

The Journal of Academic Administration In Higher Education

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SAME-GENDERED LEADERSHIP MENTORING IN POSTSECONDARY EDUCATION

Stacy Edds-Ellis

Associate Dean of Academic Affairs
Owensboro Community & Technical College
Owensboro, Kentucky

Ric Keaster

Professor of Educational Leadership, Administration, & Research
Western Kentucky University
Bowling Green, Kentucky

ABSTRACT

This qualitative study provides insight into the perspective of female leaders in higher education who have participated as protégés in same-gendered dyads in a nationally recognized formal mentoring program. Data collected through interviews reveal the memorable messages received and gender-related advice offered by mentors. Examining the types of mentoring messages and advice exchanged in a same-gendered formal mentoring program in higher education provided insight into educational leadership and illuminated perceptions about achieving success and balance as female leaders.

FORMAL MENTORING AND SAME-GENDERED DYADS

One avenue for preparing and increasing the number of female leaders in higher education is drawing on the career and leadership experiences of current female leaders through mentoring. Researchers have noted that mentoring assists protégés with adopting an organization's cultural norms, increasing career opportunities and mobility, and expanding their professional networks (Lyons & Oppler, 2004; Noe, Greenberger, & Wang, 2002; Wanberg, Kaymmeyer-Mueller, & Marchese, 2006). Research suggests that women may obtain the most benefits from same-gendered mentoring dyads (Noe, Greenberger, & Wang, 2002). Developing relationships with experienced female leaders allows aspiring female leaders to develop important knowledge about the expectations and complex roles of leadership in higher education. According to Allen, Day, and Lentz (2005), same-gendered mentorships lead to higher satisfaction and more interpersonal comfort than different-gendered mentorships.

According to relatively recent reports, women are still in the minority where leadership in higher education is concerned. In a 2008 report, 23% are leading colleges and universities in the United States with women making up 45% of senior administrators and

38% of chief academic officers. The growing numbers of women in senior level positions in academe have afforded aspiring female leaders a new insight into how to balance leadership and gender in educational administration. The study detailed below suggests that for these numbers to increase, it might be necessary to formalize the mentoring of females in these leadership roles, and the suggested format is for females to mentor other females. The benefits of same-gendered dyads emerged from the data collected and analyzed in the study.

The subjects in the study were eight female college/university administrators who participated in the American Council on Education (ACE) Fellows Program (ACE, 2008) and who served their fellowships under the guidance of a female college/university president. ACE is well respected among higher education leaders as the premier leadership preparation program in academia and the organization has a stellar record in that regard. Mentoring is well established in the literature as one of the most effective means of not only encouraging individuals to move into administration (or higher levels if already serving in an administrative role), but to effectively train those aspirants as well. The concept is not new but dates back to the Greek literature of Homer, where Mentor (yes, that was his name) served as

the wise and trusted counselor to whom Odysseus, King of Ithaca, entrusted the education of his son, Telemachus.

MEMORABLE MESSAGES

A mentor serves as transfer agent to the protégé by providing a mechanism for understanding. One avenue for assisting protégés with learning and navigating cultural norms, values, and expectations is through the memorable messages that mentors provide to their protégés during the mentorship. Memorable messages are short discursive units that articulate appropriate or inappropriate behavior and conduct and can take the form of proverbs, colloquialisms, and “rules of thumb” (Barge & Schlueter, 2004). Stohl (1986), an early pioneer in this area of communication, defines memorable messages as “a communication process by which requisite orientations are transferred to organizational participants” (p. 234). Stohl argues that memorable messages have a major impact and lasting influence on people’s lives. Furthermore, Stohl contends that memorable messages provide information regarding the norms, values, expectations, rules, and requirements of a particular context that allows individuals to create sense-making mechanisms and provide a structure for modeling their behavior.

Memorable messages can act as a form of socialization within an organization or culture (Barge & Schlueter, 2004). Memorable messages originate from themes embedded in historical, political, and cultural conditions. Examining the formal messages that female leaders in higher education recall their mentors delivering can provide insight into the advice a protégé incorporates from her mentoring experience into her current leadership attitudes and behaviors (i.e., her leadership). Influential support tactics and advice provided by a mentor become memorable messages that the protégé recalls about one’s mentorship experience. Examining the types of mentoring advice exchanged in a same-gendered formal mentoring program in higher education provides insight into female leadership and illuminates the advice and experience same-gendered dyads share with one another about achieving success and balance as female leaders.

PURPOSE OF STUDY

The purpose of this study was to understand and provide new insight into the perspective of

female leaders in higher education who have participated as protégés in a nationally recognized formal mentoring program. The specific research questions within the study included (a) How do women describe their experiences as a protégé in a formal mentoring program? (b) What are the memorable messages female protégés receive from female mentors? (c) What are the types of gender-related advice offered from female mentors to female protégés? and (d) To what extent has the mentoring experience shaped the protégé as a leader? A gap exists in the area of memorable messages regarding what messages are shared in same-gendered mentorships. Exploring memorable messages through a gender lens, creates new understanding for aspiring female leaders regarding the messages of socialization within leadership in higher education.

METHODOLOGY

A qualitative study, such as this, does not provide data that are representative of the entire population of female leaders in higher education. Commonalities across the Fellows’ perspectives provide the mentoring literature base with a consistent picture of what types of information, advice, and memorable messages mentors share with their protégés. Data were used to generate theory through a thematic analysis.

The participant criteria included that the Fellow (a) had worked with a female mentor during her ACE Fellowship; (b) had completed the Fellowship within the last 6 years; (c) had held a leadership position in higher education following her Fellow experience, and (d) was geographically located within the established research criteria. For the purpose of this study, a leader was defined as an individual who is currently serving or has served as a president, vice president, provost, or director at a college. Eight participants met the criteria and were interviewed for this study.

All participants were asked the same semi-structured, open-ended interview questions with probing or follow-up questions determined by responses. Interview questions focused on participants’ mentoring experience, gender, and advice received when participating in the formal mentoring program. Data were collected via in-person interviews; one interview was conducted via telephone due to inclement weather.

Content from all eight interviews were compared and ultimately categorized to yield nine emerging

themes. Multiple measures were employed during this study to build trustworthiness of findings which include the conformability (member checks), transferability (information-rich participants and open-ended questions), dependability (audit trail and reflexive journal), and credibility (authentic researcher and reflexive journal).

STUDY RESULTS

The positive experiences shared through stories lead to the unraveling of the memorable messages the protégés' recall up to 6 years after completing the Fellows Program. Memorable messages in this study's context took the form of experiences in the mentoring program, advice received, and actions observed as a part of the same-gendered formal mentoring relationship. Nine themes emerged from key findings.

#1 Formal mentoring structures create a meaningful leadership development experience for aspiring female leaders.

All eight participants shared accounts of the positive and career-shaping experiences as ACE Fellows. The ACE Fellows Program provided the specificity and structure necessary to build the foundation of a meaningful mentoring experience. The formality of the mentoring program emerged as the first theme that created a positive experience for the Fellows. The formality of the ACE Fellows mentoring program creates an environment ripe for a positive mentoring experience. Each protégé had to apply to be accepted into the formal mentoring program and then work to find a mentor or mentoring site that matched the leadership experience and/or location the protégé desired. Applying and being accepted to a prestigious program brings additional credibility to the process found within a formal mentoring structure. Once selected to participate in the program, the protégés selected a mentor from institutions, who as members of ACE, understand the value and expected results of the mentoring program. Protégés made their mentor selection based on a variety of characteristics from mentor, institution, learning interests, and convenient location.

These findings suggest that formal mentoring structures may create a greater climate for leadership development than informal mentoring structures. Being a protégé in a formal mentoring program that specifically targeted aspiring lead-

ers in higher education provided the participants with confidence in their leadership abilities, a clearer picture of the responsibilities of leaders in higher education, a deeper understanding of their particular strengths and weaknesses as a leader, and an appreciation of the demanding job of college president or other senior level leaders.

#2 Same-gendered mentorships create a communication interaction dynamic that impacts mentoring benefits received.

The same-gendered dynamic emerged as the second theme regarding the creation of a positive experience with mentoring. The women's experience as a protégé in a formal mentoring program was influenced by the same-gendered dynamics present in the mentorship. Two of the protégés selected their mentoring experience based on location, rather than on mentor, or more specifically, same-gendered mentors. Protégé F believed that the mentoring experience was not about "female" it was about the "experience." However, for those protégés looking for a specific leadership learning experience, the structure of this mentoring program allowed the protégé to connect to that specific experience, such as female leadership. For many protégés, selecting a mentor of the same gender was paramount to the desired learning experience. Six of the eight protégés expressed that their experience as a protégé in a formal mentoring program would have not been the same if they had pursued a male mentor. Protégé B expressed that it was important to her to see how a female leader in higher education "pulled off" an effective collaborative style of leadership. Protégé E believed that the same-gendered dynamic of her mentorship allowed her to learn from other women who "had come along in a generation where there were some real obstacles to women in leadership." The same-gendered commonality between the mentor and protégé created a level of interpersonal comfort that further facilitated a positive experience.

The female-to-female exchange within the formal mentoring setting provided the opportunity to shape the protégé as an individual, leader, and future mentor through a female interaction and perspective. Participants in this study all agreed that the formal mentoring experience with a female mentor was a positive career-altering experience that enhanced their professional growth. Due to receiving professional and psychosocial functions in the mentorship, all study partici-

pants expressed satisfaction with their mentoring experience.

#3 Interpersonal comfort impacts communication and the interaction between the mentor and protégé.

In addition to the formality structure and same-gendered themes, the theme interpersonal comfort within a same-gendered mentoring dyad emerged from the data. The mentor and protégé sharing the same gender established similarities and commonalities, thus creating a level of interpersonal comfort in life experience that appeared to build an instant rapport between the mentor and protégé within the formal mentoring structure. Protégé B expressed the value of same-gendered mentorships the best by stating, "If I am going to be an administrator, I want to see how to be a woman administrator." The level of interpersonal comfort between the same-gendered dyad impacted openness, subjects discussed, and travel situations throughout the mentorship.

The protégés expressed the openness they experienced in the mentorship to discuss gender-related subjects with female mentors and the commonality of barriers that both the mentors and protégé faced as female leaders in higher education. Protégé H emphasized this by stating, "We understood each other and the difficulties of female leadership in higher education." Protégé E described this level of interpersonal comfort when she talked to her mentor about "How difficult it could be for women in higher education leadership" and that the protégé "Knew she [the mentor] understood and I understood what she was saying." Protégé A expounded upon this theme by stating that she was able to talk with her mentor about how it felt to be "underestimated and unnoticed" as a female leader. She also said that a female mentor is aware of issues that "sometimes males are not aware of." Had they not had the commonality of gender within the mentoring dyad, these female protégés did not believe they would have been as apt to discuss gender-related issues such as gender barriers, family dynamics, and personal issues (breast cancer, sexual orientation, and business attire) with a male mentor. Protégé A shared that she and her mentor talked about "things that wouldn't have been something that she [protégé] would have never talked about with a man because sometimes men just are not aware of it [the subject or topic] or they think 'Oh, this is another whining female.'"

Subjects discussed with female mentors varied across the participants. However, subjects mainly revolved around personal appearance, family, gender issues, common interest topics, and college administration. Seven out of the eight protégés expressed that they talked about the importance of personal appearance with their mentor. Personal appearance themes ranged from "working out" and "staying fit" to a certain brand of high-end women's suits that is known to look presidential to the decision for female leaders to "wear pants." Seven of the eight protégés expressed that they talked about family issues with their mentor. Family themes included children, grandchildren, and significant others. For example, the protégés "swapped stories about children and grandchildren" and shared stories of similar "tough experiences" their families were going through such as coping with a family member with an addiction. Four of the eight protégés discussed how to "multi-task" and "balance" a family while holding a demanding and visible leadership position such as college president.

All protégés addressed the ease and interpersonal comfort present when traveling with a female mentor that is not always present when traveling with a male. Stereotypically, the culture within society has created a level of discomfort in the interactions of male and female colleagues by creating a double standard of acceptable interaction between same- and cross-gendered colleagues. Both males and females must be aware of compromising situations, such as travel, that could lend themselves to violating societal standards of male and female interaction. For example, when referring to traveling with her female mentor Protégé A state, "I never thought anything about it and there was real comfort in that." The other mentors shared many stories of travel on not only a professional level, but also a personal level with their mentor. Participants suggested such invitations for travel may not have been offered as often nor would they have been as meaningful in a cross-gendered mentorship.

#4 Memorable messages serve as a vehicle for understanding the norms, values, and expectations of higher education leadership.

The memorable messages gained through the mentoring experience served as a self-assessment tool for leadership for the protégés and provided the protégés with short discursive units that are

easily recalled and applicable to leadership situations experienced as a leader. Regarding leadership, the following are some clips from the mentors' transcripts; not all of these are related to gender-specific issues:

- Before you get out in front on something, you need to be sure that you have at least a couple of allies in the room.
- If everybody thinks the way you do, then everybody else is superfluous.
- You do not help people by not trusting them. A part of the leadership role is to develop other leaders, and you do not develop other leaders by not letting them do anything.
- Be sure to get enough information before making a decision, but do not be afraid when it is really time to make the decision.
- Never act as though you are the smartest person in the world.
- Males and females in leadership should be impeccably dressed.
- People will judge whether they like you first and then they will judge your competence; but if they do not like you, they will never know whether you are competent or not because they will never get to know you well enough to make that judgment.
- I have to multitask. One evening, I was baking cupcakes for my daughter while reviewing and practicing a very important work presentation for the next day. I had large sheets of paper taped all over the kitchen.
- I can tell from observation at home with my husband and at work with other men that they [men] can handle one or two big things and you just have to leave them alone until they get one done. Women, on the other hand, can keep up with everything and therefore made better multitaskers and ultimately leaders.
- Motherhood is a great preparation for leadership roles because you have to be able to multitask and constantly be interrupted, have no one appreciate what you are doing, and only be focused on what they need from you.

- Personal time can get away from you so quickly. Find time for personal time or reflection, whatever it is, whether it's spiritual, whether it's mental relaxation, or physical activity. As a leader make sure that you always carve out that personal time.

#5 Memorable messages serve as a vehicle for understanding the opportunities and challenges associated with female leadership.

Fellows shared that in their experience they found that female leadership was more collaborative and team oriented than traditionally masculine styles of leadership. Furthermore, they expressed female leadership was not viewed as competitive or as concerned with who gets the credit for leadership results. The women in this study learned to combine feminine leadership with masculine values to find ways to operate as effective leaders in higher education. The findings embedded in this theme raise the question as to whether or not organizations have moved toward a more androgynous culture or if minorities, such as women, are merely learning how to operate as a leader in a stereotypically Caucasian, masculine culture often known as the "good old boys system."

This advice clearly reveals that there are different leadership standards for males than there are for females. Due to these different standards, females must approach leadership differently. This mentor's advice suggests that if women are not "liked" as leaders, they will not be accepted as leaders. On the other hand, participants expressed that male leaders are judged on the basis of competence rather than likeability. Protégé G received advice from her mentor not to seek a job "but to do the job before you well and if you do the job before you well, another opportunity is liable to open up." Although this advice worked for her mentor, it was a passive (stereotypically feminine) approach to climbing the leadership ladder.

The above advice sheds light into the cultural dynamics in which women pursuing leadership positions in higher education find themselves operating. Ultimately, the ability to model traditional or untraditional leadership advice and embrace memorable messages from current female leaders

is influenced by the culture in which the protégés work.

#6 Same-gendered formal mentoring influences a protégé's pursuit of professional goals.

All eight participants expressed that they felt the experience had provided them with the confidence that they could do the job of president. However, the majority of the participants were not interested in pursuing a college presidency at the time of the study. Ironically, the ACE mentoring program prepares leaders for the college presidency, but perhaps the norms and values of what it means to be a college president do not seem as attractive once an individual has the opportunity to shadow the experience as a protégé.

All eight of the protégés interviewed cited that the formal mentoring program created the confidence within them to know that they had the skills necessary for successful leadership and that they could be a president within higher education if they selected to pursue a presidency. This confidence was cultivated at a personal and professional level. On a personal level, two of the protégés expressed how the experience pushed them out of their comfort level because they were away from home for a long period of time and had to learn how live in a new city and rent an apartment. On a professional level, protégés expressed the experience had increased their confidence to lead and understand the inner workings of a college or university.

All protégés also commented that the mentoring program helped them to focus more narrowly on what type of institution (public/private, small/large, urban/suburban) where they would like to pursue a presidency. At the time of the interview for this study, one protégé was in the final stages of interviewing for a presidency. Three protégés had no desire to pursue a college presidency. The first of these three protégés, Protégé A, stated the following:

I don't know if I ever want a Presidency. The ACE Fellows Program shows you some of the things you don't want to be. I think when you talk about 12th-grade work when you are in 8th grade, it is sometimes hard to fathom. I think I have moved beyond 8th grade. But I am not sure I want 12th grade. I have the ability to be a President. I think

I have the ability to be a Provost. I am not sure I want to be President. I may want to be a Provost some day.

The second protégé, Protégé B, who expressed that she did not desire to become a president, felt a disconnection between having the ability to remain loyal to herself and her beliefs, while being loyal to the institutional beliefs as a president. This protégé believed that self and institution were not always congruent. For example, this protégé felt strongly that military should not be allowed to recruit on campus. However, if she were to become a president at an institution that receives federal funds, she would have to allow recruiters on campus. She could not make decisions as a leader that were incongruent with her core beliefs. The third protégé, Protégé C, who was not interested in pursuing a college presidency, related her decision to her career path.

I guess [my reasoning for not pursuing the presidency] is tied to me not being a full professor . . . I think I look at what I want for my whole life. I do not just look at what I want for my career.

Four protégés expressed a consideration of pursuing a college presidency. However, all four noted that the decision would depend on personal factors. Protégé D expressed the following:

I do desire to maybe someday be a president. The purpose of the ACE Fellows Program for me was to help sort that out if I would actually like to be a president. These jobs are incredibly difficult. They take a major toll on your life, on your health, on your family and friends and it is really all consuming. So, you know you have to really think about it. You can't just say, "Oh well that is a nice salary, I am going to go for this job." It really is a huge commitment of time.

#7 Same-gendered formal mentoring shapes the protégé's perspective on mentoring other aspiring leaders.

The mentoring experience shaped the protégés by creating a desire to pay back their positive experience by serving as a mentor to other aspiring leaders. All protégés commented on the fact that the mentoring experience positively shaped how they view the role of mentoring, especially when others are looking to them as a mentor. Perhaps Protégé C captured the collective responses of the

protégés best while explaining the responsibility that accompanies individuals who are looked to as mentors, officially or unofficially, when she said individuals must be “careful with the power given” as a mentor.

And a lot of it [mentoring] really is just like with your parents. They can tell you from now to kingdom come – whatever – but people watch how you are and what you do. . . . It just happens in a position like this [leadership].

Furthermore, the protégés noted that the Fellows Program “fosters a hands-on approach to mentoring” and cultivates a “lend-a-hand approach” to other aspiring leaders.

Having been a protégé in a formal mentoring program, study participants have insight to offer to females who may look to them as a mentor. Study participants shared the advice (memorable messages) that they would want other aspiring female leaders in higher education to know. All protégés had expressed that they implemented, shared and/or modeled these memorable messages at one time or another in their role as a leader. This advice is based on a collection of experiences (memorable messages) through the ACE mentoring experience, as well as the protégés’ past and present work as a leader.

#8 Same-gendered formal mentoring shapes the advice protégés share with other aspiring female leaders.

The memorable messages received during the mentorship continued to mold other aspiring leaders as the protégés share the messages received with the aspiring leaders with whom they currently interact on a regular basis. The protégés noted receiving and sharing the advice listed below.

- Women make great leaders.
- Women leaders bring a different perspective.
- It’s not about you – get past having to be recognized.
- You can be a great leader and not be a man.
- Don’t compete with men on their terms.

- Quantity and quality can exceed male counterparts.
- Women leaders need supportive family structures.
- Protect yourself so your life doesn’t get out of balance.

#9 Same-gendered formal mentoring is influential to a protégé’s experiences outside of higher education administration.

Study participants noted that leadership skills were transferrable from outside to inside the organization and vice versa. Participants shared that the leadership skills learned through mentors were used in areas such as motherhood and community leadership. The skills gained through mentoring became ingrained into who these women were and impacted their interactions inside and outside of education.

