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PEACE THROUGH EDUCATION, DIVERSITY AND PROFIT

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Definitions of both peace and education would depend on the context in which it is being defined. In case of war torn economy, for example, the peace would be the absence of war. Peace essentially means individuals living with and respecting each other's actions, giving each other some leeway in cases of differences and resolving differences without fear or violence. Thus, by its very definition, it means respect for different points of view and ways of living. To do so, one would have to learn about various opinions and practices and how they are similar to and different from their own. This could either come because one has been living in a pluralistic society or because one is exposed to pluralistic thought through education. Technology has also made it possible for individuals to be exposed to diverse thoughts if they so choose. For example, one could access lectures by prominent professor and videos on various view points on YouTube and other sites. In fact, one can take formal courses (the Massive Open Online Courses, popularly known by their acronym MOOCs, which are currently available for free) at a little or no cost. This accessibility of knowledge has, thus, increased in all fields and has led to challenges and opportunities for provider of higher education. I first talk about Education in general, followed by a discussion of trends in delivery of education, role of diversity of thought and the need for looking from a for-profit lenses for at least some aspects of education.

Education?

The answer to the question 'What is education,' I believe, depends on the need of the society at the time. In the book Education in Ancient India, it was defined as the 'development of personality, and inculcation of civic and social duties, promotion of social efficiency and the preservation and spread of national culture." (Altekar, 1944). In reference to South Sudan, one of the new country's founding fathers, Dr. John Garang, stated that 'it is through education that people and countries build the skills needed to strengthen self-reliance, expand choices, and create shared prosperity.'(UNESCO, 2011). Philip W. Jackson (2011), who spent his whole life in answering the questions and writing a book What Is Education stated that 'the fundamental goal of education is to make 'students as well as teachers—and therefore everyone—better people.'

Education thus, depending on the context, has been understood as something in between the broad objective of social efficiency and making every person a better

person to addressing the need of the time, e.g., development of manufacturing industry in an economy at the initial stage of development. In the short run a society may focus on developing individuals meeting a particular skill, e.g., information technology skills using a specific software in demand to looking at the problem from a broader perspective. Traditionally, universities focus on the later. However, even when the degree program involves liberal arts courses that lead to overall development of the individual, the program also focuses on a particular discipline. For example, a computer science major may take two years equivalent of liberal arts courses, the remainder of the program may be focused on the broad discipline (e.g., sciences or engineering) and on, in this case, coursework in computer science. Training programs, on the other hand, may be focused on a specific software, say, Oracle database.

Trends in Delivery of Education.

In recent years, with the entry of for-profit institutions and a desire to produce individuals who, so to speak, can hit the ground running, universities have started incorporating use of popular software in their education programs. This was speeded up with grants by software companies that gave their software either for free or at a highly discounted price to educational institutions. Once this was introduced, some universities started giving credit for their courses based on training programs completed at training institutions. For example, students who complete GNNIT certification by NIIT, a prominent computer training organization in India, after completing an undergraduate degree, get credit for a year of coursework toward a master's degree at some recognized universities in India and some universities in the United Kingdom (International Baccalaureate, 2012). Thus, education and training, which were generally done by separate institutions have, sort of, merged.

If we look at this issue from the perspective of delivery of education, then, the role of education would depend on the value the education system can add to the knowledge skill base individuals already have and can get from freely available resources and the efficiency with which this value addition at the higher education institution can take place. Addition of value would depend on the resources available and needs/ expectations of individuals and on incentives generated by various forces creating supply and demand for education and how students and parents on the one hand and faculty members and administrators on the other hand respond to these forces and incentives.

Today, with technology, universities can reach students all over the globe, students can seek admission to universities all over the globe, companies are marketing to consumers all over the globe and are purchase inputs and hiring labor all over the globe as well. This is facilitated and/ or hindered by political borders. Of course, depending on the strength of incentives, boarders are breached at times. Accrediting bodies are reaching out to universities outside their boundaries, with MOOCs and free sites like YouTube, education, training

and information is available for free or at a very low cost. Thus, successful institutions would be the ones that would be able to harness all resources to provide education in an optimal way, which would include cost, speed of response, quality of knowledge, etc. For example, rather than teaching the same way education has been delivered over time, programs may be developed that supplement knowledge that students have obtain or can obtain in the public domain with coursework at the university.

