditional role of textbooks. Frequent use of e-readers was expected to be a catalyst for students to become more engaged with computer technologies in general. Also, e-readers were viewed somewhat as a status symbol that will create excitement among students, improve the image of the school, and attract future students. Not unexpectedly, the environmental advantages from the reduction of paper books constitute another reason for students to embrace e-textbooks.

Findings of the study suggested that there are many factors threatening the success of a school's initiative to adopt e-textbooks. Some of the factors discovered are in line with prior studies. There may be students and instructors who still prefer printed textbooks and resist e-textbook adoption (Elias et al., 2012). Learning how to use e-textbooks and e-readers effectively could be a difficult task for some students. E-readers also pose a challenge for learners to stay focused on the study materials instead of engaging in competing activities such as instant messaging and social

networks (Daniel & Woody 2013).

The results also revealed a set of risk factors, mostly stemming from the long-term use of e-readers, which have not been acknowledged in prior literature. The risk of malfunctioning, lost or stolen devices may be negligible in a single course, one semester e-textbook pilot. However, the chance of a student losing access to the e-textbooks is greatly amplified when the device is used for multiple courses, for several years. A large-scale adoption could also stretch the ability of a school's technology infrastructure to satisfy students' need for network bandwidth, technical support, and charging outlets.

In most of the e-textbook and e-reader pilots reported in the literature, the e-readers were loaned to the students for one semester and the costs were subsidized by the publishers (e.g., Weisberg, 2011) or the university (e.g., Sloan, 2012). However, in a full scale e-reader deployment the devices will likely be paid for by the students either directly, or indirectly as part of their tuition or technology fee. Students have a valid concern if the devices will become worn out or obsolete before they complete their programs.

Using e-textbooks for multiple courses also increases the likelihood for students to engage in digital piracy of the books. Furthermore, when students no longer need to visit the university bookstore to buy textbooks, sales of all merchandise will suffer, eventually threatening the survival of the bookstore.

It is interesting to note that certain traits of e-textbooks and e-readers can act as double-edged swords. For instance, while having one device for multiple books increases portability and flexibility, it also introduces a single point of failure that will cause great inconvenience if the device become unavailable due to various reasons. The network connectivity of the e-readers facilitates instant downloading and updating of the books, and enables some advanced communication and interactive features. However, it also makes the users susceptible to the distraction of Emails, chats, web browsing, and social networking.

For administrators who are planning an e-textbook and e-reader adoption project, this study offers a starting point for selecting the right benefits to promote to the faculty and students and gain their buy-in. The practical value of the results also include the list of risk factors to be mitigated. For example, durability and battery life of the device, length of warranty, and quality of customer support should be part of the criteria for evaluating e-readers. Instead of requiring students to purchase e-readers that might be obsolete in two or three years, a year-to-year device rental program could be considered. To prevent the impact of lost or damaged devices, insurance policies could be offered, and the school should keep some spare devices in reserve to provide immediate replacements, especially during exam weeks. Before a full-scale deployment of e-readers, the IT department should upgrade, if necessary, and test the capacity of the campus wired and wireless network. The facilities department need to build sufficient charging stations in the classrooms, labs, and study areas. IT service staff need to be trained to provide technical support for the e-readers, and proper trainings on using the devices also need to be provided to faculty and students. Development of policies addressing textbook piracy and evaluation of impact on the campus bookstore should also be part of the planning process.

Limitations and future research

This study applied a holistic view of the impacts of a school-wide e-textbook and e-reader adoption initiative. It does not address students' willingness to participate in such initiatives at the individual level. As personal traits such as age and gender (Baek & Monaghan, 2013), personality (Nov & Ye, 2008), and experience level with technology (Sun & Flores, 2013; Hsiao & Tang, 2014) contribute significantly to students' acceptance of digital materials, further research is

needed on how these factors correlate with individuals' acceptance of long-term use of e-textbooks and e-readers.

Generalizability of the conclusions is limited by the homogeneity of the respondent group. Students taking a junior level Information Systems course are arguably among the most technology savvy individuals in a college campus. Their responses may not accurately represent the views of the general undergraduate student population. Furthermore, graduate and professional students may have different priorities concerning textbooks and technologies compared to undergraduate students.