In addition to the role of mentor, the formal mentoring experience influenced the protégés’ approach to other roles they might fulfill such as community member, significant other, and mother. Seven of the eight protégés shared how the mentoring experience, coupled with their lived experiences of working in higher education, influenced other roles they fulfill outside of higher education. Protégé A expressed that on a personal level this [ACE Fellow] experience has helped her be “civil and respectful” while not being “shy” about stating her opinion during her interactions inside and outside of higher education. Protégé B expressed that the formal mentoring experience shaped how she views her role in community groups by understanding others’ points of views. For example, Protégé B works with student groups on campus and works with ex-offenders of law in a half-way house off campus. She has learned through the mentoring experience to work to better understand people, and that to help them, you have to listen and understand their worldview. Due to her self-growth and reflection about her experience as a Fellow, Protégé C stated that the experience solidified her “authentic self” which permeates all that she does in her professional and personal life. Protégé D did not provide an example of how the mentoring experience influenced other roles she fills. Protégé E said that her experience as a Fellow has helped her in her “approach” to how she raises her daughter. Protégé E’s balance of leadership and family, as a female leader, was a positive influ-

ence on her daughter's ability to set and achieve her goals as she aspired to be a leader. Protégé F expressed that she placed an increased value and observance on her "personal time" with family. This increased observance of personal time was a result of advice from mentors and from watching other leaders who were and were not successful with carving out personal time as a leader, ultimately impacting their success as a leader and their overall health. Protégé G believes that her daughters have benefited from seeing her, while they were growing up, as a rising leader who multitasks. Protégé H stated that she believed her work as a female leader has "influenced" how her sons view females. Protégé H's sons were exposed to her success and difficulties of being a female scientist and leader while sharing the responsibility of balancing the family with her spouse. Growing up in this environment was influential in her sons' respect for female leaders and the challenges they often face. Additionally, Protégé H stated that her influential experience as a Fellow "permeates" everything she does on a personal and a professional level.

IMPLICATIONS

The data from this study yielded three implications for helping to shape the profession of higher education administration.

- Graduate schools preparing future leaders for educational administration should review their recruiting efforts, faculty demographics, and programs relative to the needs of women and other minorities groups in conjunction with formal mentoring programs.
- College and universities, as well as professional organizations connected to higher education leadership (e.g., local boards, state associations, national organizations, and accreditation agencies) could expand the accesses and entry into the administrative pipeline for women, as well as other minorities, by establishing leadership training programs and appointing/hiring individuals with diverse backgrounds.
- Current female leaders in higher education should actively sponsor and support other aspiring female leaders within the profession.

SUMMARY

This study, like the aforementioned analysis of the mentoring relationship between Mentor and Telemachus, has relied on the lived experience of these leaders to explore the transfer of skills, culture, and values through memorable messages that prepare females for life and leadership in higher education. These findings can be used to shape current and aspiring leaders on an individual level and influence the culture of leadership and mentoring within higher education on a national level, both professionally and programmatically. Such information will afford females a "head start" on their administrative careers with the knowledge gained vicariously through the experiences of others.

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**SoBA CENTRAL:
AN INTEGRATED PROGRAMMATIC APPROACH
DESIGNED TO ENHANCE STUDENT SUCCESS**

Cheryl Minnick

Career Development Advisor/Internship Coordinator
Office of Internship Services
University of Montana
Missoula, Montana

Sandi Nelson

Advising Coordinator
School of Business Administration
University of Montana
Missoula, Montana

Michael Harrington

Associate Professor of Management
University of Montana
Missoula, Montana

Kathleen Tarkalson

Director of SoBA Central/Internship Director
School of Business Administration
University of Montana
Missoula, Montana

Jerry Furniss

Management Information Systems Professor
School of Business Administration
University of Montana
Missoula, Montana

ABSTRACT

Numerous studies have shown that effective career advising for business students beginning with the freshman year is crucial. Student career advising and career development needs in professional schools are best met by the school itself rather than a central campus-wide resource unfamiliar with the specific needs of business students.

This paper outlines an integrated programmatic approach, developed by the University of Montana (UM) School of Business Administration (SoBA). SoBA created SoBA Central, which is a one-stop center for academic advising and assessment, career development and internship coordination within the school. SoBA Central is part of UM's effort to address student success, retention and promote experiential opportunities and career development. This cohesive, multi-tiered approach will also enable SoBA to better meet the Association to Advance Collegiate Schools of Business - International (AACSB) accreditation recommendations and requirements and to respond to UM's administrative initiative aimed at increasing student retention effectively, efficiently and with minimal expense. Initial data were gathered from business students to establish benchmarks to measure program success. SoBA Central will engage students at the freshman through senior levels in developmental coursework and programs that address student transitions into college, tying them with successful exits from college, productive careers and meaningful alumni relationships.

INTRODUCTION

According to the Census Bureau, the gap between the earnings of people with differing educational levels has widened in the last 30 years. Over an adult's working life, high school graduates earn an average of \$1.3 million; holders of associate degrees earn approximately \$1.5 million; and bachelor's degree holders earn an average of \$2.1 million (U.S. Bureau of the Census, 2012). College graduates also enjoy benefits beyond increased income, including higher levels of saving, increased personal/professional mobility, improved quality of life for their offspring, better consumer decision making and more hobbies and leisure activities. Additionally, college graduates have greater workplace productivity, increased consumption, increased workforce flexibility, decreased reliance on government financial support, increased charitable giving and community service and increased appreciation for diversity (Institute for Higher Education Policy, 2005).

Unfortunately, in the past 50 years, "The institutional graduation rate has held at a constant 50 percent" (Swail, 2004). It is crucial that universities help enrolled students successfully complete their academic program, gain related experience while in school and launch their careers after graduation so that they can earn an estimated \$1 million more in their lifetimes than those who only complete a high school education. Several initiatives to increase the proportion of Montanans with college degrees are in place to enhance Montana's competitiveness as a state, such as UM's *Partnering for Student Success: A Collaborative Action Plan for Student Retention 2009-2013* and *UM 2020: Building a University for the Global Century*.

This paper examines factors affecting student retention, characteristics of business students in general, characteristics of SoBA students (as demonstrated by data collected through surveys) and the SoBA's creation of SoBA Central – which is part of SoBA's efforts to support and address student success, retention, experiential opportunities and career development through an integrated programmatic approach. The overarching goal of SoBA Central is to engage students from freshman through senior levels in developmental coursework and programs that address student transitions into college, aiding them in successful exits from college, productive careers and mean-

ingful alumni relationships with the University of Montana.

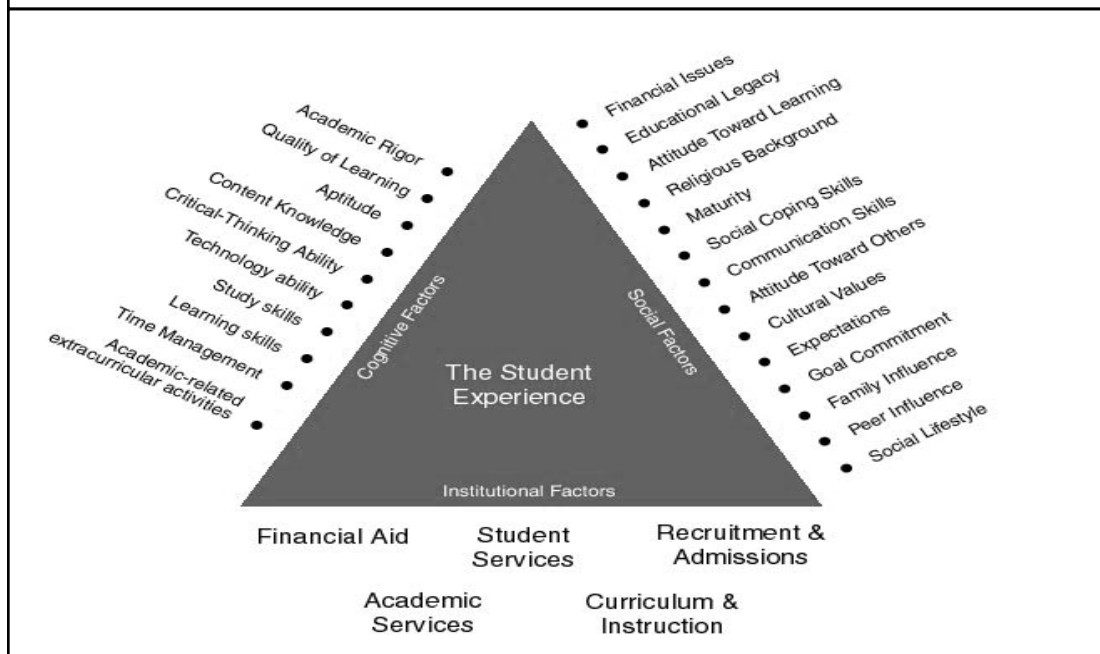
FACTORS AFFECTING STUDENT RETENTION

Many factors are associated with retention, including academic preparedness, commitment to educational goals and the institution, campus climate, social and academic integration and financial aid. Vincent Tinto's 1975 work, "Student Integration Theory," provides the theoretical foundation for retention research and is the most influential explanatory model of persistence in postsecondary education. At the conceptual core of his model is the importance of person-environment fit to freshmen retention. Tinto suggests that students well-integrated into the social and academic community of the college are less likely to disengage or drop out. Swail's (2004) Geometric Model of Student Persistence and Achievement specifies three main factors: cognitive, social and institutional (figure 1). All the factors in the model can positively, negatively or not affect student retention. The dynamic relationship among these factors determines the student's experience and persistence. In other words, both the student and the institution are responsible for student success.

Cognitive factors refer to students' academic abilities and skills, including academic preparedness, critical thinking ability and study and time management skills. Social factors involve students' maturity, ability to form relationships, commitment to goals, coping skills and attitude toward learning. Institutional factors address how the college helps students achieve the students' educational goals, including curriculum and instruction, academic and student services, recruitment and admission and financial aid.

According to the model, students bring their cognitive and social abilities and skills to the institution they attend. It is the institution's responsibility to get to know its students and provide these students with support according to their needs in an effort to balance these three main factors and help students succeed. Institutions must not only recruit qualified students, but also commit themselves to providing the resources necessary for students to succeed. Seidman (2005) calls for institutional models committed to student success to set high expectations for their students, provide necessary support and

FIGURE 1
GEOMETRIC MODEL OF STUDENT PERSISTENCE



feedback and significantly involve students with other students and faculty.

Academic Advising

Academic advising is much more than simply helping students schedule classes. Effective advising helps students clarify goals and plan their academic experiences to best support those goals. Lowe and Cook (2003) suggest that academic and support services implement proactive strategies to reach freshmen "before they have an opportunity to experience negative feelings of fear, failure, disappointment and confusion." UM implements an early alert program, designed to identify and provide assistance to students having academic difficulty. Instructors of lower-division courses identify students who are performing poorly in their classes, and the system notifies advisors of those advisees who are deficient and in need of assistance.

As of fall semester 2011, 10.6% of UM's undergraduate population and 12.3% of freshmen had not declared a major. The rate of students who switch majors (often multiple times) during their college years is much higher. On average, 22.7% of UM's undergraduate population changes majors each fall (UM Summary of Migration, 2010). Some of this indecisiveness about an intended major is healthy, perhaps reflecting initial

exploration and eventual crystallization of educational goals that naturally accompany personal maturation and increased experience with the college curriculum. However, some of the indecisiveness and vacillation may reflect confusion, or premature decision-making, due to students' lack of knowledge about themselves or the relationship between college majors and future careers.

Delay in degree completion, due to student confusion and vacillation regarding academic major, may contribute to the extended length of time it takes many students to complete graduation requirements. It now takes, on average, 5.6 years to complete a bachelor's degree and 4.6 years to complete an associate's degree (U.S. Bureau of the Census, 2012). Many institutions, UM included, now measure six-year graduation rates.

Experiential Learning Opportunities

An important step in providing supportive services to ensure student success is to furnish related experiential learning through internships and service learning opportunities. Internships offer mutually beneficial opportunities for students and employers. For the student, they provide rich, hands-on learning, industry exposure and resume building experiences. Additionally, internships assist students in their transition from the classroom to the work environment,

helping them build upon classroom theory to make real decisions, solve relevant problems, develop connections and learn new skills. A study of the SoBA graduating class of 2009 found that 26% of scholarship awardees and 67% of Mortar Board recipients completed internships during their academic careers. It is clear that internships and scholarship go hand-in-hand.

The Internships and Co-ops 2012 Talent Development Outlook: CERI Research Brief 2012.3 found that more than 70% of organizations recruited interns during the 2011-2012 academic year. The job market is competitive, and experiential learning continues to be a strong recruiting venue for employers and an important career development means for students. Internships rank as the top recruiting strategy employed by organizations (Recruiting Trends, 2011-2012). Rosemary Haefner, Vice President of Human Resources at CareerBuilder.com stated, "Internships not only help build skill sets and establish a successful track record, they offer great networking opportunities to land a position after graduation." (CareerBuilder.com, 2008). Recognizing that more than 70% of students who completed internships receive job offers, it would behoove SoBA to have a clear and thorough "unity of effort, based on a consistent set of objectives and values" (AACSB, 2002) between academics, internships, advising and career development.

Career Development

Career development has been shown to increase student satisfaction with the institution (AACSB, 2002). A secondary gain from career development programs is the creation of a stronger connection between students and the institution's key educational agents, as well as to illustrate to students how these educational agents act as a bridge to the students' future careers.

Millennial students require clear direction, especially in terms of orienting them to the school-to-career process. InternBridge, Inc. surveyed more than 12,000 college students in 2008 and found that the students want more help understanding employer expectations, learning to network and earning internship and job offers (Cox and Neidert, 2008).

Research shows that students' sense of purpose (career goal) increases retention (Gerdes and Mallinckrodt, 1994). Knowing why one does

something is important to the relevance and commitment to any endeavor, including college. In 2005, as a result of employer, alumni, student and faculty urging and start-up funding donated by those same employers and alumni, SoBA created a Career Development program for its students. One of the most often stated overall goals for the program, as indicated by these stakeholders, was to create a "total student culture change." Serious issues preventing student success were due, in part, to a lack of student preparation, low-to-no involvement in recruiting activities and frustration with lack of career development support.

The specific focus of this highly visible, successful program has been to create a bridge between college and career by ensuring that students focus early and often on the following: nurturing their career aspirations throughout their years at SoBA (beginning the freshman year); developing a strategic career plan; actively engaging in career discovery; learning how to job search effectively; and having access to and regular interactions with alumni, employers and career professionals.

Through faculty support and collaboration, the program integrated career development through curriculum development. Employers now report being overwhelmingly impressed with SoBA student preparation and engagement in the recruiting process, as a direct result of the career development programs, and enjoy participating in student progress. Students report a heightened sense of confidence in, understanding of and experience with the job search and interview process, as well as increased success. Faculty and administrators report that this has helped contribute to a more engaged student who exhibits a heightened level of professional behavior, both in and out of the classroom. Career development (Who am I? Where am I going? How do I get there?) and integrating what students learn in the classroom into real world applications are key to helping students transfer this knowledge into a professional career.

CHARACTERISTICS OF BUSINESS STUDENTS IN GENERAL

AACSB published the results of an extensive study as part of its International Effective Practices Series entitled, *Effective Practices: Undergraduate Career Services and Placement Offices*. This report shares the results of a quantitative

analysis of student satisfaction and qualitative research to identify the practices responsible for the success of the high performing schools. The data consisted of nearly 40,000 responses, on 184 campuses, to the Undergraduate Student Benchmarking Study.

According to the AACSB Effective Practices Report, students' expectations include desired help in identifying appropriate professions and career paths; conducting their job searches and preparing for interviews; securing more job interviews; and scheduling classes and workshops that are substantive, pleasant and delivered with personal attention. A key finding in this report is that Career Services and Placement Offices (CSOs) play a crucial role in creating student satisfaction, a key metric of educational success. In fact, student satisfaction with a CSO is the second strongest predictor of overall satisfaction with an undergraduate business program; only the quality of faculty and instruction for required courses in a student's major surpassed student satisfaction with CSO performance as a measure of success. According to the AACSB study, the quality of CSO infrastructure, such as successfully integrated technology and facilities housed within the business school, is critically important. Schools that view the CSO as integral to achieving their mission tend to have higher levels of student satisfaction. An important feature of the leading CSOs featured in the AACSB Report is that their schools view these CSOs as integral parts of the college that serve to help fulfill the overall mission.

Other factors are associated with student satisfaction. Some of the more important are the following: CSO programs and activities that help students select a major or career in which they are confident and one that supports them in the transition from school to work; long-standing relationships with employers and recruiters; and strong alumni involvement, including mentoring programs.

The report profiles the top three rated CSOs: University of Wisconsin-Madison (UW-Madison), Indiana University (IU) and BYU's Marriott School. All three have CSOs focused exclusively on business students, and UW-Madison states, "Our business students cannot be adequately served by a campus-wide center." The report also states that having a dedicated CSO

appears to provide a competitive advantage for undergraduate business schools.

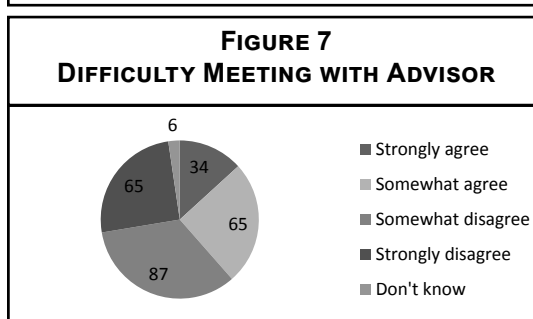
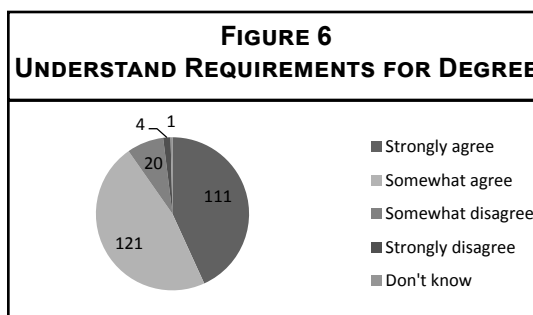
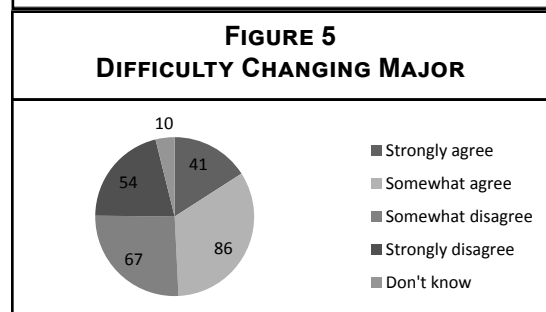
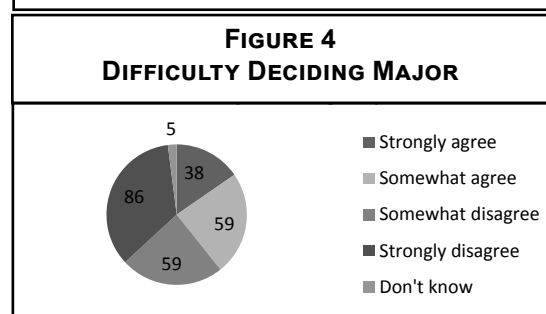
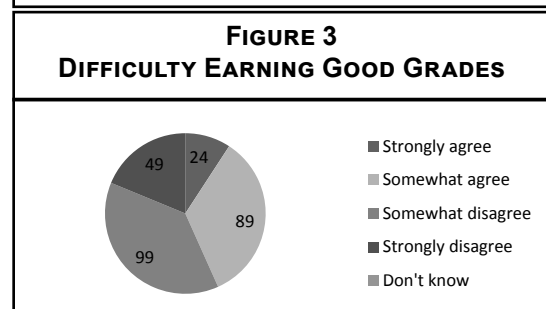
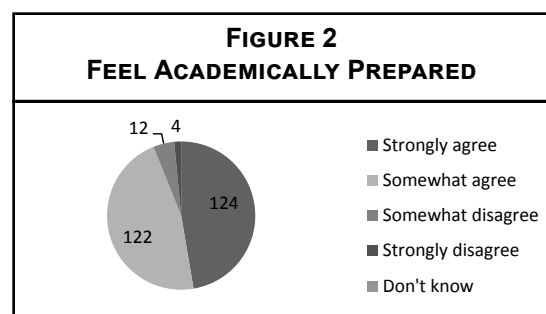
UW-Madison describes how its CSO is a top priority for the school and how it has fully integrated it into all parts of the business school. It also states that student career development and employer development are school-wide responsibilities – "structure supports strategy."

IU credits its success in this arena to a number of elements, including information technology that enables students and recruiters to work easily with each other and staff as well as two semester-length career planning courses, one each at the sophomore and senior levels. IU views students and recruiters as its clients and states, "This is a professional school, and students want to get jobs. Supporting their efforts to do so is part of our responsibility as faculty." All business students take Career Perspectives, Business in the second semester of their freshmen year or first semester of their sophomore year. It is a two-credit course designed to introduce students to the process of career planning through a comprehensive and hands-on coverage of the topic as a vehicle for discovery and preparation. It requires students to make several tentative academic and career decisions based on self-assessments and career interests. In the junior or senior year, IU students take Career Planning and Placement. This is also a required course, first offered in 1938, that helps upper-division students "transition from an academic environment to a career setting." This course focuses on seeking and landing a good job at an attractive salary. Guest lecturers support the class through professional opportunity orientation sessions to help students explore industry groups and organizations, and they offer recruiter presentations about job searching, interviewing, and other key job search skills.