Pluralism/ Diversity of Thought.

We all want to propagate our thoughts. However, as more and more individuals start believing in a particular thought, they also start suppressing those individuals who are in a minority and who do not agree with them. As that happens, suppression does not just stay with this particular thought, be it religion or scientific discovery. This has the potential of suppressing scientific advancement as well. For example, Galileo was suppressed from speaking his mind as a scientist during the time of Christian fundamentalism in Rome. In addressing problems arising from these issues, then, just like affirmative action programs in the United States as it related to addressing race based suppression, should we not have similar programs for increasing the number of individuals who represent the minority, e.g., those opposed to the popular political ideology or represent religious viewpoint different than the predominant religion.

Societies, thus, do not do a favor to the minority community by including them in the main stream but do themselves a favor by gaining in efficiency through including of a diverse point of view. For example, United States benefitted immensely through inclusion of talent of immigrants (e.g., scientists) who were not as welcome in their own countries or were able to better use their talents in the United States than in their home countries.

For Profit Education.

If the fundamental goal of education is to make students as well as teachers—and therefore everyone—better people,' then, from the society's perspective how could the society achieve this goal? Even though both individuals (and corporations through individuals) want to achieve goals they are passionate about, both also respond to incentives both financial and non-financial. Looking from the demand perspective, universities would need to look at the level of education and financial resources of students. Similarly, with the needs of different societies growing in comparison to the capacity of higher education institutions, more and more governments are providing scholarships to its students to study overseas, especially in the United States. At the same time, universities in the United States are facing financial crunch and enrollment challenges. On the other hand, several resource rich countries are providing financial resources to improve quality of education provided by their institutions. Some institutions also have resources of their own.

Improvements in Internet technology has also made it possible for teaching to be conducted online. Similarly, as stated earlier, a lot of information is available online at little or no cost. Thus, students can learn a lot of content without formally enrolling at a university. However, they need to get recognition of their learning and achievements. Also, with increased globalization of business activity, more and more companies want to recruit students who have exposure to overseas business practices, i.e., students who can function in the environment of that country like individuals from that country. Thus, integration of overseas exposure has become an important aspect of education. Thus, from the point of view of institutions, should they also develop a dual strategy, i.e., in addition to providing traditional degree programs, the universities also set up for-profit units exploring various options from a purely business perspective?

Aspects that the institutions could explore from a business perspective could be the following: alliances to deliver university's courses overseas if it makes business sense; alliances with universities with resources or universities in countries with resources for developing relationships; recruitment of students from countries that provide incentives to their students to go overseas; exploring the possibility of setting up campuses overseas; and alliances with companies overseas to provide students with that exposure.

References:

Altekar, A. S. (1944), Education in Ancient India, Benares: Nand Kishore and Bros., http://www.archive.org/details/educationinancie032398mbp

W. Jackson (2011), What Is Education.' (University of Chicago Press, 2011). http://press.uchicago.edu/ucp/books/book/chicago/W/bo12214939.html

United Nations Educational Scientific and Cultural Organization (UNESCO), Education For an independent South Sudan, Education for All Global Monitoring Report 2011, http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/gmr2011-policy-paper-south-sudan.pdf

A BETTER APPROACH TO COLLEGE TEACHING?

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Abstract

Servant Leadership has become a popular tool for leaders in recent years though it has been dated back as far as 2000 years ago. Leaders employing Servant Leadership serve their followers/employees in an effort to increase both employee productivity and satisfaction. It has proved successful in numerous businesses and other organizations. The question is, then, does Servant Leadership have a place in the education system? The extension of Servant Leadership to teaching in higher education, "Servant Teaching" as it is being called, is a promising technique for focusing on helping students learn via a professor who serves them to better meet their educational needs.