As our feasibility analysis only included views from students, insights from other stakeholders including faculty, administrators, and IT staff should be sought in future studies. Especially, teachers may have concerns regarding the use of e-readers in classrooms that need to be addressed. It is highly likely that, in an e-textbook and e-reader environment, instructors will need to revise their course materials and adjust their teaching strategies. Engaging students when they could be easily distracted by non-academic activities such as social media poses another challenge. While most studies to date focus on learners' perceptions and experience, some recent studies have started exploring the impacts of e-readers from teachers' perspectives. Mang and Wardley (2012), for example, conducted a pilot study of using iPads in three university courses, and recommended a number of strategies for teachers to engage the students with structured activities (e.g., in-class research exercises) using tablets. Their study also revealed that students are less likely to be distracted by non-academic activities on tablets compared to laptops. Although the student analysts in this study identified a few issues concerning teachers, replicating the analysis with instructors as respondents will provide a clearer picture of faculty's view of the benefits and risks of e-readers in classrooms.

This study employed a cross-sectional design using a hypothetical e-textbook initiative. According to Weisberg (2011), students' inclination to use e-textbooks and e-readers increased during a semester, as they gain actual experience working with the technology. To investigate how the benefits and challenges would evolve over time, a longitudinal study of an actual e-textbook adoption will be a necessary endeavor.

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THE IMPACT OF ADAPTIVE LEARNING IN AN INTRODUCTORY MANAGEMENT DISTANCE EDUCATION COURSE: AN EMPIRICAL COMPARISON

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ABSTRACT

Pedagogical research indicated that students learn differently, and one-size-fits-all model cannot accommodate diverse learning styles among students in distance education. Based on a comprehensive review on learning style models and current available educational technologies, this study presented an ongoing adoption process of an adaptive learning system in an introductory management distance learning course. Preliminary results show that students learn new knowledge more effectively in distance education with assistance of the adaptive learning system which can identify each student's strengths and weaknesses and delivery customized contents in real time.

INTRODUCTION

Face-to-face lecture model has been a standard way to deliver course contents in higher education for decades. With the rapid development of information technologies, more and more students take courses online at all types of institutions (Allen & Seaman, 2013). According to the data collected by National Center for Education Statistics (NCES), twenty percent of undergraduate students took at least one distance education course in the 2007-08 academic year (Radford, 2011). Figure 1 shows that the percentage of undergraduate students who enrolled some online courses has increased four percent every four years since Fall, 1999. More recently, about forty-seven percent of 7,234 Title IV institutions surveyed by NCES (2013) offered some or exclusively distance education in the 2011-2012 academic year.
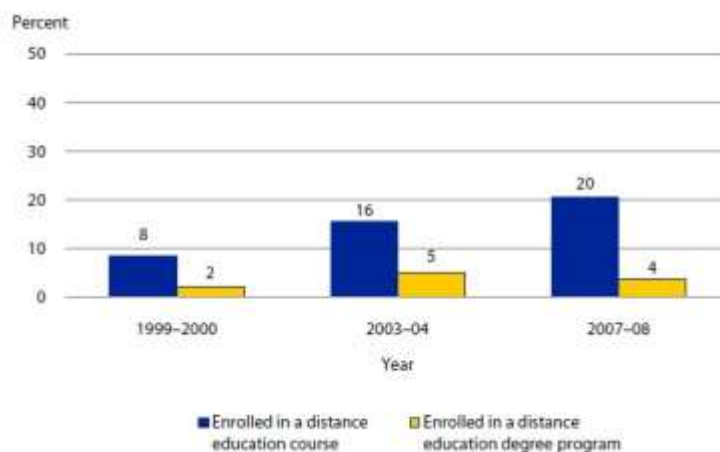

Figure 1 Percentage of Undergraduate Students Enrolled in a Distance Education Course/Degree Program (Source: Radford, 2011)

These striking statistical data demonstrate that implementing distance education is an inevitable trend for higher education no matter whether students or instructors like it or not. Although many studies have compared the student performance or satisfaction in distance education vs. face-to-face lectures, there is no consensus that any of existing course delivery models is superior in all different situations. One primary reason is that instructors cannot adapt to every student's learning style and make real-time adjustment on course materials and teaching methods. This dilemma becomes even more obvious in virtual environment. Therefore, we adopt an adaptive learning tool provided by the textbook publisher in an introductory management course in order to facilitate interactions and improve learning effectiveness for online students. The preliminary results indicate that the students taking distance education with assistance of the adaptive learning tool outperformed those in face-to-face lectures.