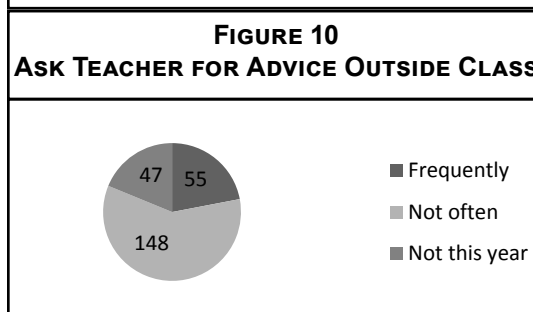
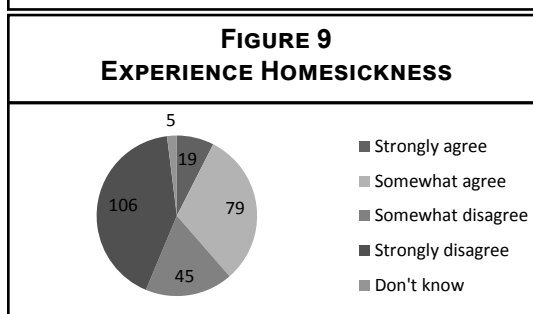
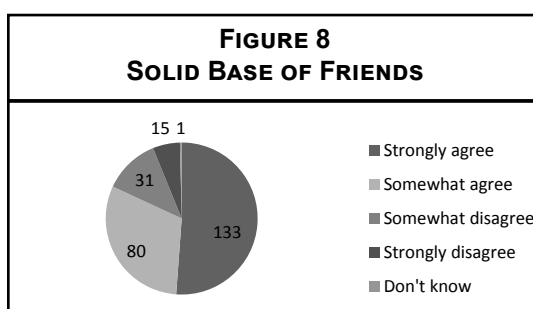
CHARACTERISTICS OF SoBA STUDENTS

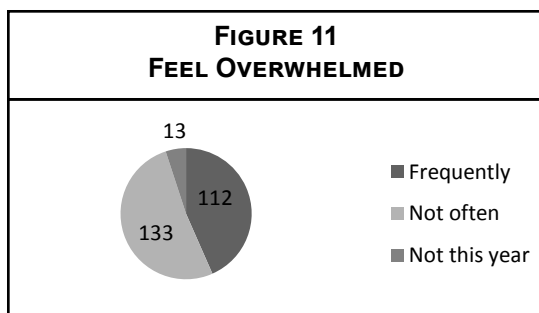
UM faces a 28% attrition rate from first to second year, with a significantly higher attrition rate for students without a declared a major, according to *Partnering for Student Success: A Collaborative Action Plan for Student Retention 2009-2013*. UM has a targeted goal of increasing the overall first-to-second year retention rate to 80% for the Mountain Campus by AY 2012-2013.

The authors administered a survey during spring 2012 semester to 265 SoBA freshmen and sophomore students. The purpose of the survey was to evaluate SoBA students' academic preparedness, commitment to educational goals and the institution, social and academic integration and financial status. While 94% feel they were academically prepared for college (figure 2), 43% think it will be difficult to earn good grades (figure 3). Additionally, large percentages of students feel it is difficult to decide on a major and to change their major (figures 4 and 5). Ninety percent of students understand the requirements to earn a degree (figure 6), but 39% find it difficult to meet with an advisor (figure 7).



While the above numbers are a good foundation, more can be done. Mixed results were reported in the area of social and academic integration.





While 82% of students report they have a solid base of friends (figure 8) and 39% report experiencing homesickness (figure 9), only 22% of students regularly seek advice from teachers outside of class (figure 10) and 43% frequently feel overwhelmed by all they have to do (figure 11). Very small percentages reported regularly participating in activities such as politics, student elections, community service and religion. Students who feel they are a part of their institution and community work harder to succeed. SoBA Central encourages students to regularly talk to teachers outside of class and participate in school and community activities. While 100% participation is not a realistic goal, SoBA is hopeful that it will see a 25% improvement in SoBA student social and academic integration by 2015.

SoBA CENTRAL: ONE-STOP SOLUTION

As a specialized professional school, SoBA prepares students for business careers. Across the country, it has been shown that student career advising and career development needs in professional schools are best met by the school itself rather than a central campus-wide resource unfamiliar with the curriculum and career options for its students (AACSB, 2002).

Through a collaborative reconfiguration of SoBA student support services, SoBA Central aligns three existing in-house departments: academic advising, career development and internship services. By physically creating a centrally located student services office, all three programs can function as an integrated one-stop student services facility, which is strongly recommended by AACSB. One of the six key action strategies to address UM's nearly 30% attrition rate includes the establishment of a central 'Center for Academic Enrichment' to promote and coordinate opportunities for students in and beyond the

classroom. Additionally, this action strategy will purportedly strengthen student support through developmental career coursework and targeted programs for first-year and at-risk students. A single change, re-aligning departments and services in-house, addresses the request for action by all campus departments, including SoBA.

By collaborating with alumni and the SoBA Advisory Boards and developing a centralized student center, SoBA can continue to expand and foster new relationships with alumni and employers to develop professional internships, mentoring arrangements and employment opportunities, which are other ways to assure business students achieve their goals of earning a solid education. The documented impact of attendance on student retention, coupled with the greater cost effectiveness of managing enrollment via retention, strongly suggest that investment in retention efforts is an educationally enhancing and cost-effective intervention.

Goals of SoBA Central

SoBA Central will assist students in:

- Transitioning effectively into college and from pre-business majors to declared business majors;
- Selecting a business major and complementary minor or focus area;
- Locating appropriate resources to solve a wide range of student problems;
- Gaining experience through internships, service learning, and related opportunities;
- Identifying resources for enriching their academic experiences;
- Exploring opportunities to further graduate and professional education;
- Completing a degree; and
- Learning how to strategically manage career and job search efforts for life.

Key Initiatives

The following research-based initiatives summarize the detailed action items and related tasks that will be executed by SoBA Central in collaboration with SoBA's Student Retention and

Engagement Committee and with UM Administration:

- *Collaborative Student Retention and Success Management Approach*—Restructure present areas within the SoBA—Advising, Internships and Career Development—allowing SoBA a consistent focus on student retention and success.
- *Seniors Mentoring Freshmen Program*—Develop a “Seniors Mentoring Freshmen” program as part of the SoBA careers course and/or a portfolio-building option/requirement for senior business majors.
- *Pre-Business Support and Advising Initiative*—Collaborate with UM’s Office of Student Success to interact with and engage freshmen and sophomores displaying an interest in business. This support ranges from deploying freshmen advising resources physically within the SoBA; creating a *Business Interest Group (BIG)* to hold social events and informational meetings (such as a fall SoBA-wide social event to bring students together with business leaders, seniors, graduates, professors and staff) for freshmen and sophomores interested in business; collaborating with the campus community on use of appropriate messages at key times (identifying pivotal points in a student’s decision making); and using technology to enhance student success, satisfaction and retention.
- *Provide a Consistent Advising Home for SoBA Students*—In addition to the previously mentioned Pre-Business Support and Advising Initiative, SoBA Central also will play a significant role in group and individual advising for upper-division and graduate students. Students will find experts housed in one area and experience consistency in information, advice and direction.
- *Freshmen Interest Groups (FIGs)-Business*—Play a more significant role in supporting, collaborating with and assisting the established FIG program.
- *Early Alert*—Work with UM resources to more fully implement the Early Alert program into the SoBA. Develop internal processes to identify at risk students to intervene and direct available campus resources to those students.
- *SoBA Careers Courses*—Offer a structured opportunity for students to assess their personality, interests and values and to connect their findings with appropriate academic and career paths to assist them in making major/minor and career choices, and to enhance freshman-year persistence and degree completion.
- *Freshmen and Sophomore Course Enhancements*—Work collaboratively with faculty and learning theory and technology experts to enhance delivery techniques and content critical to retention and satisfaction of the new generation of students.
- *Excellence in Business Communication*—Further develop and coordinate SoBA’s assessment initiative to provide detailed feedback on student writing assignments in key business courses (designed to allow SoBA to engage in assessment activities and identify at-risk students so that referrals can be made to UM’s Writing Center).
- *Internships and other service learning*—Support SoBA students in experiential learning and service learning activities by coordinating internships and working collaboratively with faculty who apply for and receive service learning designation for their courses.
- *Undergraduate Research/Project Assistantship/Practicum Program*—Develop a number of competitive undergraduate research/project opportunities that will engage students, enhance student skills development and increase student satisfaction and retention.

Timeline

The initial phase of SoBA Central began spring 2012 semester. The focus of this phase was improving customer service in the central information office through employee training and customer surveys. Several management information systems students were retained to evaluate and flowchart processes that impacted students and discover ways to automate and make the processes more efficient and effective. A new website was created tying together the three student

services areas of advising, internships and career development.

Over the course of the 2012-2013 academic year, physical remodeling changes occurred in addition to new, improved wayfinding signage so students know exactly where to find answers to their questions and direction to the appropriate resources. Evaluation of the initiative to date will occur during summer and fall 2013. If the foundation is solid and data indicate that students are benefitting from SoBA Central, additional initiatives outlined above will commence.

CONCLUSION

Consistent student feedback supports the recommendations from AACSB's peer-review team that the SoBA should provide, locate and coordinate student support services within SoBA to better meet students' specific academic needs and provide a bridge for the transition from college to career. Data show that retention is improved and student success is enhanced if a professional school, such as the SoBA, can engage students in advising, career development and internship opportunities early – and often.

SoBA Central is a work in progress. SoBA Central's mission to integrate programmatic experiences critical for student success is expected to contribute to an enriched academic environment for students, enhanced student retention rates and benefits for other stakeholders – including recruiters and employers. Following spring 2012 Advisory Board meetings, members were so energized about the conceptual model for SoBA Central that they immediately contributed funding to complete the first phase of physical remodeling to better serve students.

The SoBA plans to conduct additional surveys during the 2013-2014 academic year to measure indicators of success and longitudinal progress. If the SoBA Central initiative is demonstrated – through surveys and informal, anecdotal data-gathering techniques – to be as successful as expected, SoBA is confident that it will secure permanent funding to ensure future students benefit from academic opportunities and career collaborations afforded by SoBA Central.

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STUDENT MIGRATION TO ONLINE EDUCATION: AN ECONOMIC MODEL

Joseph G. Eisenhauer

Professor of Economics and Dean
College of Business Administration
University of Detroit Mercy
Detroit, Michigan

ABSTRACT

The popularity of distance education has increasingly led universities to consider expanding their online offerings. Remarkably few financial models have been presented for online courses, however, and fewer still have investigated the economic consequences of the migration, or cross-over, of students from traditional classes within the institution. The issue is critically important because small class sizes are widely recommended for online courses, and the available empirical data suggest that sizable and rising fractions of online enrollments are due to internal migration. This paper develops a simple model indicating the minimum proportions of online students who must be new registrants in order for online ventures to break even.

INTRODUCTION

Online education has grown rapidly in recent years. Allen and Seaman (2011) document an average annual growth rate of more than 18 percent per year from 2002 to 2010, with 31 percent of all students who were enrolled in postsecondary institutions taking at least one online course in 2010. Because of this phenomenal expansion, universities are increasingly looking to move additional courses and programs online as a means of raising enrollment and generating higher tuition revenue. Several empirical studies have examined the expenses and revenues of online courses at specific institutions (Bartolic-Zlomisljic and Bates, 1999; Whalen and Wright, 1999; Caudill, 2009), yet the financial models of online education generally remain under-developed and the extent to which online programs actually attract new students to an institution has received surprisingly little attention.

There are clearly some populations of students who have been underserved by traditional, face-to-face education, and for whom distance learning provides newfound access to previously unattainable degrees. To that extent, online education expands the potential pool of student applicants. At the same time, however, online courses may also cannibalize traditional classes by diverting students who would otherwise attend classes on campus, but who find it prefer-

able, for one reason or another, to study online. The distinction between new students and those who migrate from traditional to online settings has important implications for the finances of the institution. This is especially true given the substantially lower limits on class sizes that have been widely recommended as being optimal for online courses.

The present paper develops a simple economic model of the breakeven point for online education. In contrast to most prior research, we explicitly incorporate opportunity costs by modeling students who cross-over from traditional to online courses within the institution. This allows us to determine the mix of new students and migrants at which an online course becomes as financially viable as a traditional classroom course. The following section investigates the distinction between new students and those who migrate between formats, and briefly reviews the literature on optimal class size. The third section provides the analytical model, and a short conclusion is given in the final section.

MIGRATION VS. NEW ENROLLMENT

The principal advantage of online education is its flexibility for those whose distance from campus, schedules, or other limitations restrict their ability to attend traditional face-to-face classes. These include graduate students as well as older,

non-traditional undergraduates whose jobs and/or familial responsibilities prevent them from being physically present in a classroom on campus at predetermined days and times; those who reside at such a distance from campus that commuting becomes impractical, and for whom living in a dormitory or campus apartment may be unaffordable; and students with disabilities for whom attendance in a traditional classroom may present overwhelming challenges. Although educational institutions are obligated to accommodate students with disabilities under the Americans with Disabilities Act and earlier legislation, issues such as transportation to the institution can still present difficulties; see for example Paul (2000). In some cases, online education also allows students to accelerate or decelerate the pace at which course material is covered; it can therefore accommodate the individual learning capabilities of students who require more or less time than a traditional semester, trimester, or quarter to complete a course (Wang and Reeves, 2007). Such populations clearly constitute an important part of the enrollment growth in online education.

Another portion of the growth, however, is due to the popularity of online courses among students who would otherwise take traditional classes but simply prefer the electronic format. There are several possible reasons why students may elect to migrate to an online course if given the choice. Student-athletes whose travel to out-of-town competitions frequently keeps them off campus, or whose practice schedules conflict with the scheduled times of certain courses, may opt for some online alternatives, especially if they are offered in asynchronous formats (Kreb, 2008). Some students may register for online courses because they perceive—or misperceive, as the case may be—distance education to be less demanding than traditional courses (Li and Akins, 2005; Mortagy and Boghikian-Whitby, 2010). Unfortunately, those who think it will be easier to cheat online may also be attracted to web-based formats. Kennedy, et al. (2000) found that a majority of students (and faculty) believe it is easier to cheat in electronic classes than in traditional classes; Lanier (2006) found that students cheated twice as much online, and the students surveyed by Watson and Sottile (2010) reported themselves to be four times more inclined to cheat online and perceived their classmates as being five times more likely to cheat online than

face-to-face. LoShiavo and Shatz (2011) found that more than 70 percent of students cheated online.

Additionally, personality may play a role. For example, shy or introverted students may believe—again, rightly or wrongly—that electronic communication provides greater anonymity during class discussions (Lee and Lee, 2006). Although many educators have emphasized that small class sizes and electronic records of student contributions to class discussions make participation imperative in online courses, there can be more subtle issues at work. Some students whose physical appearance makes them self-conscious about their ethnicity, poverty, gender-identity, disability, etc. may feel genuinely less intimidated online, and freer to enter into discussions in which their views will not be dismissed by others out of discrimination; there does not yet appear to be much research on this issue. Introverts may especially favor asynchronous discussions, which allow greater time for contemplation of questions prior to submitting responses (Ellis, 2003). And still other students may choose an online course rather than a traditional course because of a preference for a particular instructor. The greater popularity of some instructors is, of course, an age-old problem even within the realm of traditional education, but it may be exacerbated by the choice between online and conventional options. If, for example, more senior professors are teaching exclusively in the traditional mode while younger, more recently-degreed junior faculty who are more attuned to electronic communication are teaching online, students may perceive the latter as providing more up-to-date, relevant academic content. Thus, while online education brings new students into the community of higher education, for a variety of reasons it also induces cross-over, or migration, from traditional courses.

Although the data are rather ambiguous, both the macro and micro evidence suggests that the growth of online enrollment is a combination of new students and migrants. At the macro level, Table 1 gives aggregate enrollment data for the U.S. as compiled by Allen and Seaman (2011). Between the Fall of 2002 and the Fall of 2010, online enrollments grew by more than 4.5 million students, while overall enrollments at post-secondary institutions increased by only 3 million. By themselves, these data do not indicate what would have happened to enrollments in the

absence of online education, so any interpretation is somewhat speculative. There are, however, several possible explanations that could potentially account for these figures. At one extreme, it is theoretically possible that the equivalent of 1.5 million students from traditional courses exited higher education altogether during this period, while 4.5 million new students, who would not otherwise have attended college, entered online. In that scenario, colleges and universities collectively enrolled 4.5 million more students than they would have if online programs did not exist. At the other extreme, it is theoretically possible that 3 million new students enrolled in traditional programs during this eight-year period, while 4.5 million existing students who would otherwise have remained in traditional courses migrated to online education. In that scenario, online courses enhanced the academic opportunities for existing students who preferred electronic formats, but contributed nothing to overall enrollments in higher education.

Neither of these extreme cases seems particularly plausible, however, and the reality almost certainly lies somewhere between them. A more likely interpretation is that the excess of online enrollment growth over total enrollment growth represents migration, and the rest—the net expansion in overall enrollment—represents new student registrations attributable to online education. This assumes that enrollments in traditional courses would have remained constant from 2002 to 2010 had online education not been available. If that is the case, then 1.5 million students migrated from traditional to online courses, while 3 million new students, who would not otherwise have attended a college, entered higher education online during the period. Then roughly two-thirds of the increase in online registration from 2002 to 2010 represents overall enrollment growth, and one-third is attributable to migration between course delivery formats. (Note that estimates based on Table 1 refer exclusively to headcounts; information regarding online credit hour generation is not currently available.)

Somewhat different proportions are apparent in the most recent one-year period. From 2009 to 2010, online enrollment increased by roughly 563,000 students while overall enroll-

ment rose by approximately 116,000. If we again attribute the net growth in overall enrollment to distance education and the difference, roughly 447,000 students, to migration, then only about 20 percent of recent online growth represents new students, and 80 percent represents cross-over. The difference between the longer term (2002 through 2010) figures and the more recent (2009 to 2010) estimates might be attributed to the increasing saturation of the market with online programs. Indeed, as Allen and Seaman (2011, p. 11) note, “The slower rate of growth in the number of students taking at least one online course as compared to previous years may be the first sign that the upward rise in online enrollments is approaching a plateau.”

For an individual college or university, the concept of new enrollment refers to those students who would not otherwise have chosen courses at that particular institution if distance learning had not been an option. At the micro level, the published data are rather sparse; one of the few studies to investigate this question was undertaken by Cavanaugh (2005). Examining online enrollments at a single university, he found that 7.4 percent of students taking an online course lived in dormitories or apartments on the campus, and a total of 41 percent lived within 10 miles of the campus. Cavanaugh (2005, p. 7) notes, “It is entirely possible that online students living within ten miles of campus could have taken the courses on campus” in the traditional, face-to-face mode. Another 31 percent of the students were enrolled exclusively in online courses. With respect to these, Cavanaugh (2005, p. 7) remarks, “For the

TABLE 1
TOTAL AND ONLINE ENROLLMENT, 2002-2010*

Year	Total Enrollment	Increase	Online Enrollment	Increase
2002	16,611,710	NA	1,602,970	NA
2003	16,911,481	299,771	1,971,397	368,427
2004	17,272,043	360,562	2,329,783	358,386
2005	17,487,481	215,438	3,180,050	850,267
2006	17,758,872	271,391	3,488,381	308,331
2007	18,248,133	489,261	3,938,111	449,730
2008	19,102,811	854,678	4,606,353	668,242
2009	19,524,750	421,939	5,579,022	972,669
2010	19,641,140	116,390	6,142,280	563,258

*Source: Allen and Seaman (2011) and author's calculations.

31% of the online students who were taking only online courses and therefore avoided significant commutes, the argument against student cannibalization is stronger. It is likely that at least some of these students, who differ in many significant ways from the average student and live a significant distance from campus, would not have taken the courses if they were not available online." Similarly, Klaus and Changchit (2011) found that two-thirds of online students live within a 30 minute commute of their campus, and one-third reside more than 30 minutes away.

Thus, using the available micro and macro data as rough guides, it appears that between 20 and 60 percent of online enrollment represents a combination of new students and retained students who would otherwise have left the university for other institutions, while some 40 to 80 percent of online registrants simply migrated from traditional classrooms within the same university. At present, the existing research does not allow us to narrow these relatively wide ranges.

If class sizes and instructors' time were unlimited, then these percentages might not matter much in the financial model. Assuming sufficient demand, online classes could potentially be expanded until enough new students registered—even if they constituted a minority of those enrolled online—to break even. Indeed, compared to the physical classroom space that constrains the sizes of traditional classes, the virtual classroom may be less restrictive. However, online offerings are inherently more varied and complex, beginning with the decision to adopt the synchronous or asynchronous format. Additionally, instructors must devote vastly greater time and effort to each student in an online forum than in a face-to-face setting (Rothkopf, 2003). Indeed, because distance education may attract a broader population of students from around the world, there is a heightened need to recognize, respect, and accommodate a diversity of cultures, expectations, and learning styles. Differences in languages, religious beliefs, social classes, cultural values, traditions, and levels of economic prosperity may be reflected in different learning styles, communication patterns, needs for privacy, comfort levels with interaction, and even expectations regarding education itself, all of which can affect group dynamics and educational outcomes (Wang and Reeves, 2007; Liu, 2007; Edmundson, 2007). Thus, in the virtual realm there is a distinct need for careful course

design and delivery to bridge cultural gaps, reach students of various academic orientations, and overcome spatially separated learners' sense of isolation by building online communities. As Eberle and Childress (2007, p. 242) contend, in distance education, "Striving to accommodate differences in language, social values, and accustomed learning styles can oftentimes mean the difference between access to information and access to learning."