LITERATURE REVIEW

Over the last two decades, a large number of studies on course delivery modes show that student learning outcomes in distance education are comparative to face-to-face lectures. Allen et al (2002) and Bernard, et al. (2002) conduct meta-analyses for synthesizing literature on comparing student satisfaction with traditional lectures vs. distance education, and find that students achieve similar satisfaction in traditional classrooms. Neuhauser (2002) finds no significant differences in test scores, assignment grades, participation, and final grades in two sections of the same introductory management course taught by the same instructor with same instructional materials. The results also show that course effectiveness, learning preferences and styles are equivalent in both sections based on a carefully selected sample and control variables including gender, age, and employment history.

Many theories in educational psychology classify learning styles from different perspectives. Keirsey and Bates (1984) identify four learning styles as Artisan (SP): sensation/perceiving; Guardian (SJ): sensation/judging; Rational (NT): Intuiting & Thinking; and Idealist (NF): Intuiting & Feeling. Students with SP and SJ learning styles generally enjoy face-to-face instruction and hands-on training, which cannot be fully provided by distance education. On the contrary, students with NT and NF styles are more likely to be independent learners, and prefer individualized communications which can be facilitated by online discussions. Therefore, NT and NF styles may fit better with distance education. Myers-Briggs type indicator (Myers, 1980; Myers & McCaulley, 1985; McCaulley, et al., 1983) classifies an individual's personality in four dimensions: extroverted/introverted, sensing/intuitive, thinking/feeling, and judgment/perception. A student or instructor can belong to any one of sixteen categories based on the Myers and Briggs Type Indicator, and the first two dimensions are more relevant to learning. As most instructors are found to be introverted and intuitive and most students are extroverted and sensing (Grashe, 1996), there is an obvious mismatch between students' learning styles and instructors' teaching styles. Diaz and Cartnal (1999) find that online students seem to be more independent and self-motivated compared to on-campus students in local health education, which indicates that instructors who teach the same course in different formats need to pay closer attention to different learning styles among students.

Smith and Kolb (1986) propose four learning styles following the learning-style inventory (LSI): concrete experience (CE)/learning by feeling, reflective observation (RO)/earning by watching and listening, abstract conceptualization (AC)/learning by thinking, and active experimentation (AE)/ learning by doing. LSI has been widely adopted in academic research, and the validity and reliability of assessment instruments are supported. Nguyen and

Zhang (2011) finds that students following CE and RO styles do not enjoy distance learning because they prefer instant feedback and more interactions from the instructor.

ADAPTIVE LEARNING

In a realistic manner, it is impossible for an instructor to develop and implement different teaching styles for each student in traditional classrooms, especially in large section of introductory level courses with 25, 50 or 100 students. Although adaptive learning is impractical or too expensive to implement in traditional classrooms, a recent survey of university presidents conducted by Inside Higher Ed and Gallup (Lederman & Jaschik, 2013) reveals that adaptive learning potentially makes a "positive impact on higher education". These findings guide us to think a different way of implementing adaptive learning. With the rapid development of Internet speed, multimedia technologies, and telecommunication infrastructure, a well-designed adaptive learning tool can be easily embedded with eBook and web-based learning system. For example, we are using LS, an adaptive learning tool which comes with the textbook for an introductory management course. Once a student starts to work on a chapter, he/she receive the first question based on the sequence of the contents. If he/she answers the question correctly, the next question will be shown on the screen. If he/she answers the question wrong or does not know how to answer the question, the paragraphs in the book which address the question will be shown and highlighted on the screen. As each student proceeds, LS continues to track and assess students' knowledge strengths and weakness, and then decide which topics should be reinforced or skipped. The course contents are fully personalized based on each individual student's knowledge level. LS behaves differently based on how students interact with it and provide real-time remediation, so we hypothesize that LS is more adaptive to students' different learning styles and facilitate deeper engagement among students to achieve better learning outcomes.