Consequently, numerous experts have strongly recommended that online class sizes be substantially smaller than most traditional classes. More than a decade ago, Boettcher (1998) and Howard (2002) suggested that online class sizes should be 20 or less. More recently, Kingma and Keefe (2006) found that student satisfaction with distance education was maximized in classes of 23 to 25 students, and faculty who responded to Orellana's (2009) survey reported that the optimal size for an online class to achieve the desired level of interaction was 16 to 19 students. Colwell and Jenks (2004) distinguished between undergraduate and graduate classes, finding the optimal size for the former to be up to 20, and the optimal size for the latter to be 12 to 15. Similarly, Qui's (2010) doctoral dissertation addressing online graduate courses determined the optimal size to be 13 to 15 students, while the graduate students and faculty surveyed by Reonieri (2006) generally considered 10 to 15 students to be a medium size for an online class, and believed that more than 15 students constitutes a large class. An excellent review of this literature was recently presented by Irby and Lara-Alecio (2012). Overall, the general consensus appears to be that the optimal size for an online class is around 20 students, with that number being slightly higher at the undergraduate level and somewhat lower at the graduate level. Given these small class sizes, it becomes imperative from the financial perspective to determine what proportion of the online enrollment represents new students, and what proportion represents migration.

MODEL

We next examine a specific question: if an online section of a course is to be offered, how many new students must it attract to break even? Alternatively, we may ask the equivalent question: what is the maximum number of traditional students that can be diverted to the online section, if the

course is to break even? Because some degree programs require more courses or credit hours than other programs, for convenience we model all costs and revenues on a per course basis.

At the simplest level, we may think of the net revenue to the university from a traditional classroom course (C) in the absence of an online alternative as

$$C = GT - S, \quad (1)$$

where G represents the number of students “on the ground”, T is the tuition per student, and S denotes the faculty salary, benefits, and other instructional and overhead expenses of the course. The nominal or stated tuition rates are often discounted through the financial aid process (especially at private nonprofit universities), so we define T as the average tuition rate net of discounts. In practice, the marginal cost of instruction from registering an additional student (such as the additional time devoted to grading) is customarily borne by the instructor until the class limit is reached, after which another section may be opened; we therefore treat S as fixed. For courses taught by adjunct faculty, calculating S may be relatively easy; in the case of full-time faculty members with research and service obligations, S may be more difficult to estimate. Nevertheless, apportioning faculty costs to a course is a necessary financial exercise; indeed, most institutions use some heuristic rule to establish minimum enrollment standards for traditional courses. Using the present notation, a non-negative net revenue for a traditional course in the absence of online alternatives requires $G \geq S/T$. Then, for example, if $S = \$11,000$ and $T = \$2,000$, a traditional course may be cancelled if fewer than 6 students register.

Now suppose that competing institutions offer similar courses online, providing greater convenience to students. Some of the home institution’s students may exit to attend elsewhere—either temporarily, with the intention of transferring the credits back to the home institution, or permanently. Revenue from the traditional course then becomes

$$C' = (G - X)T - S, \quad (2)$$

where C' denotes a revision to C and $X \geq 0$ denotes attrition. In an effort to retain its own students and attract new ones, the home institution may plan to offer its own online options.

There are, however, additional costs involved with distance education. These include the costs of hardware and course management software, expenses associated with the development of digital course materials and faculty development of online teaching skills, and the costs associated with regulatory compliance, technical assistance during the academic term (the semester, trimester, or quarter), enrollment management, and so forth. Publicity is also of special importance: if no funds are devoted to advertising and student recruitment, then only existing students will know that courses or programs are being placed online, ensuring that all online enrollment represents the cannibalization of students from traditional classes.

Accurately estimating the diverse expenses associated with moving to online formats can be a daunting challenge, to say nothing of actually managing the process. Several budgeting tools have been presented in the literature to assist with cost measurement (Jewett and Henderson, 2003; Gordon, et al., 2009; Caudill, 2009), and in recent years, a number of firms—both for-profit and non-profit—have emerged in the marketplace to sell online management services as a package to colleges and universities (Blumenstyk, 1999; Bleak, 2002; Paolucci and Gambesica, 2007). Contracting with an external vendor creates a wide array of new questions that must be resolved before a program is launched online, including the ownership of intellectual property and the privacy of student records, among others. Investigating a contract with an external vendor is, however, a convenient method for determining the additional expenses associated with placing a program online, and in a competitive market, different vendors should charge comparable fees for a particular package of services. Thus, whether the recruitment, enrollment management, technology support, compliance and other work is handled in-house or outsourced to a vendor, there will be additional costs to consider. Both fixed and variable costs of this sort may exist (Jewett and Henderson, 2003). The fixed cost, F , is independent of enrollment, and the variable cost increases with the number of students online; we let v denote the percentage of tuition revenue per student absorbed by variable costs. Thus, in addition to F per online section, the university incurs a variable cost of vT per student enrolled online.

We shall assume for simplicity that the tuition rate charged for an online course is the same as it is for a traditional course. As Paulson (2008) notes, this pricing practice is often followed by private universities, and is advocated by the Southern Regional Education Board.

From the evidence cited earlier, we assume that launching an online course entices N new students to enroll and induces M students from traditional sections to migrate to the online format within the university. Importantly, the students denoted by M would not have left the university in any event but elect to take the university's online course once it is offered. Student-athletes, for example, who wish to continue attending the university and playing for its sports teams may find an asynchronous online section more convenient than a face-to-face section.

The online section may also prevent some attrition and perhaps return a fraction of the students who previously exited the university; we denote these by ρX . Prospectively, ρX may be considered students who would otherwise exit but who have been retained by virtue of launching an online offering. However, students who remain on the ground (G) and those who migrate within the institution (M) also represent retention in the more general sense. To distinguish the retention that is specifically attributable to the online offering, we refer to ρX as students who have already exited and returned.

The net revenue from the distance education section, D , is then

$$D = (N + M + \rho X)(1 - v)T - F - S. \quad (3)$$

The cost function implied by equation (3) is linear in the number of students per section. Although nonlinear functions could be modeled to generate parabolic average cost curves, the variable costs paid to external vendors are, in practice, more commonly linear. For consistency with the literature on optimal class size, we further assume that the online section has a lower maximum enrollment, or seat count, than the traditional section. Writing L as the limit of online enrollment, we have $N + M + \rho X \leq L$. If this constraint is binding—that is, if the online section fills—then $N + M + \rho X = L$. Generally, this limit will be sufficiently low that not all of the students from the traditional class can migrate ($L < G$), so the traditional section will operate simultaneously with the online section, imply-

ing the use of two instructors. Alternatively, if a course is offered exclusively online, then students from traditional programs who wish or need to take the course have no choice but to migrate; $L < G$ would still imply the use of multiple instructors. Then, modifying C once more, the net revenue from the traditional classroom section becomes

$$C'' = (G - X - M)T - S. \quad (4)$$

In monetary terms, the net revenue from operating both the traditional and online sections is now

$$B = C'' + D. \quad (5)$$

However, the relevant economic question is not whether $B \geq 0$, but whether $B \geq C'$. That is, the net revenue from a traditional, on-ground operation alone (when competitors offer online options) represents the opportunity cost of moving to a mix of traditional and online offerings. Thus, in economic terms the relevant calculation is

$$E = B - C' = [(N + \rho X)(1 - v) - vM]T - (F + S). \quad (6)$$

If $E > 0$, the establishment of the online section enhances the institution's net revenue. To simplify equation (5) without the loss of generality, we may measure $F + S$ as a multiple of the tuition rate; that is, we let $F + S = \theta T$. Then if $N + M + \rho X = L$, we get

$$E = [(N + \rho X) - vL]T - \theta T. \quad (7)$$

Breaking even requires $E = 0$, which implies

$$N + \rho X = \theta + vL. \quad (8)$$

Equation (8) identifies the minimum number of new and returning students who must be enrolled in the online section in order to make it economically viable. If we let n denote the fraction of online students who represent new and returning enrollment, so that $n = (N + \rho X)/L$, then the breakeven point can be defined in terms of this proportion; dividing equation (8) by L yields

$$n = v + (\theta/L). \quad (9)$$

Equivalently, we can obtain the breakeven point in terms of the allowable proportion of online students who have migrated from traditional classes within the institution. Writing $m = M/L$, we get the breakeven point as

$$m = (1 - v) - (\theta/L). \quad (10)$$

According to equation (10), if the cross-over from traditional courses or sections represent a greater proportion of online students than m , then the online section has actually reduced net revenue.

As an example, consider again a university whose tuition for a course is \$2,000, and let the faculty member's salary and benefits and related overhead amount to \$11,000 per course. Suppose the university currently offers this course with an enrollment of 35 students, so the gross tuition revenue is \$70,000 and net revenue after payroll and other expenses is \$59,000. Now consider what happens if the university decides to put a section of this course online (presumably as part of a larger program going digital) with a course enrollment cap of $L = 20$. Let the variable cost be twenty percent of tuition revenue, and let the fixed cost be $F = \$1,000$. Then $v = 0.20$ and $\vartheta = 12,000/2,000 = 6$. Assuming 20 students actually take the course online, the breakeven point in equation (9) occurs at $n = 1/2$; that is, at least half of the online students must be new or returning to the university in order for the course to break even. To see this explicitly, note that with 20 students online (10 of whom are new or returning and 10 of whom migrated across formats) and 25 still taking the course in the traditional mode, net revenue from the two sections of the course will be as follows.

Traditional:	$(25 \times 2,000) - 11,000 =$	39,000
Online:	$(20 \times 2,000)(.80) - 11,000 - 1,000 =$	20,000
Total:		59,000

Financially, this is exactly the same as if the online section was not offered; hence, the project breaks even. Alternatively, if more than half of the online students are migrants from the traditional course section, then the net revenue will be lower than if the university only ran the traditional course.

Table 2 generalizes this example for various values of v and θ , holding the online enrollment limit at $L = 20$. As a visual marker, the bold entries running diagonally identify instances in which breaking even requires, as in the example above, 50 percent of the online students to be new or returning registrants to the institution. Naturally, as fixed costs, faculty salaries, and benefits increase relative to tuition, and/or variable costs rise (that is, the institution moves eastward or

southward on the table), even higher proportions of online registrants must be new or returning students in order for the venture to break even.

TABLE 2
NEW STUDENTS, AS A PROPORTION OF
ONLINE ENROLLMENT, NEEDED TO
BREAK EVEN*

	θ						
v	3	4	5	6	7	8	9
.05	.20	.25	.30	.35	.40	.45	.50
.10	.25	.30	.35	.40	.45	.50	.55
.15	.30	.35	.40	.45	.50	.55	.60
.20	.35	.40	.45	.50	.55	.60	.65
.25	.40	.45	.50	.55	.60	.65	.70
.30	.45	.50	.55	.60	.65	.70	.75
.35	.50	.55	.60	.65	.70	.75	.80

* The notation θ denotes faculty salary, benefits, and other fixed costs of the online course as a multiple of the tuition for a single student; v denotes variable costs. The table assumes an online enrollment cap of 20.

It is also important to observe what happens if the online enrollment limit (L) is increased. Assuming the online section fills, the variable cost of the online section increases with L . Thus, from equations (8) and (9), N rises and n falls:

the requisite number of new and returning students required to break even increases, though the requisite proportion declines, and from (10), the allowable proportion of migrants increases. If, for example, the online class limit is set at 30 students, then all else being constant in the example above, at least 12 students (or 40 percent) must be new or returning to the institution in order to break even; up to 18 students (or 60 percent of the online enrollment) may represent migration from traditional courses.

CONCLUSION

Providing courses with alternative delivery modes to enhance the educational opportunities and experiences of students is in itself a worthwhile objective, and some universities may elect to do so even at a financial loss. Indeed, equipping students to utilize educational technology

and reaching underserved populations may be important components of the university's overall mission. If, however, the objective of going virtual is to strengthen the financial position of the institution, then the revenues and costs must be carefully scrutinized. Relatively small class sizes are widely recommended for online courses, and the available evidence suggests that at little as 20 percent and probably not more than 60 percent of online registration represents real enrollment growth. Online programs may therefore operate on very slim margins.

The present paper offers a simple economic model for determining the break-even point. To utilize the model, a university needs to establish the enrollment limit that ensures pedagogical quality for an online course; identify the payroll expenses per course; determine the additional fixed and variable costs of an online offering (which may be ascertained by consultation with an external vendor); and forecast the percentage of online students who will represent new or returning registrants as opposed to those migrating from traditional courses within the university. Equipped with such data, the economic feasibility of going online can be determined. Clearly, online offerings are more economically viable when the costs are low relative to tuition and cross-over from traditional courses is limited.

Naturally, the model itself could be elaborated in various ways. For example, the model has implicitly assumed equal course completion rates (or equivalently, equal withdrawal rates) between online and traditional courses. Several studies have suggested, however, that there are substantially higher withdrawal and dropout rates—up to 80 percent—for online education (Gleason, 2004; Tyler-Smith, 2006); this problem may be especially severe among low-income and underprepared students (Jaggars, 2011). Thus, the present model may somewhat underestimate the proportion of new students required for online courses to break even; future extensions of the model may benefit from explicitly recognizing this difference. In addition, differential faculty pay scales, or differential tuition rates for online and traditional courses could be incorporated in future work. Indeed, public universities have historically charged lower tuition rates to in-state residents than to out-of-state students. Applying this practice to distance education might mean charging a premium comparable to out-of-state tuition for the convenience of learning online;

such a practice would certainly discourage internal migration but may also conflict with the goals of recruitment, retention, and expanding educational options for students.

This analysis also highlights the need for more detailed empirical research on the extent to which online courses attract new students, prevent attrition by retaining existing students who might otherwise leave the university, and induce cross-over by students who would otherwise remain in traditional courses at the institution. Ideally, such data should not be limited to headcounts, but would also measure credit-hour generation. Here, as in other contexts, better information is an essential element of improved decision-making.

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CONTENT ANALYSIS OF A COMPUTER-BASED FACULTY ACTIVITY REPOSITORY

Lori Baker-Eveleth

Associate Professor of Information Systems
Department of Business
University of Idaho
Moscow, Idaho

Robert W. Stone

Professor of Accounting & Information Systems
Department of Accounting
University of Idaho
Moscow, Idaho

ABSTRACT

The research presents an analysis of faculty opinions regarding the introduction of a new computer-based faculty activity repository (FAR) in a university setting. The qualitative study employs content analysis to better understand the phenomenon underlying these faculty opinions and to augment the findings from a quantitative study.

A web-based questionnaire was distributed to faculty of a medium-sized university in the western United States. A total of 154 faculty responded and 99 of the respondents provided written comments and opinions about the FAR. A content analysis was performed on these 99 comments.

Six themes and several subthemes regarding the FAR were identified in the content analysis. These six themes were productivity, usability, security, implementation, management and structure of the organization, and users' attitudes. These themes and subthemes were discussed in the specific context of using the FAR as well as the general context of a computer system's usability, development, management, and introduction in the organization. In addition, a model for future research is proposed based on these findings.

INTRODUCTION

The pace and extent of technological developments in recent decades have influenced society in many ways. These developments have produced increased dependence on information technology in organizations and society. For example, information technologies enable business and organizational processes by creating efficiencies in business practices (Lee, Chu, and Tseng, 2009). Typically, the intention of implementing such computer technology is to automate routine and repetitive tasks allowing an employee time for more analytical, decision-making focused tasks. Often, as a result of these applications, employees are expected to use computers and the Internet daily as an essential part of their work. Although there is an expectation for computer and Internet use to improve the productivity of

employees, implementing a new technology does not automatically translate into improved employee productivity and perceptions of benefit.

Technology is successful at automating tasks only if it is appropriately used by the employee, if use is volitional. If system use is nonvolitional, employees may still have discretion regarding the extent or degree of innovative use of the system. Many factors influence employees' perceptions of successful acceptance of technology (Davis, 2001). Acceptance of technology impacts employees' degree of system use as well as perceptions of the technology's usefulness and performance impacts. For example, employees' belief that they can competently use technology to enhance their work performance, perceptions of ease of use and usefulness of the technology, and satisfaction with the technology can influence their inten-

tions to use the technology in the future (Stone and Henry, 1998).

A variety of technologies aimed at improving performance has been introduced to higher education. Some of these technologies are instructional (e.g., smart boards, projection displays, voting mechanisms) and others administrative in nature (e.g., accessing travel and grant forms, electronic document and grades submissions). One such administrative application of technology is a system providing for the development, storage, and retrieval of documents and reports related to faculty activities and accomplishments. Such a technology application introduced in a university environment is the focus of this research.

The specific technology application studied is a Faculty Activity Repository (FAR; actual commercial product name redacted). The FAR allows faculty to enter performance activities in a computer-based system that is a repository for these data. With appropriate permissions, administrators can combine entered data across faculty to produce predetermined reports such as department, college, and university research reports and class loads by the individual faculty, department, and college.

The project producing this research began as a quantitative effort to examine faculty acceptance of the FAR. The underlying theoretical model was the Technology Acceptance Model (TAM). TAM provides theoretical linkages regarding users' acceptance of technology based, in part, on their perceptions of the usefulness and ease of the technology's use. The data were collected using a questionnaire consisting of a series of close-ended questions designed to measure the constructs in the TAM. Also included on the questionnaire was an open-ended question to allow respondents to discuss their perceptions of the FAR. Based on the quantitative results, we found that perceived ease of use and usefulness of the FAR were key to the acceptance of the FAR. However, TAM does not provide a description of the issues or reasons why a system is not perceived to be easy to use or useful. Furthermore, over sixty percent of the questionnaire respondents answered the open-end question regarding the FAR. Many of these comments addressed usability and ease of use of the FAR. These comments gave rise to the qualitative study presented here which attempts to provide insights regarding the mechanisms un-

derlying respondents' perceived ease of use and usefulness of the FAR. Developing these insights regarding the FAR is the focus of the research presented here.

The research presented below uses the inductive approach of content analysis. The employed methodology is presented first followed by the content analysis findings. Using the research findings, we next present the research implications followed by potential directions for future, theoretically-based research. The manuscript ends with conclusions.

METHODOLOGY

Data were collected via a questionnaire regarding the faculty attitudes and perceptions of using the FAR. The questionnaire items were refined over a series of iterations and entered into an Internet-based survey tool called Websurveyor. Websurveyor distributed the URL and an invitation to complete the questionnaire by way of a faculty listserv at a medium-sized university in the western United States. We distributed the questionnaire in the spring semester after the initial implementation of the FAR and while faculty were expected to use the FAR to prepare their end-of-year performance reviews. A total of 866 people received the invitation email and 154 respondents fully completed the questionnaire producing a 17.78% response rate.

Twenty-seven percent of the respondents were female and 73% were male. Thirty-one percent of the respondents were in the 50 to 54 year-old age bracket with another 20% in the 55 to 59 year-old age group. By job classification, 86% of the respondents held tenure-track faculty positions. In terms of college affiliation, the largest group of respondents, 26%, were in the College of Letters and Social Sciences. Finally, 58% of the respondents reported receiving no training in the use of the FAR. All these demographics are displayed in Table 1.

Ninety-nine of the 154 respondents used an open-ended comment box on the questionnaire to provide detailed comments regarding the FAR. These comments presented an interesting opportunity to better understand the FAR and its implementation from the perspectives of these respondents. These comments were analyzed using the grounded theory approach (Charmaz, 2000; Glaser and Strauss, 1967; Locke, 2001;

TABLE 1
THE DEMOGRAPHICS OF THE RESPONDENTS

Gender		
Gender Category	Frequency	Percentage
Female	41	27%
Male	109	73%
Total	150	100%
Age		
Age Category	Frequency	Percentage
25-29 years	2	1%
30-34 years	5	3%
35-39 years	14	9%
40-44 years	19	13%
45-49 years	19	13%
50-54 years	46	31%
55-59 years	30	20%
60 years and older	15	10%
Total	150	100%
Job Classification		
Job Category	Frequency	Percentage
Tenure-Track Faculty	132	86%
Non-Tenure-Track Faculty	6	4%
Instructor	4	3%
Administrator	11	7%
Total	153	100%
College Affiliation		
College Affiliation Category	Frequency	Percentage
Agriculture and Life Sciences	25	16%
Business and Economics	16	10%
Education	10	6%
Engineering	17	11%
Law	2	1%
Letters, Arts, and Social Sciences	40	26%
Natural Resources	11	7%
Sciences	16	10%
Library	10	6%
Art and Architecture	5	3%
Other	2	1%
Total (not 100% due to rounding)	154	97%
Received Training in the use of FAR		
Category	Frequency	Percentage
No Training Received	86	58%
Training Received	64	42%
Total	150	100%

Strauss and Corbin, 1990). From the analysis, themes and subthemes in the respondent comments were identified and are discussed below.