RESEARCH METHODOLOGY

Student performance data are collected in two sections of an introductory management course taught by the same instructor. Face-to-face (FTF) section meets on a weekly basis, and distance education (DE) section is operated purely online. Weekly learning model including links for all the required readings and assignments is posted online by the first day of each week. Both sections have same course materials, and student performance is measured by three tests over the whole semester. All the questions in exams are identical in both sections but are randomly ordered for each student. Students have the same time to complete the exams. As students in distance education sections take all the exams online, cheating is possible. To prevent cheating, instructors do not release results and feedback until the exam expires. Some technical cheating prevention methods are also implemented, such as blocking print function in browsers, showing one question per page and etc.

Table 1 summarizes the key descriptive statistics for variables. Since adopting adaptive learning tool in this course is a new initiative at my department and still in pilot process, the sample size in this study is small. To improve the validity of this study, general regression model with repeated measures is selected to compare student performance, because each subject is measured three times across three different tests and correlation within subjects should be considered. SAS 9.3 software is used to performance statistical analysis.

<table>
<tr><td colspan="8" align="center">Table 1
BASIC STATISTICS</td></tr>
<tr><th>Test</th><th>Category</th><th>N</th><th>Mean</th><th>Std Dev</th><th>Min</th><th>Max</th><th>95% CI</th></tr>
<tr><td>Test 1</td><td>FTF</td><td>25</td><td>76.1</td><td>11.43</td><td>54</td><td>98</td><td>(71.4, 80.88)</td></tr>
<tr><td></td><td>DE</td><td>18</td><td>88.9</td><td>8.12</td><td>70</td><td>100</td><td>(84.8, 92.9)</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Test 2</td><td>FTF</td><td>25</td><td>81.4</td><td>11.04</td><td>60</td><td>100</td><td>(76.8, 85.9)</td></tr>
<tr><td></td><td>DE</td><td>19</td><td>90.4</td><td>7.26</td><td>70</td><td>98</td><td>(86.9, 93.9)</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Test 3</td><td>FTF</td><td>25</td><td>78.1</td><td>13.20</td><td>38</td><td>98</td><td>(72.6, 83.5)</td></tr>
<tr><td></td><td>DE</td><td>19</td><td>88.0</td><td>6.90</td><td>72</td><td>96</td><td>(84.7, 91.3)</td></tr>
</table>

PRELIMINARY RESULTS

Direct comparison in Table 2 shows that students in DE outperformed in all three tests. The differences are 12.8 ($p=0.0002$), 9.1 ($p=0.0035$), and 9.9 ($p=0.0026$), respectively.

<table>
<tr><td colspan="7" align="center">Table 2
SIMPLE COMPARISON FOR THREE TESTS</td></tr>
<tr><th>Test</th><th>Category</th><th>Mean</th><th>Std Err</th><th>DF</th><th>t Value</th><th>p Value</th></tr>
<tr><td>Test 1</td><td>FTF</td><td>76.1</td><td>2.29</td><td></td><td></td><td></td></tr>
<tr><td></td><td>DE</td><td>88.9</td><td>1.91</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Difference</td><td>12.8</td><td>3.15</td><td>41</td><td>-4.06</td><td>0.0002</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Test 2</td><td>FTF</td><td>81.4</td><td>2.21</td><td></td><td></td><td></td></tr>
<tr><td></td><td>DE</td><td>90.4</td><td>1.67</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Difference</td><td>9.1</td><td>2.92</td><td>42</td><td>-3.10</td><td>0.0035</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Test 3</td><td>FTF</td><td>78.1</td><td>2.64</td><td></td><td></td><td></td></tr>
<tr><td></td><td>DE</td><td>88.0</td><td>1.58</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Difference</td><td>9.9</td><td>3.33</td><td>37.8</td><td>-3.22</td><td>0.0026</td></tr>
</table>

Findings from general regression model with repeated measures also show significant differences between DE and FTE for all three tests. The differences are 12.8 ($p<0.0001$), 9.1 ($p=0.0044$), and 9.9 ($p=0.0019$), respectively. Means of combined three tests for two sections are significantly different (10.6, $p<0.0001$).