Independent raters review the comments or observations identifying themes based on keywords or concepts. This is often called an open coding procedure (Strauss and Corbin, 1990). The raters then meet to agree upon common keywords or concepts. From these keywords and concepts the raters identify themes and subthemes within the

comments and observations. Within the FAR context, themes and subthemes should provide insights into the reasons and issues surrounding the adoption and use of the FAR. Furthermore, these reasons and issues, and their interrelationships may provide directions for future, theory-driven research. This is referred to as a grounded theory approach (Glaser and Strauss, 1967).

The framework for grounded theory building focuses on the concepts derived from the open cod-

ing procedure. Encircled in these concepts or core categories are themes, subthemes, and properties which manifested in the contextual conditions, interactions, and consequences of developing, introducing, and using the FAR. The contextual conditions can be viewed from a macro or micro view. The interactions are correlated with the concepts and represent the phenomena signified by Strauss and Corbin (1990) as axial coding. Whether purposeful or routine, the interactions influence the shape of the concept. These interactions evolve over time as people interact, define, and then establish meaning based on the environment (Miller and Fredericks, 1999). Consequences result from the interactions in response to macro or micro conditions. These concepts do not occur in a linear manner but in a much more circuitous way. Therefore, this study sought to develop a grounded theory of the users' perceptions regarding implementation and use of the FAR through a process of open coding and theme development.

FINDINGS

We identified six categories or themes as well as a number of subthemes. The themes were productivity, usability, security, implementation, management and structure of organization, and users' attitudes. The research details for each theme, its properties and sub-themes are presented below.

PRODUCTIVITY

Business managers measure success of an employee by how productive he or she is at work. The productivity theme that emerged from the use of the FAR was defined as time spent and outcome from the time spent on a FAR task. In particular, the productivity theme focused more on the time spent on the FAR task and the time spent away from other, non-FAR tasks. Two subthemes further categorized the productivity theme as **time spent on a FAR task** and **time away from teaching and research**.

The **time spent on a FAR task** was repeated in the data in different ways. Responding faculty felt they spent an inordinate amount of time on the task of entering data in the FAR:

I have used FAR and it is really not that difficult except it takes a bunch of time.

FAR is designed to generate a measure-

ment of our productivity. In reality, however, is that FAR is so cumbersome to use, especially when it comes to entering publication information, that it reduces our productivity by sucking up our valuable time.

Additionally, faculty commented on how the FAR took longer to complete specific, required tasks:

Using FAR increased the amount of time needed to prepare my annual report by several hours. I found some of the questions that were asked to be insulting and a real waste of time (and I was in favor of using a system such as this before I was confronted with FAR).

Others commented on the time on task and how it relates to use of the FAR in the future:

I have no use for it and could spend my time being much more productive doing my real job if I wasn't wasting this time with something that I will never use.

We were told we could cut and paste from our vita, but that would take more time than doing it from scratch. It's a waste of faculty time!

The use of faculty time to input data into FAR is both onerous and unnecessary.

The amount of time initially spent completing tasks on a system will be longer because of the initial learning curve. Hopefully, the next time employees use the system the less time they should spend on the task. Interestingly, faculty did not recognize the future use of the FAR. Many faculty felt they would not use the FAR again; therefore, it wasted time inputting the data. It is possible that previous faculty experience with systems tainted their view of the FAR. If past systems were time consuming and then not used effectively, the attitude toward the FAR would be affected.

The second subtheme related to productivity was **time away from teaching and research**. Depending on the focus of the university or college, faculty time is divided appropriately by percentages of research and teaching time. Administrative tasks are not accounted for in the percentages and are considered to be added to the top of a

faculty's primary focus of research and teaching. The time spent doing administrative tasks meant that time used to be a productive researcher or effective teacher would be reduced.

The diversion of time from serving students weakens performance of teaching, service, and education, and will ultimately weaken both the university's ability to receive university students and maintain accreditation.

FAR seems yet one more thing in the way of time spent teaching. So far, the university's introduction to it has been insufficient to belay that idea.

My job is to teach and perform research. There are always some extra tasks (committee service and such) that must get done too but they must be subordinate to my primary tasks of teaching and research. There is a disturbing amount of "task creep" increasing the number of new tasks faculty must perform to compete with their primary tasks. FAR is part of this trend.

I would certainly rather spend my time becoming a better teacher or doing more research than populating a database using a cumbersome interface (i.e., can't just cut and paste). I can't believe the university feels this is the best use of my time.

This is an important theme to consider in different environments, not just in a university setting. If an employee is asked to take on additional tasks, does he or she determine the priority of the tasks or does a supervisor? Are there additional resources to help in performing the tasks (i.e., overtime pay or additional clerks)? Although administrative tasks may seem like "small stuff" they can eat away at the time during a day. For example, twenty years ago, faculty did not spend time sending or responding to emails of students. Now, composing and writing emails is a significant component of a faculty's day. Since many students use email instead of coming into office hours, the time spent on emails can be categorized as teaching. Email is also an effective collaborative tool for research. Entering data into

the FAR did not fit into either teaching or research activities.

USABILITY

Another theme affecting the perception of FAR productivity was the usability of the FAR. The amount of effort expended to use a system determines the usability (Davis, 1989; Davis et al., 1989; Venkatesh and Davis, 1996). Closely tied to usability is the perceived usefulness of the system. These two constructs from the technology acceptance model influence the acceptance of technology (Davis, 1989; Venkatesh and Davis, 1996). If a system is easy to use, users will be more likely to perceive its usefulness. In the two examples provided below, time spent on the FAR was linked to how usable the system was.

I spent more time figuring out which category data was to be entered in and editing than anything else. I did not find the system user friendly or adaptable for the various fields our faculty are involved in—especially research.

The system is slow—it took too long to add a new co-author to a paper, to switch from one menu to another, to return to a menu after seeing that data was entered incorrectly. Every time I clicked something that would add a entry to the screen, I had to be careful and wait until the screen was refreshed and redrawn—slowly.

Many people mentioned the number of fields that have to be populated in the FAR and identified two issues: do all the fields have to be filled in and for what purpose? why can't the system be linked to the existing database to fill in the fields?

there are so many fields to populate I found myself asking—is this something my administrators even care about—because finding the data will take too much time

Additionally, faculty respondents mentioned the formatting of the text and how inputting the data was difficult and inflexible. The vocabulary used for the categories and the organization of the menu and navigation can also influence how the data are entered "*When I enter professional development, for example, the items appear in an*

entirely different category.” Some users couldn’t figure out which category the data fit in “*We don’t fit in all the pull-downs, so we end up picking other all the time and some reports and many screens don’t make sense.*” In certain disciplines, research information is displayed in a specific way. If the FAR doesn’t allow data to be entered as expected in the discipline’s format, the user must decide what does and doesn’t get included. This can be problematic when accrediting committees look at a college’s research history. Some information may not show as intended, or inappropriate information may be displayed.

The main problem I still have is that I am unable to enter the names of authors on publications as they actually appear on the paper. Somewhere in the program it is decided how these names should be written and that cannot be changed as far as I can tell

Most respondents indicated that use of the FAR was problematic. Interestingly, many of these faculty commented that the idea behind the FAR was useful, but because of “bugs” in the FAR, the full usefulness was not realized.

SECURITY

The age of the Internet has allowed more data to be collected and stored about users, employees, and customers. Storing data is a security issue for many organizations. The U.S. Army has moved from storing data on portable USB thumb drives to storing them on network spaces to reduce the corruption of data from viruses on shared devices (Matthews, 2009). In the last few years several companies have accidentally released the names, emails, or Social Security numbers of customers or employees (Andrews, 2009). Often, the greatest risk comes from inside the organization rather than from hackers trying to access the information (Swartz, 2007). How the data are stored and who has access to the data reflect an organization’s integrity. We identified two important perspectives within the security theme: **the risk to stored data** and **privacy issues**.

Storing of data has become inexpensive due to lowering costs in hardware. With virtually unlimited storage space available, some data are being kept for long periods of time. Embedded in the storage issue is the type of data being collected.

I do NOT believe that the THE UNIVERSITY is capable of protecting this sensitive information and do NOT want the THE UNIVERSITY to have it.

Additionally, once the data have been collected, the question is posed as to who has the rights to the information. Is the information stored at the university or in a third-party location? If the data are stored by a third-party, how secure are the data? If the company storing the data goes bankrupt, how are the data disposed (Spring, 2009)?

having the university maintain personally identifiable information in an external company’s servers and databases, and whether FAR is using a third-party commercial web hosting company

It is difficult to tell whether the user feels that a third-party or the university would put the data at greater risk. These are important to consider in the development of future systems. The specific types of data needed to make the FAR useful to the university are most likely the type of information about which users are concerned.

I also think the possibility for misuse of the information or the mishandling of the information is easily foreseeable.

First, the FAR system is asking questions that have no relevance, nor cannot be used, for employee review purposes. These include: Gender, Ethnicity, US Citizen or Permanent Resident, and Year of Birth. There should be an indication if these are optional or voluntary.

has numerous flaws both technical and substantive, and is open to misuse, abuse and the input of fictional results, leading to likely legal challenges against the university if it is used for substantive purpose

Much of the data requested of the FAR system also exist in other university systems. Unfortunately, having no connection between these systems also leads to problems with data entry. Some questions may be phrased differently causing confusion and inaccuracies across the two systems leading to lack of data integrity. Certainly where and how the data are stored as well as the type of data collected greatly influences the use of the system.

IMPLEMENTATION

Implementing a system into an organization is as important as the development process. Many factors that make a system successful are perception-based from the user such as the flow of information between the developers and the users, trust and shared expectations, attitudes of the user, and value to the users (Ginzberg, 1981; Rai et al., 2009). Implementation in this context is defined as the method used to introduce the FAR to users and the assistance provided to aid in learning FAR and its use. Two subthemes further categorized the implementation theme as administrative support and training.

The implementation method for the FAR had meaningful impacts on users' perceptions of the FAR.

My problem is not so much with the program itself, but with the implementation of it by administration; only when an uproar was raised by faculty did the admin back off on the rigid deadlines for completion of CV;

A key to successful implementation of a new system is the provision of quality training to use the system (Alvarez, 2003; Sykes et al., 2009). Adequate training provides the basis for successful initial experiences using the system, which impact positively user perceptions of the system. A common perspective was that no training was provided for the FAR or if there was training, it was not adequate.

I received no specific training on how to use the resource merely an informational seminar on its benefits and adoption by the University.

Training for faculty has been sporadic and limited to a few faculty on campus.

Extremely poor training scheduled for off-campus people. If this is going to be used, they need people at the various off-campus locations to advise on how to run FAR.

FAR isn't too bad once you get into one part of it and understand how it works. I think overall it will be a useful tool. Inadequate training was the most frustrating thing for me.

Beyond initially learning how to use the new system, on-going support for the system and its perceptions of availability are important in influencing users' perceptions regarding the system (Kim and Kankanhalli, 2009). Such support may take many forms: clerical help, a facility to answer users' questions, and resources to manage the continuing use of the system.

If we are stuck with this program then let us give the information to a secretary to enter for us. Surely it isn't a good use of our time to spend gabillion hours doing what takes less than half the time to do in MSWord.

Administrators in my college were very helpful, however, in getting staff to take my materials and enter them into FAR.

One person per college should be in charge of managing FAR; faculty should not spend time inputting info into it.

Providing support to help use and add data to the FAR would probably modify faculty's perceptions. Training the user is a long term strategy for successful implementation and adoption of the system (Shuit, 2004).

MANAGEMENT AND STRUCTURE OF ORGANIZATION

The management and structure of the organization may greatly influence users' perceptions of a new system. As indicated by Goodhue and Thompson (1995), system effectiveness and user perceptions of it are influenced by the "fit" between the task to be performed, the technology used as well as the organization's and user's characteristics. Within this theme of management and organization structure, in the context of the FAR, there are two subthemes: the **top-down attitude of the university administration** and the **usefulness for administrators not faculty**.

The top-down attitude was expressed by users in terms of being told that they would be required to use the FAR with little or no encouragement regarding its benefits or importance. When users are a group of professionals accustomed to possessing significant job and work autonomy, such as university faculty, a top-down managerial attitude has particularly strong impacts on these users' perceptions of the FAR.

No reasons were given for encouraging FAR's use except "it will be done or no evaluation." Generally this is another top-down directive without discussion why it might be important.

FAR is a good example of a "top-down" approach to management of an administration that is completely out of touch with its workers and with good common sense, and administration that punishes productivity.

The "compelling" need for why introduction of FAR was never communicated, nor was there a real showing of benefits that FAR would provide. They simply said you WILL use FAR to enter your "performance" data.

Being convinced of the need for the new system as opposed to being told to use the system, it is important how a new system is "sold". This is particularly true when the targeted user groups are professionals accustomed to significant work autonomy. The usefulness of a new system impacts users' perceptions of the system (Guriting and Ndubisi, 2006; Page-Thomas, 2006;). These perceptions manifest themselves more clearly if the new system is volitional in its use as opposed to nonvolition (Stone and Henry, 1998). Regardless of the degree of volitional use, usefulness or outcome expectation does indeed impact these perceptions (Hasan, 2007; Venkatesh and Davis, 1996). In the case of the FAR, the perspective of usefulness is from that of the faculty member compared to the usefulness or benefit derived by the university administration.

Possibly useful for administrative tasks, but has no significant use in instruction.

This may be something that is beneficial for administrators to look at faculty statistics and compare to other universities, but it does not help faculty do the things they are hired to do (i.e., conduct research, teach, publish, and obtain grant funding).

This does nothing for faculty that I can see.

Bottom line in my opinion: Only the administration benefit since less time

is needed to compile data. No benefit to faculty, in fact the opposite, since we need to take time to input the data (which most of us already have done in our updated CV).

Users' evaluation of a system's usefulness, particularly in the context of compared to another groups' gain, significantly influences users' perceptions of the system. This is particularly acute when the reference group is viewed as a rival or having managerial authority with regard to the users.

USERS' ATTITUDES

Users' attitudes toward a new technology system greatly influence how they interact and use the system. Researchers have used various approaches to link users' attitudes to information technology use. Examples include the technology acceptance model in all of its versions and social cognitive theory (Davis et al., 1989; Sykes et al., 2009; Venkatesh and Davis, 1996). Regardless of the theoretical foundations, users' attitudes toward the new technology influence their willingness to use it as well as to experiment with the system beyond the minimum requirements for the users' work.

The introduction and use of the FAR produced feelings of frustration among the faculty. The influence of these faculty attitudes are difficult to separate from the productivity theme. These difficulties are illustrated below.

FAR is extremely frustrating to use.

FAR is one of the worst time sinks for the worker ever imagined. It requires hours upon hours entering tedious information in formats designed to make me frustrated at their user-surliness and slowness. The irony of the whole situation is that, the more productive a faculty member is, the more FAR punishes him or her with frustration and time waste.

...People are frustrated, morale has been lowered, and no one seems to know what the benefit is. Maybe someone should explain that to us.

This system is very confusing and frus-

trating - it is difficult to know where to put what and how to classify various segments. It would really help if we could get some training and if sections/areas were more clear in the instructions.

Those who used the FAR also expressed an attitude of being uncomfortable or fearful of using the FAR. This attitude appears based in the idea that the data provided in the FAR would be used to evaluate faculty performance. More specifically, this attitude is that the FAR is not sufficiently reliable to record and provide such important data to administrators and that the FAR does not allow faculty to provide all the needed data to actually represent their performance.

I feel uncomfortable having any decisions made about my career or any university decisions made in general based on this unreliable software product.

I frankly fear the misuse by administrators of data generated by such a system (Coming on the heels of (an administration led program review) fiasco of a couple years ago)... it's hardly surprising that many people would be apprehensive about something that reduces individual performances and program values to numbers.

I hate FAR. I do NOT believe that my contribution to THE UNIVERSITY and the students can be measured by numbers alone.

Attitudes toward a system influence how users perceive the value of a system and determine if they further adopt the system in the future. The majority of system users had a negative attitude toward the system. The previous themes of productivity, usability, security, implementation, and management and structure of the organization further exacerbate the negative attitudes. All of these themes and subthemes are summarized in Table 2.

THEORETICAL DEVELOPMENT

Many implications appear important to developing a theory based on the generalization of the faculty comments within the discussed themes and subthemes. First, users' adoption, acceptance, and use of a new technology application appear greatly influenced by the users' perceptions of its usefulness. This perceived usefulness, or what is sometimes called outcome expectancy, was indicated in the comments contained in the productivity theme with subthemes of "time spent on FAR task" and "time away from teaching and research" and the management and structure of organization subtheme of "useful

TABLE 2
THEMES AND SUBTHEMES

Theme	Definition	Subthemes
Productivity	Time spent and outcome from the time spent on a task	Time spent on a FAR task
		Time away from teaching & research
Usability	Amount of effort expended to use a system	
Security	Protection of stored data and maintenance of data integrity	Risk to stored data
		Privacy violation
Implementation	Introduction of the system to users and the assistance provided to aid learning	Administration support
		Training
Management and Structure of Organization	fit between the task to be performed, the technology used as well as the organization's and user's characteristics	Top-down attitude of university administration
		Useful for administrators not faculty
Users' Attitude	Interaction with and attitude toward new system	

for administrators not faculty.” The technology acceptance model (Davis et al. 1989; Sykes et al. 2009; Venkatesh and Davis 1996) provides a structure in which to expand the theory. For this particular technology application the themes and subthemes appear in a negative context, and do illustrate the importance of perceived usefulness or outcome expectancy.

A second implication from the study is that security of a new technology application is a concern to users. From the respondents’ comments regarding the FAR, users are concerned about the “risk to stored data” in the application and the potential for a “privacy violation.” These security concerns appear to be important to the users’ adoption, acceptance, and use of new technology. Such concerns may well be at least partially influenced by the increased networked world in which we live and work. Inclusion of security into the model addresses the ever increasing digitalization of data and how it is stored and who has access to it. This addition is also an important component to address in the acceptance of technology. There are also implications for the design of technology applications from these respondents’ comments.

The usability of the technology application impacts respondents in terms of the quality of the “menu system and navigation.” Usability or ease of system use appears to impact users’ perceptions of a new technology application and its use. In addition to usability is how the conversion from the old technology to the corresponding new one is important to users. The conversion to a new technology depends on its implementation process and management support. In terms of implementation, “administrative support” for the new technology and the process to introduce the new technology as well as the “training” available to users are important to users and their perceptions of the new technology. From the respondents’ comments, management and structure of the organization influences respondents’ orientation to the new technology. This structure is expressed that the administration has a “top-down attitude” and that the new software application is “useful to administrators and not the faculty.” Users’ perceptions regarding senior managers’ attitude toward the new technology and its conversions plays a key role. For example, if users’ view management as forcing the new technology on them or that the new technology is geared to

benefit managers rather than users, users’ perceptions of the technology will be impacted.

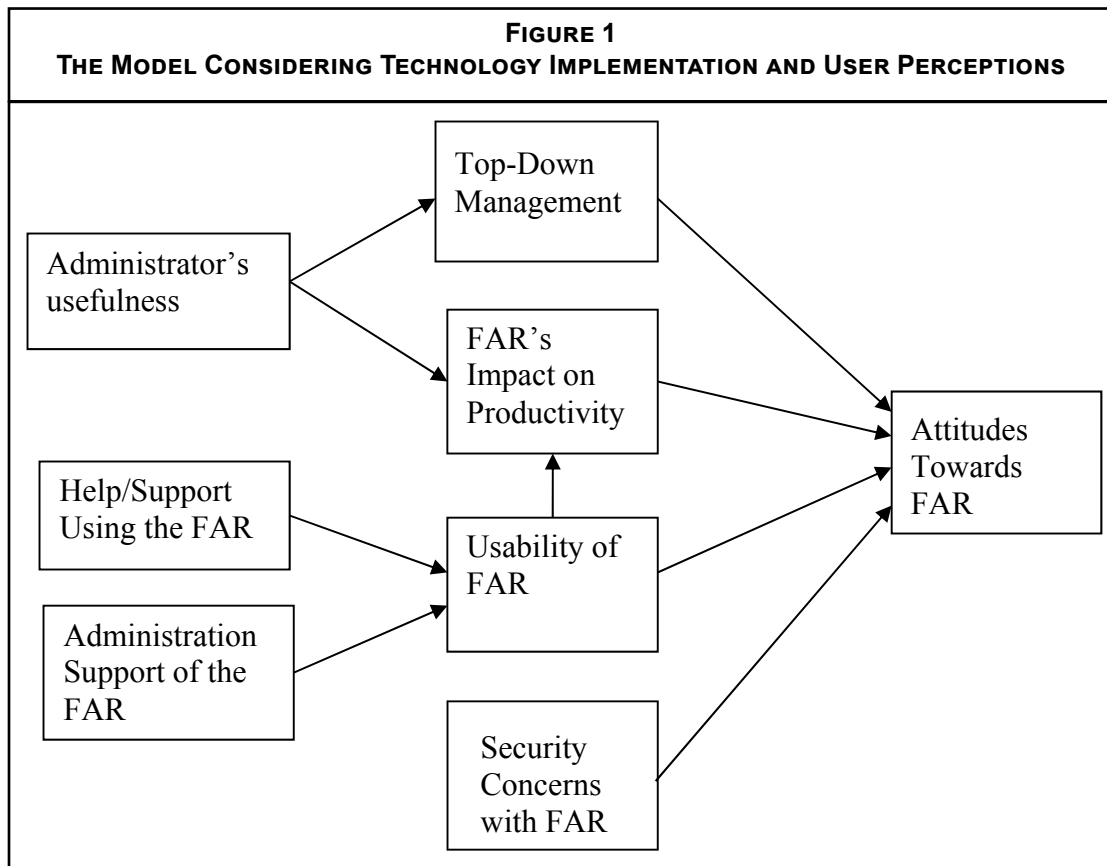
The final implication from the research is in regard to users’ attitudes. Among the respondents, subthemes regarding their attitudes with respect to the new technology emerged. These subthemes are that the new system is “frustrating” and that respondents are “uncomfortable or fearful” regarding how the data entered into the FAR will be used. These attitudes have a variety of impacts on users, their use of the new technology, and their job performance.

The development of a model grounded in this research emerged from the comments, themes and subthemes. The interrelationships among the variables can be explored in a model such as the one illustrated in Figure 1 (The Model Considering Technology Implementation and User Perceptions). This model provides a direction for future research regarding the mechanisms or the “ways” in the acceptance and implementation of new technology applications.

The model proposes that respondent’s attitudes towards the FAR are directly impacted by four variables: The top-down management of the technology, the FAR’s impact on productivity, the usability of the FAR, and security concerns with the FAR. The attitude that FAR is useful for administrators but not faculty is proposed to impact the perceptions of both the top-down management of FAR and FAR’s impact on productivity. Additionally, the FAR’s usability is proposed to impact productivity. The perception of FAR’s usability is impacted by help and support using the FAR and administrative support for the FAR. Based on this model, further testing is needed. Implementation methods, user attitudes before and after implementation, and data storage methods will need to be analyzed as well as different types of technologies.

CONCLUSIONS

The outcomes from this study should be considered for future development of technology applications, implementation of the technology, and the perception of usefulness. Its practical implications indicate the importance of making sure that users perceive and accept the usefulness of the new technology in the users’ job function. In addition, users need to be convinced that the new technology has appropriate, effective secu-



rity measures. Furthermore, managers in the organization can impact respondents' perceptions of a new technology in how the conversion to the new technology is handled. The conversion process would include the implementation process as well as management's approach to administering the conversion. Finally, the technology itself and the support provided users impact its acceptance and users' attitudes towards it.

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REFORMING THE PLACEMENT OF TRANSFER STUDENTS IN INTRODUCTORY LEVEL MATHEMATICS COURSES

Irina Seceleanu

Assistant Professor

Department of Mathematics
Bridgewater State University
Bridgewater, Massachusetts

Rebecca C. Metcalf

Assistant Professor

Department of Mathematics
Bridgewater State University
Bridgewater, Massachusetts

ABSTRACT

Transfer has become a significant pathway for obtaining a bachelor's degree from four-year institutions. As a result, higher education institutions are faced with an increasing population of transfer students with varied academic backgrounds and readiness levels. Determining the placement of transfer students in the appropriate introductory-level mathematics course presents a distinctive challenge, and has not been the focus of many studies. In response, this article offers an analysis of the difficulties associated with the placement of transfer students and of the variety of practices regarding placement across select institutions. A narrative describing the placement system for transfer students adopted at a public four-year university in Massachusetts, as well as recommendations for other institutions for the implementation of a smooth, efficient and transparent mathematics placement system for transfer students, is provided.

INTRODUCTION

For many years there has been an upward trend in student mobility in higher education. The ability to transfer between different colleges and universities enables students to respond to their evolving needs and interests, and to appropriately choose an institution that fits those goals. However, many receiving higher education institutions are faced with an ever-increasing population of transfer students with varied academic backgrounds and readiness levels. As a result, addressing these students' unique needs with the standard practices employed for first-time students presents a distinctive challenge.

Transfer has become a significant pathway for obtaining a bachelor's degree from four-year institutions. A nationwide study, conducted by the US Department of Education, showed that "the majority (59%) of 1999–2000 first-time bachelor's degree recipients attended more than one institution during the course of their undergraduate enrollment" (Peter, Cataldi, & Carrole,

2005, p. 33). The same study showed that, of those bachelor's degree recipients who started at a public four-year institution, 48.3% had enrolled in more than one institution over the course of their degree. Additionally, 42% of the students who began in 1995–1996 at a public two-year institution transferred to another institution by 2001 (Peter, Cataldi, & Carrole, 2005).

The performance of transfer students has garnered widespread attention in the literature in recent years. Particularly, several studies have identified a temporary dip in the academic performance of transfer students during their first semester at the receiving institution, commonly referred to as *transfer shock* (Cejda, Kaylor, & Rewey, 1998; Hills, 1965; Keeley & House, 1993). This gap in achievement can be attributed to many factors. Ferren and McCafferty (1992) identify correct placement in introductory mathematics courses as an important factor for improving student success rates, saying that "misplacement can lead to high dropout and failure rates" (p. 5). Thus, the placement of transfer

students into courses tailored to their abilities is essential for ensuring academic success of these students.

Placement in the appropriate mathematics course is especially important when a course or a sequence of courses is a gateway into a specific major. This is particularly true for transfer students in Science, Technology, Engineering and Mathematics (STEM) fields. Li (Winter 2010) found that across all STEM fields, 44% of all graduates of four-year institutions attended a community college. Moreover, Packard, Gagnon, LaBelle, and Jeffers (2011) found that, for STEM fields, “more than 50% of students use community colleges as their entry point to higher education” (p. 3), with a higher incidence amongst women and minorities (Hagedorn & DuBray, 2010). Consequently, transfer is a critical pathway to bachelors’ degree completion in STEM fields, and a strong emphasis should be placed on ensuring the appropriate placement of these transfer students.

Determining the placement of transfer students in the appropriate introductory-level mathematics class remains one of the most difficult dilemmas that higher education institutions face, given that, unlike first-time students, most transfer students have already taken a placement test, as well as mathematics coursework at the previous institution. Due to the lack of curriculum uniformity across higher education institutions and the absence of transparency of individual placement tests, finding the appropriate mathematics placement, corresponding to each transfer student’s readiness, is a difficult endeavor.

While the placement of first-time students has been the object of study in many articles, far fewer efforts have been exerted to study current practices for the placement of transfer students in introductory level mathematics courses. Flagel (2008) acknowledges the existence of a gap in the literature regarding the transfer admission process, and so this article attempts to offer an analysis of the difficulties associated with the placement of transfer students and of the variety of practices regarding placement across select institutions in the US. Moreover, we provide a narrative regarding a placement system for transfer students adopted at a public four-year university in Massachusetts, and offer recommendations about designing and implementing a placement system which ensures smooth transfer and is in accordance to the student’s level of preparedness.

DIFFICULTIES ASSOCIATED WITH THE PLACEMENT OF TRANSFER STUDENTS IN MATHEMATICS

Placement in introductory level mathematics courses can strongly impact the academic performance of students. Ferren and McCafferty (1992) state that “placing students into courses tailored to their abilities is essential to improving success rates” (p. 4). In a study at a four-year institution in Pennsylvania, Parker (2005) found that the initial score on the mathematics placement of a first-time student strongly impacts that student’s timely progress towards a four-year degree. Pedersen (2004) also identifies the mathematics placement score as one of the four variables that are a significant predictor of a student’s success. Given the importance of correct placement in mathematics courses for a student’s academic achievement, it is critical for higher education institutions to also give priority to the placement of transfer students.

When determining the placement of transfer students, the receiving institution has a variety of tools at its disposal. Ferren and McCafferty (1992) state that when given the choice, students place themselves in courses beyond their ability, and consequently more objective criteria need to be used to identify a student’s level of preparedness. Along with the ability to administer their own placement test at matriculation, the institution can also take into account a transfer student’s scores on standardized achievement tests, as well as previous placement scores and relevant coursework from the sending institution.

When considering the best way to determine the correct placement of transfer students in introductory level courses, administering a placement test at admission, as is the case for first-time students, is arguably the simplest and most objective approach. However, a seamless transfer requires that receiving institutions recognize the set of knowledge and skills the student acquired at their institution of origin, and so, re-administering the placement test would create a barrier in the transfer process. This is especially important in the context of partnerships between two and four-year colleges, where program and articulation agreements are in place. In these cases, re-administering a placement test at the four-year institution could signal distrust between the two institutions.

Furthermore, while for first-time students the placement test may appropriately reflect their level of preparedness, Ferren and McCafferty (1992) report that often for transfer students there is a significant time lapse between their last mathematics class and their admission at the receiving institution. Consequently, when transfer students are re-tested, the placement scores may not accurately reflect their level of preparedness. This may inadvertently lead the receiving institution to place a student in a course below their readiness level, despite the student's ability to succeed in a higher course upon completion of a brief refresher. Moreover, at many institutions transfer orientation sessions take place over the course of a single day near the beginning of the semester, which creates many logistical problems with administering a placement test on campus to a large body of students, during a short time frame.

While the use of placement tests in determining the appropriate mathematics course for a transfer student presents many issues, the placement of these students based solely on their transfer records also poses many challenges. Often, students' grades from relevant prerequisite courses taken in their last semester at their sending institution are not available upon admission. This is supported by a report published by the Massachusetts Board of Higher Education (June 2008) that identified a significant delay in sending and receiving of students' transcripts between institutions in the state. The receiving institution is therefore faced with the conundrum of possibly accepting a course as a prerequisite for which the student received a failing grade at the previous institution and hence placing this student in a course which is above their readiness level.

However, the hardest problem to overcome in the placement of transfer students stems from the many difficulties associated with aligning the curriculum between different institutions. Lipka (2010) reports that even amongst institutions within the City University of New York (CUNY) system, transferring of mathematics courses is linked to many inconsistencies. For example, the Technical Mathematics I course at Bronx Community College would transfer to John Jay College as equivalent to Modern Mathematics, which "if transferred back to Bronx, would count differently, as Trigonometry and College Algebra" (p. 4).

These disparities emerge commonly when aligning the curriculum of a two-year college with that of a four-year institution. For example, Bristol Community College, a public two-year community college in Massachusetts, has 12 credits of courses leading to Pre-calculus, while a typical public four-year university in the state offers only three such credits. Given that many transfer students do not complete the full 12 credits required as a prerequisite for Pre-calculus at the two-year college prior to their transfer, the receiving institution is left with the difficulty of deciding whether to place students with partial completion of the prerequisite sequence in its remedial, non-credit bearing, mathematics course or directly in Pre-calculus. For example, the institution might face the inequitable choice of either placing a student having completed 6 credits at the community college in the remedial course, possibly alongside students with no prior transfer credits, or in Pre-calculus, with students who completed the full 12 credits of prerequisite courses.

These difficulties are exacerbated by the increasing number of transfer agreements between institutions, which can be challenging to navigate. Porr and Acar (Nov 2010) report that a 1999 survey of 1,172 colleges identified the existence of over 9,000 partnerships between two-year and four-year institutions. A more recent study would reveal that the number of such agreements between institutions would be much higher today. Moreover, the trend in student mobility is no longer simply vertical between two-year and four-year institutions, in that today transfer is multidirectional across institutions. A 2008 report published by the Massachusetts Board of Higher Education (June 2008) illustrated the considerable diversity of the sending institution within the public college system in Massachusetts (see Figure 1). With 22% of the transfer students coming from out of state, 51% from in state two-year colleges, 21% from in state four-year institutions and more than 16% from private institutions, the typical four-year public institution in Massachusetts is faced with assessing the equivalency of a vast number of transfer courses. Given that a third of the incoming students at public four-year institutions in Massachusetts are transfer students (Massachusetts Board of Higher Education, June 2008), identifying transfer equivalencies of courses between institutions

for all incoming transfer students is quite an extensive task.

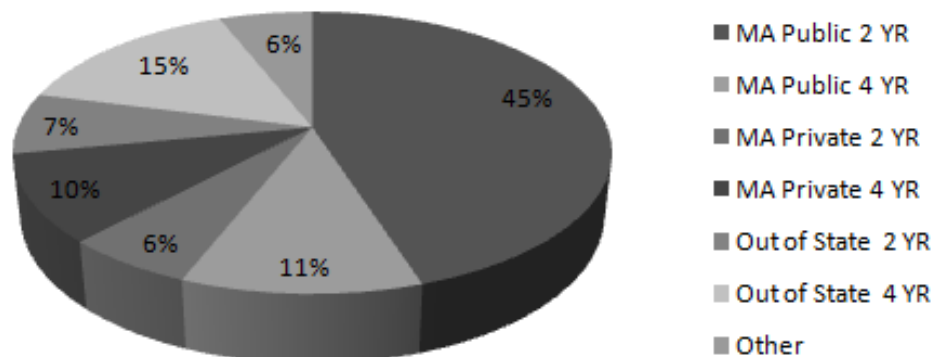
Given the many difficulties associated with the placement of transfer students, there is a plethora of placement systems used across different institutions in the US. A survey conducted by Ferren and McCafferty (1992) revealed that “placement procedures vary widely in how preparation is measured, and who makes the placement decisions” (p. 88). Even within the Massachusetts public system of four-year universities, institutions have adopted a wide spectrum of placement procedures for transfer students. Our investigation found that Fitchburg State University (2012) administers a placement test to all incoming transfer students required to take a mathematics class, unless they transfer a Calculus I course or higher, or they passed the state-mandated placement test within the past year at their previous institution. On the other hand, Framingham State University (2012) accepts a passing score on a previous placement test, without any time restriction, as well as exempts transfer students from taking a placement test, provided they have transferred

in a college-level mathematics course. Moreover, the University also exempts students who have received a C- grade or better in non-credit bearing developmental mathematics courses from certain regional institutions. Finally, at the other end of the spectrum, Worcester State University (2012) requires all incoming transfer students to take the placement test, regardless of their level of mathematics coursework at their previous institution.

Another very important factor to take into consideration regarding the placement of transfer students is that non-credit bearing, developmental courses do not typically transfer between institutions. Hagerdon and DuBray (2010) report that many students take developmental mathematics courses each year, but only few continue to a transfer-based, mathematics course. A study conducted by Adelman (2004) found that 41% of students at a two-year institution and 20% at a four-year institution enroll in at least one remedial course. Often these students do not advance through the course sequence towards the transfer-based, mathematics courses and so they

FIGURE 1
DIVERSITY OF THE SENDING INSTITUTION OF TRANSFER STUDENTS AT
STATE UNIVERSITIES IN MASSACHUSETTS

Sending Institution for Transfer Students at
Public 4-Year Institutions in MA



Adapted from Massachusetts Board of Higher Education (June 2008). *Final Report from the Commonwealth Transfer Advisory Group*. Retrieved from <http://www.mass.edu/library/Reports/CTAGReport.pdf> on 4/4/2012.

are faced with a “developmental climb” (Hagerdon & DuBray, 2010, p. 38) before they can complete a mathematics course that will transfer to another institution.

In a study conducted at two-year institutions in Los Angeles, Hagerdon and DuBray (2010) classify the mathematics course offerings at these colleges into the four categories (see Figure 2): *remedial* (Pre-algebra, Math Fundamentals), *basic* (Basic Elementary Algebra, Introduction to Algebra), *intermediate* (Intermediate Algebra), *transferable* (College Algebra, Pre-calculus, Calculus). The study finds that as many as 42% of transfer-hopeful students, and 33% of transfer-hopeful STEM majors, placed in the lowest category of developmental mathematics courses, requiring them to take four courses in order to be able to complete a college-level course that would transfer to the receiving four-year institution. Given this steep “climb” students at two-year colleges face, not many succeed in reaching the level of transferable coursework, and thus, are faced with the likelihood of having to retake a developmental mathematics course at the receiving institution.

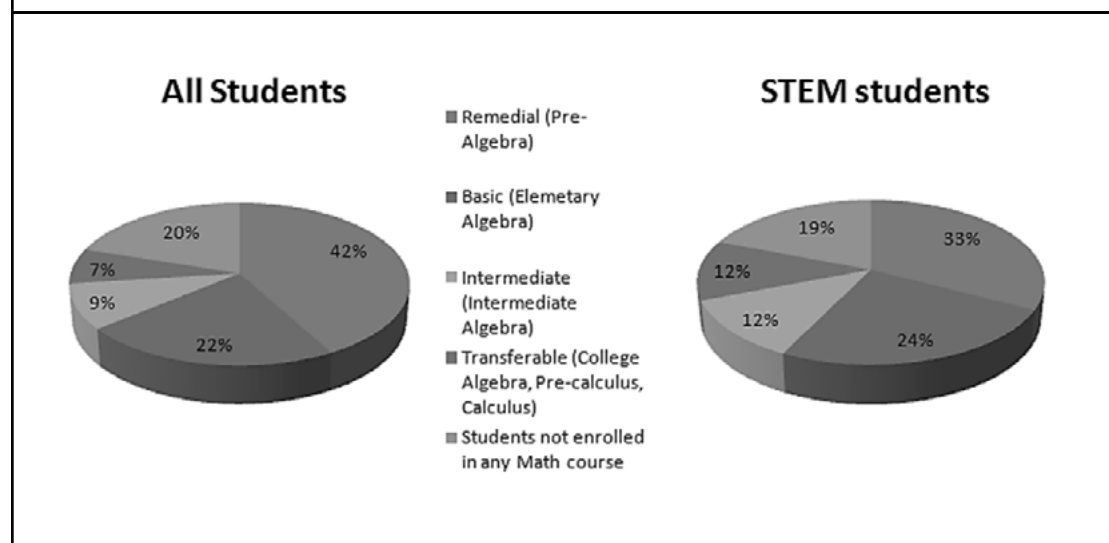
It is now apparent that the decisions related to the placement of transfer students are complicated, and have been addressed in different ways

by various institutions in the US. In the following, we present a narrative describing a placement system for transfer students adopted at a public four-year institution in the greater New England area, in collaboration with partner two-year colleges, that addresses many of the difficulties presented above, and offers practical implications for other institutions.

THE CASE STUDY

The focus of our case study is the placement system adopted for incoming transfer students at a large public four-year university in Massachusetts. Transfer is a significant pathway to obtaining a bachelor degree at this institution, with over a third of the incoming student population transferring from both two and four-year institutions across the New England area. Given the high density of higher education institutions in the region, the variability of the placement practices and the curriculum of the sending institutions is quite high. Although there are regional partnerships which seek to create seamless transfer between institutions, the task of evaluating the applicability of previous coursework for all transfer students is daunting due to the large number of sending institutions. Thus, the university is faced with the challenging task of as-

FIGURE 2
INITIAL MATH ENROLLMENT OF
TRANSFER HOPEFUL STUDENTS AT COMMUNITY COLLEGES



Adapted from Hagedorn, L., & DuBray, D. (2010). Math and science success and nonsuccess: Journeys within the community college. *Journal of Women and Minorities in Science and Engineering*, 16 (1), 31 – 50.

sessing the readiness of an increasing population of transfer students from a multitude of institutions, with varied placement tests and introductory mathematics curricula.

The introductory level mathematics curriculum of the university consists of two separate tracks calling for different levels of algebraic skills. Students in the humanities and social sciences are on the non-calculus track, and are required to take the Liberal Arts Mathematics or the Elementary Statistics course to complete their mathematics requirement at the institution. On the other hand, students in business or the STEM fields are on the calculus track, which consists of an algebra intensive Pre-calculus course that leads to Calculus. For first-time students, placement in these courses is assessed using an adaptive, standardized, multiple-choice test mandated for all public institutions by the Massachusetts Department of Higher Education (Massachusetts Department of Higher Education, 2012). If students fall short of the cut score on the placement test, they are placed in a non-credit bearing, remedial mathematics course, prior to entering college-level mathematics coursework. For direct placement into Calculus, a second placement test is administered to those students who exceeded the cut score on the first test.