<table>
<tr><td colspan="7" align="center">Table 3
GENERAL REGRESSION MODEL WITH REPEATED MEASURES</td></tr>
<tr><th>Test</th><th>Category</th><th>Mean</th><th>Std Err</th><th>DF</th><th>t Value</th><th>p Value</th></tr>
<tr><td>Test 1</td><td>FTF</td><td>76.1</td><td>2.05</td><td></td><td></td><td></td></tr>
<tr><td></td><td>DE</td><td>88.9</td><td>2.42</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Difference</td><td>12.8</td><td>3.17</td><td>125</td><td>-4.04</td><td><.0001</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Test 2</td><td>FTF</td><td>81.4</td><td>2.05</td><td></td><td></td><td></td></tr>
</table>

	DE	90.4	2.36			
	Difference	9.1	3.12	125	-2.90	0.0044
Test 3	**FTF**	78.1	2.05			
	DE	88.0	2.36			
	Difference	9.9	3.12	125	-3.18	0.0019
Combined	**FTF**	78.5	1.19			
	DE	89.1	1.37			
	Difference	10.6	1.81	125	-5.84	<.0001

A bar chart is provided below to visually demonstrate significant differences between FTF and DE in all three exams based on general regression model with repeated measures.
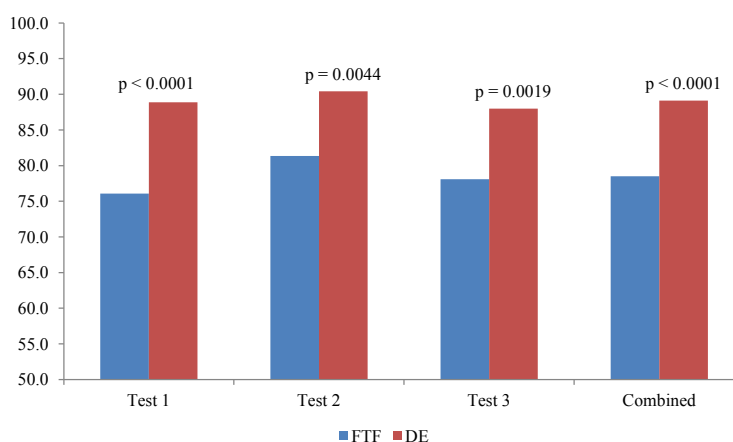

Figure 2 Comparison of Student Performance via DE vs. FTF

SUMMARY

This study compares two sections of the same introductory management course which are offered in different models: distance education vs. traditional classrooms. Even though our sample is small, the preliminary results support our proposition that students perform significantly better in distance education section with assistance of an adaptive learning tool. Students learn more effectively in a personalized environment based on their needs, since their attentions are directed to the subjects where they feel difficult, resulting in increased readiness for exams.

IMPLICATIONS, LIMITATIONS AND FUTURE RESEARCH

Historical assessment data of this introductory management course suggested that students in online sections performed worse than traditional face-to-face lectures on test results, retention rate, failure rate and etc. The adoption of adaptive learning provides a promising way to improve student performance in pure online model, especially on textbook based tests. LS continuously adapts to create personal learning path for each student based on their knowledge,

confidence level, and what students most likely to forget. Students using LS in online sections are possibly learn faster, study more effectively, and retain more knowledge.

The results of this study are preliminary and exploratory, and may not be generalized. The introductory management course generally requires students to survey many business related fields in a broad scope. Many terms, definitions, and models need to be memorized. Adaptive learning tool may be particularly useful for this type of knowledge acquisition. The impact of adaptive learning in upper level courses which teach a lot of abstract knowledge may not be consistent with this study.

Once LS is fully adopted in all the sections, more samples will be included in future research to compare student performance. Other than objective measures of student learning outcomes, subjective measures such as student satisfaction survey and course evaluation survey will be analyzed to examine why adaptive learning is helpful and how students use LS differently to match their learning styles. As LS provides powerful functions to let each individual student customize his/her learning environment and manage his/her studies, it will be interesting to explore the relationship between students' effort or engagement with LS and their course performance.

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