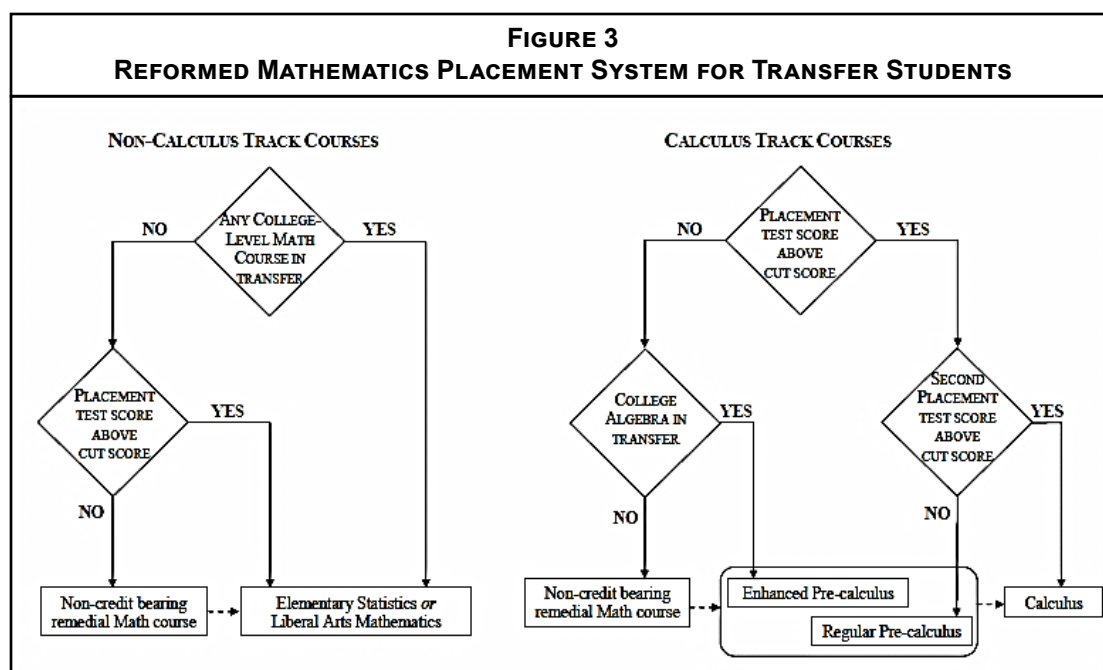
An analysis of the student performance at this institution revealed that the placement test accurately assessed the readiness of first-time students for different introductory level mathematics courses. However, the grades of transfer students in these introductory courses followed a bi-modal distribution, in that the achievement of one group of transfer students was quite poor, while the other group was performing well. This motivated the institution to undergo a self-study of its placement system for transfer students with the goal of diagnosing the reasons for the low achievement of this population of students. It was determined that, in the absence of administering the placement test to transfer students at admission, the other criteria used by the institution to determine placement were not adequately assessing the readiness of the transfer student population. Interestingly, for students on the calculus track, the introductory level mathematics courses completed at the sending institution were not a good predictor for their success in Pre-calculus. In particular, students having completed College Algebra, or the equivalent college-level prerequisite course for Pre-calculus, prior to transfer were

also distributed bi-modally in the Pre-calculus course. Finally, time elapsed since the completion of a student's last mathematics course was found to be a good predictor of a transfer student's success in introductory level mathematics courses.

As previously mentioned, placing students into courses tailored to their abilities is an important factor for improving students' success rates (Feren & McCafferty, 1992). In view of the analysis above, the university established a placement system that would differentiate between different readiness levels of transfer students, while simultaneously honoring transfer agreements with other institutions. In the paragraphs below, we present the placement system adopted by this institution, which is a balanced mixture of administering the placement test to some transfer students, while accepting a carefully chosen selection of courses completed at the sending institution as prerequisites for its introductory-level mathematics courses (see Figure 3).

The reformed placement system for transfer students implemented at this institution established criteria that clearly delineate between students required to take a placement test and those that are exempt from testing. Since many transfer students have already completed the mathematics requirement for their program of study prior to transfer, it is unnecessary to further test this category of students at admission. Furthermore, it is important to differentiate the calculus track from the non-calculus track students, as their success in the mathematics course required by their programs calls for more advanced algebraic skills. At the institution in our study, programs in the business and STEM fields require students to complete Calculus, while students in the humanities and social sciences are on the non-calculus track, and must complete non-algebra intensive courses. Given this clear division of the mathematics requirements by programs, the institution was able to use the declared major of the transfer students to easily delineate between the students on the calculus track and those on the non-calculus track.

For the students on the non-calculus track, the institution agreed to accept any college-level mathematics course in transfer as a prerequisite for Elementary Statistics and Liberal Arts Mathematics, and consequently only test those transfer students who have not completed a college-level mathematics course at another institution.



The successful completion of such a mathematics course was considered a good indicator of a student's ability to succeed in another non-calculus track course, given that neither of these non-calculus track courses are particularly algebra intensive. It is worth noting that a student who has only completed a non-credit bearing remedial mathematics course at another institution will be administered a placement test to determine their level of preparedness. As a result, while a transfer student may be required to repeat a developmental non-credit bearing course, with adequate preparation, the student may be able to circumvent the aforementioned steep "developmental climb" (Hagerdon & DuBray, 2010, p. 38) that many students face at the two-year colleges.

On the other hand, the calculus track students require solid algebraic skills to successfully complete their mathematics requirement, and so the institution adopted more stringent standards for the placement of this population of transfer students. To avoid placing transfer students in courses above their level of preparedness, which offer few opportunities for remediation of poor algebraic skills, the institution decided to identify the students in need of remediation by testing all transfer students on the calculus track whose mathematics courses in transfer were below Pre-calculus.

To address the aforementioned issue of transfer students only partially completing the sequence

of courses leading up to Pre-calculus at the sending institution, the university devised a new coding system that enabled it to recognize transfer courses that are not part of its own curriculum, as prerequisites for Pre-calculus. In the new system, the college-level course serving as prerequisite for the Pre-calculus course at the sending institution, commonly referred to as College Algebra, was designated as an appropriate prerequisite for Pre-calculus. That is, at a two-year college offering 12 credits of coursework leading up to Pre-calculus, only the final course in this sequence is recognized as a prerequisite for Pre-calculus at the receiving institution during transfer. This new policy ensures a seamless transfer process between the two institutions, as a student can enroll in the Pre-calculus course at the receiving institution simply by having met the prerequisite for this course at the sending institution.

However, as pointed out above, the successful completion of College Algebra at the sending institution was shown to be a weak predictor of the success of transfer students in Pre-calculus. Since all transfer students who completed College Algebra were required to take the placement test at admission, the institution was able to separate this population of students into two cohorts based on their readiness level. Thus, the university was able to target this population of transfer students who would have otherwise struggled in Pre-calculus, and offer a support system to help

them remediate their lacking algebraic skills. The institutions created special sections of Pre-calculus enhanced by a one-credit tutorial offering additional practice with algebra skills, which hosted the population of transfer students who transferred a College Algebra but fell short of the cut score for Pre-calculus. This solution enabled the institution to offer transfer students in need of remediation, who completed the prerequisite course for Pre-calculus at the sending institution, the much needed help, while still upholding the principle of seamless transfer between institutions.

Accordingly, College Algebra was added among the prerequisites for the enhanced sections of Pre-calculus. Courses that qualify under this designation were identified at sending institutions across the region and flagged in the system. While this solution greatly minimized the administrative labor required at admission for each transfer student, the list of courses designated as College Algebra must be updated periodically to reflect possible curricular changes at the sending institutions.

Since the above described placement system relies heavily on the declared major of the transfer student at admission, it also needs to account for those students who change their major. While under the adopted placement system, a transfer student changing from a calculus to a non-calculus track program requires no additional placement testing, the other direction may require that the student receives further testing. To ensure the proper advising of the rare students who change from a non-calculus track program to a calculus track one, the institution introduced a new change-of-major form requiring special advising for those transfer students changing majors from say History to Chemistry. Furthermore, since the time between mathematics courses was shown to have an important impact on students' success, the institution required transfer students to enroll in a mathematics courses suggested for their program of study in their first semester of transfer. It is worth noting that a similar academic policy is enforced for first-time students in their first semester at the university.

The success of transfer students in their first semester at the receiving institution has been shown to also be strongly influenced by the student's ability to predict the transition process at the new institution and adequately prepare for

any upcoming hurdles (Packard, Gagnon, & Senas, 2012). For this reason, communicating the requirements for placement testing and of academic programs to transfer-hopeful students, well in advance of their matriculation, is a key factor in ensuring that upon transfer, students will successfully navigate the requirements of their new institution. Moreover, in an effort to avoid any unnecessary delays in a student's academic program, transfer students should be well-informed about the possible setback placement test results could have on students' timely progress towards the completion of their program of study, as well as be aware of the available options to retake the placement test, if students feel the results of the test do not accurately reflect their abilities (Packard, Gagnon, & Senas, 2012).

To ensure the transparency of the transfer process, the institution developed a website which provides future transfer students with an overview of the mathematics requirements for their academic program, and offers an interactive tool indicating placement in mathematics courses based on previous coursework prior to transfer and a student's score on upcoming placement tests at the new institution. Furthermore, the institution sent individual letters to transfer students prior to their transfer orientation, informing them of whether or not they will be tested, the importance of the placement score for their academic program, as well as offering students the resources needed to review for the placement test. As a result, providing clarity and transparency, in the otherwise highly complex transfer process, allowed transfer students to not feel lost in the intricacies of the system and enabled student agency.

Finally, actively collaborating with higher education institutions in the region is a key factor in improving the efficiency and effectiveness of transfer pathways. As a result, diagnosing institutional barriers and challenges with transfer can be the groundwork for creating a simpler, more transparent placement system for transfer students (Massachusetts Board of Higher Education, June 2008). The institution in our study recognized that communication with partner institutions is an essential component in the implementation of the new placement system, which requires a continuous flow of information garnered from partner institutions about the nature of mathematics courses at their institution. Involving these partner institutions in the trans-

fer process also ensured that students were adequately advised about the courses they needed to complete, prior to transfer to the new institution, which allowed students to make progress in their academic programs without any unnecessary delays. Thus, embracing a holistic approach to advising across institutions takes on a central role in ensuring seamless transfer for students.

The consequences of a poor placement system for transfer students can be wide-ranging, having an impact on both students and the institution. The lack of adequate placement of transfer students can lead to high failing rates in mathematics courses, unnecessary delays in programs of study for students, as well as changes of majors, often to non-STEM fields. Additionally, standards in introductory mathematics courses may be lowered, so as to not leave misplaced students behind, which can have a serious ripple effect on subsequent courses. Anecdotal evidence from this four-year public institution indicates a significant improvement in relation to these issues. Particularly, early data suggests there was a significant increase in the number of students who were able to successfully complete calculus-track coursework, which speaks to the benefits of accurately placing transfer students according to their readiness level.

PRACTICAL IMPLICATIONS FOR OTHER INSTITUTIONS

In a study conducted by Adelman (2005) attempting to draw a portrait of traditional-age students at community colleges across the US, the author emphasizes the importance of recognizing transfer as a significant pathway for obtaining degrees and institutionalizing this venue across higher education institutions.

“In an era when nearly 60 percent of traditional-age undergraduates attend more than one institution, and in increasingly complex enrollment patterns, (...) it is important to mark transfer as a permanent change of venue, a migration that is formally recognized by system rules” (p.15).

Given that incorrect placement in introductory level courses negatively affects the academic success of transfer students, we strongly recommend administrative action towards implementing policies that place students in courses tailored to

their abilities. To benefit from the experience of the case study presented above, we provide recommendations for designing a placement system for transfer students which offer practical implications for other institutions:

- Determining the placement of transfer student in introductory level courses should be a balanced mixture of using placement scores administered at admission to assess the readiness of the students, and accepting courses in transfer as prerequisites for courses at the receiving institution. The specifics of the placement system should be tailored to the curriculum of the receiving institution.
- Given the different algebra skills required to succeed in introductory level mathematics courses, the placement system should distinguish between students on the calculus track versus those on the non-calculus track, when determining the requirements for placement of transfer students into these courses.
- For the assessment of transfer students at admission, the institution should use the same placement tests available for the first-time students, and thus not impose standards on transfer students that are not in place for first-time students. This is especially practical, since the logistics for administering the placement test to a large group of students are already in place at the institution.
- Institutions should shy away from adopting a loose placement system that allows entry to transfer students into mathematics courses for which they are ill prepared. Placing students in courses at the appropriate level, corresponding to each student's readiness level, is a key factor for the retention and long term success of students.
- By developing enhanced sections of introductory-level mathematics courses that offer additional support to students, the institution can continue to honor other institutions' coursework as prerequisites for its own courses, while ensuring that transfer students are not placed in courses above their abilities.

- Since the design and implementation of such a complex placement system requires the involvement of both faculty members and administrators, collaboration between the relevant offices on campus is imperative. Additionally, coding courses from regional institutions commonly transferred by students in the administrative computing system of the receiving institution will greatly diminish the workload of administration offices such as Admissions and Registrar.
- The ability of transfer students to succeed in their first semester has been shown to also be strongly influenced by their ability to predict their transition process at the new institution, and so informing students of the requirements of the placement system in a timely manner should be a priority for the institution.
- Since a low placement test score could potentially set back students' academic progress, the institution should also share review materials with transfer students and clearly communicate the policies about retaking the placement test for students who feel the results do not accurately reflect their level of preparedness.
- Communication with partner institutions is an essential component of implementing a new placement system. Involving these institutions throughout the design and implementation stages of this process ensures that these institutions have their concerns addressed, increasing the likelihood that they will be supportive of the new placement system.
- To ensure seamless transfer, it is important to reach out to higher education institutions in the region and to take a more holistic approach to advising transfer students across institutions. This can potentially help avoid any unnecessary delays for students, by ensuring that they are advised to complete the mathematics courses relevant to their long term academic goals, prior to transfer.

Higher education institutions across the US have concentrated institutional efforts on ensuring the success of first-time students through various programs such as academic communities, fresh-

men seminars and comprehensive orientation and mentoring programs. Far fewer efforts have been exerted to ensure the retention and success of transfer students. In particular, the placement of transfer students in introductory level courses corresponding to their readiness level remains an institutional area widely ignored in the literature and subject to great variability in practice across the US. This issue takes on a primary role in the retention of STEM students, as the placement of a transfer student in a gateway course above their level of preparedness often leads to a change of major to a less mathematics intensive program. It is therefore important for the retention and success of transfer students that higher education institutions prioritize the correct placement of transfer students alongside seamless transfer, and direct their institutional efforts to this end. Given the continuous increase in the number of transfer students and the multitude of transfer patterns over the years, higher education institutions should take decisive administrative action towards designing and implementing a smooth, efficient, and transparent mathematics placement system for transfer students.

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**TEACHING GOES ON:
ASSESSMENT MODELS AND THE CASE OF AN
INTERNALLY DISPLACED HIGHER EDUCATION INSTITUTION IN THE
SOMALI REPUBLIC**

Yusuf Ahmed Nur

Assistant Professor
School of Business
Indiana University Kokomo
Kokomo, Indiana

Melissa Grabner-Hagen

Assistant Professor
School of Education
Indiana University Kokomo, Kokomo Indiana

Julie Reinhardt Saam

Associate Professor
School of Education
Indiana University Kokomo
Kokomo, Indiana

ABSTRACT

The metric for assessing the quality of a university within a traditional Western setting is well established. Evaluation of higher education institutions within developing countries, however, is not as clear-cut. In this paper the efficacy of quality assessment measures are examined through the case study of a university in the Somali Republic, one of the world's least developed countries. The appropriateness of the measures of research, teaching, and service are examined within the context of a struggling nation. Issues that impede the mission and goals of the university are discussed. A model for the evaluation of higher education institutions is presented. The model gives consideration to external factors such as accreditation, funding requirements, and governmental agency oversight. The model proposes that quality assessment of universities should factor in the country's educational and overall environments. The goal is to make evaluation fair and relevant to the prevailing circumstances of the university and the developing country.

THE CASE OF SIMAD UNIVERSITY

The Somali Institute of Management and Administration Development (SIMAD) was established and became operational in November 1999 in Mogadishu, the capital of the Somali Republic. SIMAD became a university on January 20th, 2011. It is now an institution delivering a number of four-year degree programs. The institution receives the majority of its financial support from the Africa Muslims Agency (AMA). From a humble beginning of four small rooms in a rented house situated in the Hodan District of Mogadishu, the institute has now become one of the most important learning centers in the coun-

try. Its main campus is located along the industrial road in Mogadishu. Before being displaced, SIMAD contained four computer centers equipped with more than 60 networked PCs having all the necessary hardware and software applications, a library with the capacity of 15,000 books, a publishing unit with a copy printer and photocopy machines for the production of teaching and learning resource material, spacious 20 classroom buildings, a conference hall with a capacity of 300 people, a mosque that could accommodate about 500 people, a well that provided running water to the institute, power generators that produced the required electricity for the institute, and satellite equipment that provided a 24-hour

internet link. However, due to security concerns, the university was forced to move out of its campus, becoming an internally displaced institution operating in two buildings that formerly housed high schools. SIMAD University currently comprises the following faculties/departments: business Administration Department, Accounting Department, Information Technology Department, Foreign Languages Department, and Distance Learning Department.

This study is a critique of the prevalent Western model of assessment of higher education institutions (HEIs) as it may apply to SIMAD University. The main goal of the study is to explore the efficacy of such models when applied to HEIs in a country like the Somali Republic, a country with very little of the educational infrastructure and resources that the said Western model presupposes. The study will demonstrate that a reasonably high quality of tertiary education, which meets both the intrinsic and extrinsic objectives of an HEI, can be achieved in one of the poorest and most unstable countries in the world.

THE SOMALI REPUBLIC

The Somali Republic (Somalia) has been in a never-ending civil war since 1991 when the long serving military dictator, Siad Barre, was overthrown by a popular armed revolt. The civil war and the ensuing political instability resulted in the destruction of much of the country's infrastructure, massive displacement of the population, and the total collapse of virtually all government institutions and services. The education sector suffered the most, with primary, secondary, and tertiary schools being destroyed and many trained teachers and other professionals fleeing the country. As a result, Somalia experienced one of the severest brain drains in the African continent. This in turn resulted in the total collapse of the education sector, which was at the time almost exclusively in the public sector.

Recovery Efforts

As reported by Cassanelli and Abdikadir (2007), education in the Somali Republic started to gradually recover in the mid 1990s. The still raging civil war, however, has made a full recovery for Somalia's education system impossible. The number of children enrolled in local primary schools and the number of both primary and second-

ary schools has increased multi-fold. However, primary school enrollment rates throughout Somalia are now extremely low by international standards. Other problems include short school years, low levels of training for a large percentage of teachers, limited availability of education materials and supplies, as well as minimal support received from the fledgling Transitional Federal Government.

As the severity of the civil war subsided in the mid 1990s, the international community intervened, injecting an enormous amount of aid in many regions of the Somali Republic. Schools started re-emerging gradually with local initiatives and the assistance of the international community. The habit of going to school revived in the war-torn Somali society. As a result of this revival, communities started to contribute to the revamping of educational institutions at all levels. While there is still strong support from the international community for the education sector, mainly from the Arab world, most of the current education and training industry of Somalia is Somali-owned and Somali-run. In spite of the poor educational climate in the past, initiatives by investors, colleges, communities, and non-governmental organizations (NGOs) have resulted in the birth and rebirth of institutions of higher learning such as SIMAD University. Such institutions are playing a critical role in providing skilled personnel to NGOs, government departments, and local businesses and small industries. It is important to note, however, that the capacity and the quality of the current education system is far below what a dynamic and post-conflict nation like Somalia needs. Nevertheless, today's Somalia is proud to have succeeded in revitalizing its education system.

Limited Opportunities

The first secondary school graduates in the post conflict era completed their studies in the last part of the 1990s. Most of these students had limited opportunities to pursue studies in tertiary education or training. Some of the international NGOs offered limited scholarships to the students who graduated from the schools they support. For the bulk of the rest, opportunities for further studies and gainful employment in the local markets were bleak due to inadequate local market capacity and lack of employable skills among the graduates.

At the same time as the above situation was evolving, private enterprises and civil society organizations started to mushroom as a result of the improved local security conditions in the early 2000s. It became quickly apparent that the problem of qualified manpower was proving to be a serious obstacle for the local enterprises and organizations that continued to emerge. The existing schools were not producing the necessary quantity of graduates with the necessary qualifications to support a sustainable recovery of Somalia.

To further its progress, the Somali environment requires that the university systems continue to develop. The question becomes how to assure that the universities in the country are meeting their intrinsic and extrinsic goals. The quality of the universities educational services to the community must be monitored and assessed. Within such a complex, unstable, and somewhat dysfunctional environment that prevails in Somalia, assessing the quality of the university system can be problematic.

THE STUDY METHODOLOGY

The data for this study was culled from Hassan and Nur (2012), an unpublished report that used the International Organization for Standardization (ISO) 9001:2008 and modern assessment criteria to evaluate the educational practices, instructional and administrative techniques, curricula, and classroom management methods of SIMAD University. The study reviewed the management systems and operations of SIMAD University with the purpose of understanding the extent of their compatibility with quality assessment considerations used in Western universities. Teaching and management related practices of SIMAD University were assessed based on analyses of gathered primary and secondary data. The assessment concluded that SIMAD University had developed and implemented a management and teaching system that can guide the university in its efforts to establish itself as a well-functioning and sustainable institution of higher education with adequately qualified faculty, staff, and professional administrators based on the principles of good governance.

As part of the assessment of the university, 10 faculty members and administrators at SIMAD were interviewed between December 28th, 2011 and January 1st, 2012. Secondary data were also

reviewed, which included strategic plans, budget information, scholarship information, academic reports, and the school's prospectus – altogether more than 20 official documents.

Assessment of Quality

This case study analysed the Hassan and Nur (2012) report in light of the existent HEI assessment theories. Traditionally, in the Western context there are three areas assessed as measures of quality: teaching, research, and service. We examined how these can be re-conceptualized when a university is located within a non-Western context. We addressed the following: Do these same goals and missions apply to universities in a developing or underdeveloped country? Do the quality indicators and measures change connotation or importance when implemented in developing countries, knowing that universities in developing countries have additional complexities when it comes to establishing quality measures?

TRADITIONAL WESTERN ASSESSMENT MODELS

University assessments have been around since the beginning of the modern university in the Middle Ages (van Vught and Westerheijden, 1994). Assessment models have changed but universities are still required to gauge the quality of their programs. Higher education institutions have intrinsic and extrinsic goals, which impinge upon the evaluation of a university's quality (van Vught and Westerheijden, 1994). Intrinsic factors are those that focus on the epistemological and ontological tasks of the university. The extrinsic dimensions of universities pertain to knowledge transfer to benefit the greater society that the university serves. To meet its intrinsic and extrinsic goals, the customary mission of an HEI is to teach, do research, and to provide service.

Assessment requirements exist to meet the needs of external groups like funding agencies, professional standards, and governmental bureaucracy requirements. Often external funding is contingent upon quality assessment, and good indicators of quality can lead to more funding. Competition from other universities can lead to the need for assessment and so can the need to attract and retain students. The goals of the external quality assurance process are improvement and account-

ability. The external quality assurance process may include audits, accreditation, examination of equity, and establishment of qualification networks (for transfer of credits). Internal quality assessment may be driven by factors such as allocation of resources, teaching load and student enrollment. Intra-institutional quality may be measured through peer evaluations and self-evaluations.

Evaluation Models

The modern practice of higher education assessment is long standing and well established (van Vught and Westerheijden, 1994; Nusche, 2008; Alderman, 2010; Harvey and Williams, 2010). In Europe and in the United States, the processes of assessment of quality are consistent and uniform because HEIs quality assessments are based upon measurement of extrinsic and intrinsic indicators. However, multiple forms of evaluation of HEIs have been put into practice. Different stakeholders, such as the government, the professional organizations, faculty, and sponsors, have different assessment objectives. External evaluations of quality can be set by institutionalized higher education accreditation bodies, which are controlled by the HEIs. Professional groups may set standards, which is termed specialized accreditation. In some cases, universities or university program standards are under the control of a government or governmental organization.

Although systematic evaluation of universities is commonplace, there is not a standard approach to evaluations (Van Kemenade, Pupius, and Hardjono, 2008; Palomares-Montero and García-Aracil, 2011; Williams, 2010). There is a movement, however, toward creating a standardized evaluation tool for universities. As a part of this movement, using the Delphi method to survey leading university academics and managers, Palomares-Montero and García-Aracil (2011) established 12 important indicators that experts felt should be included in all assessments of teaching, research and service. Indicators for research include the counting of publications, citations, licenses granted, research contracts, patents and money generated by university projects. Teaching indicators include faculty to student ratio, the number of graduate students, and the number of students working in research and development. Interestingly, the experts who Palomares-Montero and García-Aracil (2011) surveyed did

not place a high value on service as an important indicator of quality.

CONTEXTUAL INFLUENCE

Abukari and Comer (2010) examined the higher education system in Ghana, a developing nation, and illustrated that context should influence how one views quality. Therefore, national and local contexts should be of crucial importance when establishing procedures to determine quality. According to the authors, the definition of quality and how to determine the stakeholders and judges of quality may be different for a developing nation. We argue that the measures and assessment standards developed by Palomares-Montero and García-Aracil are not appropriate for all HEIs. Considerations should be made for the context within which each specific HEI is operating.

CONSIDERING CONTEXT IN ASSESSMENT

It is tempting to examine all universities, including those located in African countries, with the same HEI quality lens. HEIs in many African countries, such as Nigeria, Botswana, Kenya and Ghana, have been examined using common Western measures (Harvey and Williams, 2010; Johnson and Hirt, 2011; Sterian, 1994) and extensive attention has been paid to the South African HEI system (de Jager and Gbadamosi, 2010; Jita, 2006). Missing is the examination of the HEIs in extremely underdeveloped countries in Africa such as Somalia. The establishment of unified African evaluation standards is difficult, if not impossible (Okeke, 2011; Teferra and Altbach, 2004; Strydom and Strydom, 2004). Vast disparities exist between countries in Africa in terms of development, educational achievement, and political stability. Each country has its own needs and problems. It would be extremely complicated, and possibly unfair, to include developing countries like Somalia in a standardized measure of quality in higher education. Modeling the standardized accreditation procedure after the Bologna Process, which is the European degree standards, is a goal for many countries in Africa (Okeke, 2011). However, any process of quality assessment must give consideration to the contextual needs of the local circumstances and situations. The requirement to examine context is particularly true in developing and underdeveloped countries that do not have the infrastruc-

ture or resources which are taken for granted in developed countries. Current assessment models do not account for all of the contextual variables that must be considered within a developing country.

The question then becomes, how does one assess quality within different contexts? Specific to this paper is the issue of evaluating a university in a country that does not have the resources and infrastructure that universities in developed nations have. Considering the context of a less developed country, appropriate quality indicator measures may be more difficult to establish (Abukari and Comer, 2010). This is because resources and situations differ. For example, in a developing country the materials and books may be difficult to procure for instruction. Regular research programs may be difficult to establish and spaces for teaching and research may be damaged or not adequate. In the following sections the common aspects of assessment are examined and tied to the case of Somalia's SIMAD University.

ASSESSING SIMAD UNIVERSITY

One basic indicator of quality is access to higher education. Many issues enter into access like the number of students in a university, the scholarship opportunities for students and equal access for females. Africa has a low rate of tertiary education (Teferra and Altbach, 2004; Lihamba, Mwaipopo, and Shule, 2006). In a developing nation such as Somalia, examining students' access to the university is important. Relative to other countries in the world, Somalia ranks among the lowest in terms of development. The United Nations Development Programme (UNDP) established the Human Development Index (HDI), which is reported annually and is a ranking of a country's standard of living. The HDI statistic is calculated based upon three variables: life expectancy, education achievements of the population, and gross national income. A few United Nations countries, including Somalia, have no rating because data was not available. The last overall HDI rating for Somalia was published in 1996 from 1993 data (United Nations Development Programme, 2011). Somalia was rated in the lowest category. A few statistics on education were listed in the 2011 report. In Somalia 32.6% of children attend primary school and 7.7% attend secondary school. The tertiary school statistics are unknown, but given the likelihood of attrition and the low secondary education numbers, this statis-

tic is expected to be extremely low. Therefore, the quality indicators based on student enrollment (Palomares-Montero & García-Aracil, 2011) would be low in this under-developed nation.

Under these circumstances and with Somalia moving towards a semblance of stability, the education and training sector, the local/international NGOs, and community based organizations started new initiatives to provide solutions to the above shortages. As a result of these initiatives higher learning institutions such as universities, colleges and institutes were founded one after another in Mogadishu and other regions in the Somali Republic.

BOYER'S MODEL AND ASSESSMENT

Most HEIs recognize three aspects of professional practice of college faculty: teaching, research, and service - as if all three were distinct entities within the life of faculty. Boyer's model, which binds all the three areas, may shed a light on the relevant issues related to evaluation. Boyer distinguishes between the three components, but offers a new arrangement for them. In the Boyer model, there are four categories of professional practice that faculty undertake: (1) Scholarship of Discovery; (2) Scholarship of Integration, (3) Scholarship of Application, and (4) Scholarship of Teaching. Although Boyer explains them separately, the interconnectedness between the four facets of scholarship reveals a professoriate that values the construct of linking all four facets together.

The assessment areas suggested by Boyer's model fit the basic functions of an HEI, even one which is functioning within a difficult context. The integrative nature of this model makes it useful for evaluating SIMAD University. Additionally, the interconnectedness of the four aspects of higher education align the goal of helping the university change the community while increasing the university's quality.

Scholarship of Discovery

The scholarship of discovery is similar to traditional scholarship referenced in empirical research, which can be either qualitative or quantitative. However, Boyer asserted that the outcome of the scholarship of discovery is not intended to only increase the knowledge of the faculty but to also inform the practice of the faculty. Out of necessity, research is a low priority at SIMAD

University. Nearly all faculty function as administrators and little time is dedicated to research. Accessing research materials, including scholarly materials, can be a challenge at the university.

Scholarship of Integration

The scholarship of integration is a “form of research that attempts to interpret ideas, synthesize diverse fields and shed new light on existing theories” (Gordon, 2007, p. 196). This primarily promotes the integration of thought across disciplines, where faculty members from different disciplines could collaborate within a research endeavor or within a teaching exercise. SIMAD University works to create integration through the one publication that produces quarterly, *Somali Business Review*. Although the size and scope of the publication is limited, it assimilates information for a broad audience. The university faculty contributes to the *Review*. Because the *Review* is published in English, it is not clear how accessible it is to people outside the university.

Scholarship of Application

Boyer incorporated the Scholarship of Application into his model due to his belief that “faculty scholarship was regarded by all too many as fundamentally disconnected from the larger purposes...” (Rice, 2002, p. 1). This relates to the common distinction in faculty roles of teaching, research, and service. However, this particular example of service would not be simply serving on committees but rather using the practice of scholarship to find solutions to problems and enhance the capacity of the community. This is the ultimate external goal of the university, expanding beyond the immediate bounds of the university. This aspect of the model is the most difficult to accomplish within a newly stable society and newly operational university. However, this has been one of SIMAD University’s main goals, and it has accomplished much in that regard. It employs the best and the brightest among its graduates, accounting for about 80% of its faculty and administrators. Many of its graduates find jobs with local businesses as computer programmers, accountants, and managers. Others work for the Transitional Federal Government as administrators, inspectors, and supervisors.

Scholarship of Teaching

According to Boyer scholarship of teaching and scholarly teaching should be viewed as the same. The act of excellent teaching is scholarship in itself. Teaching involves examining instruction and student learning. The faculty at SIMAD focus their energy in this area. Teaching is accorded the highest priority. However, the means of quality assessment of teaching are limited. Student and peer evaluations have only recently been introduced, which is a step in the right direction.

Although not all aspects were met by SIMAD University, Boyer’s model offers additional insights into the next steps that need to be taken. As mentioned earlier, although Boyer explained each entity separately, he viewed the four categories as interconnected. He also viewed them as possibly sequential, which would be helpful in the implementation phase. Since the scholarship of discovery is the most familiar of the four categories, faculty could begin with this process of scholarship. However, at SIMAD currently, faculty do not have the resources for traditional research that would be categorized under scholarship of discovery. With an understanding of the complex issues facing SIMAD and Somalia, faculty may find working on complex issues within the community through the scholarship of application a natural endeavor. Boyer (1991) explained that all the knowledge and understandings gained from the three categories of scholarship: discovery, integration, and application, can be utilized in developing curriculum and instruction to enhance the scholarship of teaching and thus student learning. Although Boyer understood that change was difficult, he promoted this new model of the professoriate because he recognized that “teaching is crucial, that integrative studies are increasingly consequential, and that in addition to research, the work of the academy must relate to the world beyond the campus” (p. 75).

HIGHER GOALS OF EDUCATION

An additional part of a developing country’s higher education purpose is for its HEIs to provide service to the university and to the community. Teaching and research are important but they must have a higher purpose, one that is tied to improving the nation. Service is intended to specifically attack the problems of a country with high needs in growth and advancement

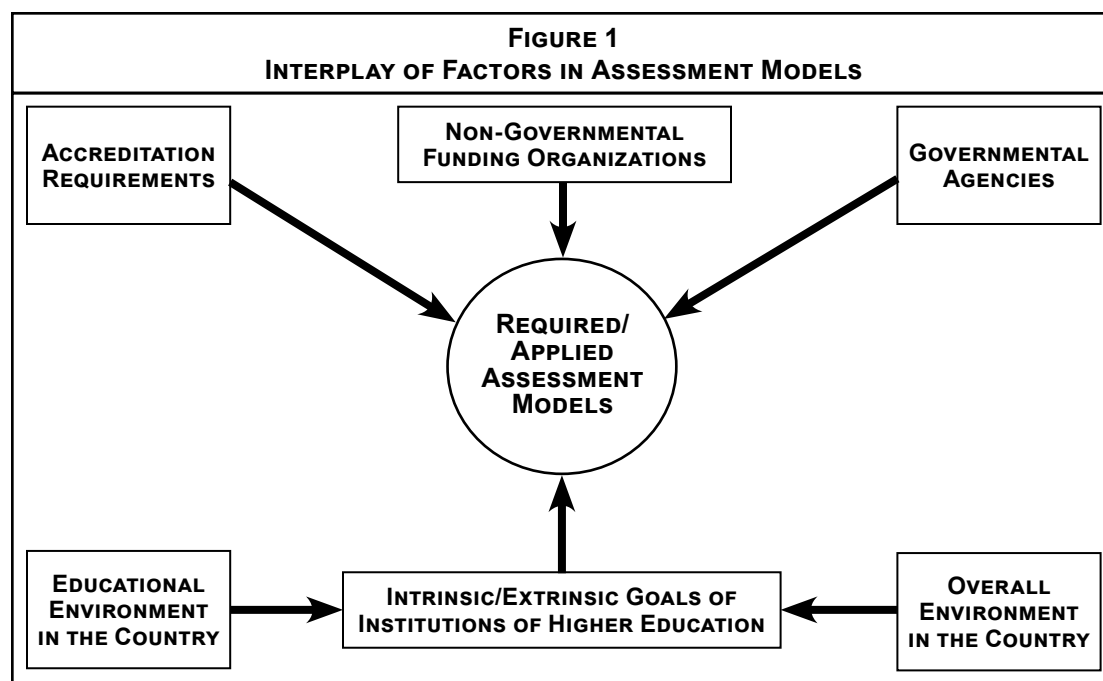
(Abukari, 2010). In a developing country, quality should be defined based upon the HEIs ability to meet needs through teaching, researching, and service. One goal of a university, according to Abukari and Comer (2010), should be to reduce poverty and to develop human potential. The outcome is to increase equity and to create mutually beneficial, reciprocal relationships among members of society. The needs of the community as determined by local, national and international contexts are to be considered.

Quality Dilemma

Abukari and Comer (2010) state that content, process, and outcome are each important for determining quality given the goals of a university in a developing country. The process of evaluating an HEI quality falls to academics, students, and professional organizations. Funding agencies as well as the international community, other key evaluators of quality, may be the stakeholders who may be influenced more by a *Western perspective* than a *developing nation perspective*. The authors state, "The choice between local and international quality imperatives is another quality dilemma that the University faces; should it adhere to the local quality indicators or adapt to the international standards?" (p. 201).

The quality assurance system within universities in developing countries concerns matters such as

instruction quality, equity and access (Bazargan, 2007). Defining what quality is within a developing country can be tricky (Idrus, 2003; Van Kemenade, Pupius and Hardjono, 2008; Havey and Williams, 2010), because it requires that stakeholders establish quality. However, every university has a number of stakeholders that can place conflicting demands on the university. This may be especially true in a developing, unstable country. Bazargan (2004) describes a process for establishing a quality assessment system and the important elements of that system in a developing country. The process requires that consideration be given to the needs of the country to determine what quality is. Research is done to determine needs. An assessment system is piloted and stakeholders give feedback. Members of the HEIs learn the evaluation system and are encouraged to take ownership. This process allows for the beginning of internal and external evaluation. An example is the case chronicled by Bazargan (2007), in which the Iranian government launched an evaluation system for its universities. Internal factors were first standardized when the government created a self-assessment system. Reports on quality assessment were required from departments so that external evaluation could be conducted. External evaluation was through peer-review.



SIMAD UNIVERSITY ASSESSMENT MODEL

SIMAD University started its quality control evaluation with self-assessment using modern models. It was soon realized that these models had to be extensively modified if they were to be of any value due to the many factors listed above. The diagram in Figure 1 summarizes the assessment features that our study of SIMAD University suggests. The required assessment features (middle circle) are driven by demands placed on the HEI from accreditation entities, non-governmental funding organizations, and governmental agencies. The applied features (the other half of the middle circle) on the other hand get their impetuses from the overall environment of the country (political, legal, and socio-economic) and the educational environment moderated by the intrinsic and extrinsic goals of the HEI. Once a baseline was established through self-evaluation, SIMAD used it to advocate for more resources from its external funders.

Accreditation Issues

In the case of SIMAD University, the requirements placed on it from accreditation and funding needs are mediated through trust based relationships. The organizations upon which the university relies are connected to it through shared values, membership in the religious organizations, and cultural affinities. SIMAD University belongs to African and Asian HEI associations that accept its degrees. Thus, SIMAD sends some of its brightest graduates to graduate programs in Malaysian, Pakistani, Sudanese, Kenyan, and Ugandan universities. Sending students to universities in the above listed countries has the added advantage of drastically decreasing the possibilities for further brain drain. Many Somali students who obtain scholarships to Western countries end up staying there after graduation. In contrast, the overwhelming majority of Somali students who graduate from universities in the above countries come back to Somalia. SIMAD provides scholarships to those students with the contractual understanding that they would work for SIMAD for four years following their successful completion of the respective graduate program. This has been one of the most successful programs at SIMAD University.

Funding Issues

It has already been mentioned that most of the educational funding comes from non-governmental Arab sources. Strong cultural, political, and religious affinity between Somalia and the Arab world allows the mutual relationship to be fundamentally trust based. This is one major reason that Western non-governmental funding agencies are largely ineffective within this region. Because of the country's geographic proximity to the Middle East (Somalia is located immediately south of the Arabian Peninsula, separated only by the Gulf of Aden), Somalis have had deep historical, cultural, and religious ties to the Arab world. The Somali Republic is a member of the Arab League, the pan-Arab organization that unites the 22 countries of the Arab world.

Teaching Issues

Perhaps because of the funding dependence on Arab non-governmental organizations, Arabic is the medium of instruction in most primary and secondary schools. (Some tertiary education is also provided in Arabic.) Despite the above mentioned close relations the Somali people have with the Arab world, Arabic is not a native tongue spoken in Somalia. Somali is a member of the Afro-Asiatic family of languages which comprise all Semitic and Hemitic languages. Arabic as the medium of instruction for primary and secondary education in Somalia poses at least two problems. First, it is not a native language, so its use is thus prone to all the difficulties inherent in learning non-native languages. The overwhelming majority of the teachers who teach Arabic in the schools are Somalis who do not have the necessary proficiency in the language. Thus, although Arabic is the official medium of instruction and the instructional and assessment materials are in Arabic, the teachers lecture in Somali. The second problem is that most degree programs offered at the tertiary levels are in English. The same linguistic inconsistencies exist here too: the professors lecture in Somali although the instructional media and assessment are in English.

Government Issues

One of the ironies of the above educational system is that close to 70% of the students SIMAD University admits each year are graduates of

Arabic language secondary schools. Currently all degree programs at SIMAD University are offered in English. This is where the absence of an overall educational policy championed by the government is sorely felt. Educational institutions at all levels self-regulate. The Transitional Federal Government is too weak and too disorganized to do anything other than register HEIs and pass on the occasional scholarships provided by friendly countries in the Middle East and the West.

General aspects of the overall environment in Somalia and the education environment have already been alluded to in this study. The inherent forces of those environments drive the intrinsic and extrinsic goals of SIMAD University, which so far has been very successful in charting a route through these often conflicting forces. Thus out of Boyer's model, SIMAD University focused on welding teaching and service together by turning all full time faculty into administrators. Research is transformed into a practical application of concepts taught at SIMAD in the day-to-day running of the university.

CONCLUSION

The case of SIMAD University illustrates the variables to be considered when evaluating HEI characteristics within complex, unstable and possibly dangerous environments. The application of this evaluation model to universities in developing countries will allow for a more fair perspective of quality. This, in turn, allows for an expansion of internal assessment for improvement in areas like teaching and research. Scholarship, as Boyer suggests, can be encouraged to expand into and improve the external environment outside the walls of the university. Using the model to evaluate the universities' accomplishments and challenges can improve the likelihood of achieving external goals like accreditation and attracting further funding.

Future research on assessing HEIs in developing countries should expand the assessment of this model to other universities in other contexts. Because this project was a case study, it has limited generalizability. The country targeted for this study was among the most dangerous, least stable, and the least developed. Other underdeveloped countries may have different circumstances which must be considered in an evaluation of its HEIs.

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We encourage the submission of manuscripts, presentation outlines, and abstracts in either of the following areas:

Learning

We encourage the submission of manuscripts pertaining to pedagogical topics. We believe that much of the learning process is not discipline specific and that we can all benefit from looking at research and practices outside our own discipline. The ideal submission would take a general focus on learning rather than a discipline-specific perspective. For example, instead of focusing on "Motivating Students in Group Projects in Marketing Management", you might broaden the perspective to "Motivating Students in Group Projects in Upper Division Courses" or simply "Motivating Students in Group Projects". The objective here is to share your work with the larger audience.

Academic Administration

We encourage the submission of manuscripts pertaining to the administration of academic units in colleges and universities. We believe that many of the challenges facing academic departments are not discipline specific and that learning how different departments address these challenges will be beneficial. The ideal paper would provide information that many administrators would find useful, regardless of their own disciplines.