INTRODUCTION

Events of recent years have proven that prior styles of societal leadership are to a great extent ineffective, especially in the business and political sectors of society. Events such as the warming of the planet, wars in the Middle East and Africa, terrorist attacks, and CEOs judged guilty of defrauding stockholders and lying to society, have forced organizations to pay more attention to who their stakeholders really are and how to treat them. There is a greater emphasis now on organizations, whether public or private, large or small, to be more accountable to stakeholders beyond the typical profits emphasis of shareholders. This new outlook has produced new approaches to leading organizations. For instance, "Servant Leadership" (SL), a leadership approach, which may be about 2000 years old, is now being resurrected as an approach to deal with more than just maximizing profits for the organization. Many innovative and emerging businesses have turned to this ethics-based style of leadership to produce success in their individual markets, with their human resource departments as primary advocates of SL in the workplace. With these developments the following question arises: what if we applied this apparently successful new leadership approach to teaching? The purpose of this article is to examine the tenets of SL and apply them to teaching in a college or university. This application of SL in the classroom setting will be referred to as "Servant Teaching" (ST) and its implications will be the primary focus of this article.

SERVANT LEADERSHIP

Servant leadership is simultaneously ancient and cutting edge. The basic concept of SL as the leader serving his/her followers has been discussed as far back as approximately 600 B.C. when the Chinese sage Lao Tzu wrote about the basic SL concepts in The Tao Te Ching. In 4th century B.C., an Indian sage by the name of Chanakya wrote about SL in his book Arthashastra. However, the present resurrection of the SL theory seems to be attributed mainly to the teachings of Jesus Christ (Greenleaf Center for Servant Leadership, n.d.). In the modern age the term "Servant Leadership" was coined by a vice president of a large corporation, Robert Greenleaf, in his book Servant as a Leader in 1970. Greenleaf initiated this idea of SL for organizations on the basis of Herman Hesse's book Journey to the East, in which the servant becomes the leader to people on a spiritual journey (Sendjaya, Santos, & Santora, 2008). Recent textbooks discussing leadership theories are also starting to discuss SL (Kinicki & Fugate, 2012; Kreitner & Kinicki, 2013; Robbins & Judge, 2013).

Servant leadership is a practical, altruistic philosophy that supports people who choose to serve first and then lead as a way of expanding service to individuals and institutions. Servant leaders may or may not hold formal leadership positions. SL encourages collaboration, trust, foresight, listening, and the ethical use of power and empowerment (Greenleaf Center for Servant Leadership, n.d.).

In business, SL has been conceptualized as an orientation to management that eschews traditional hierarchical and autocratic relationships and exhorts those who would be leaders to consider the well-being, flourishing, and empowerment of those in their charge (Greenleaf Center for Servant Leadership, n.d.). Greenleaf's discussion of SL contends that:

"The servant-leader *is* servant first… It begins with the natural feeling that one wants to serve, to serve *first*. Then conscious choice brings one to aspire to lead. That person is sharply different from one who is *leader* first, perhaps because of the need to assuage an unusual power drive or to acquire material possessions…The leader-first and the servant-first are two extreme types. Between them there are shadings and blends that are part of the infinite variety of human nature …The difference manifests itself in the care taken by the servant-first to make sure that other people's highest priority needs are being served." **(Greenleaf** Center for Servant Leadership, n.d.).

Other authors are embellishing Greenleaf's view of SL to relate it to other models of leadership, such as transformational, authentic, and spiritual leadership. Sendaja et al. (2008) have stated that a "holistic model of servant leadership incorporates follower-oriented, service, spiritual, and moral dimensions of leadership" (p. 405). The overarching theme found within these definitions is: SL is about wanting to serve first with leading being an after-

effect. This theme is supported by the ten tenets or qualities, which relate servants and effective leaders.

According to Spears (2004), the ten tenets of SL are:

1. **Listening** (Valuing communication and decision-making skills with a commitment of intently listening to others),

2. **Healing** (Searching to be "complete" and "whole"),

3. **Empathy** (Striving to understand and empathize with others, recognizing one's unique and special personality),

4. **Awareness** (General and self-awareness to help understand issues involving ethics and values),

5. **Persuasion** (Convincing others rather than ordering others, effective at building consensus within groups),

6. **Conceptualization** (Looking at a problem and thinking beyond just the basic facts),

7. **Foresight** (Understanding the lessons from the past, the realities of the present, and the consequences of future decisions),

8. **Stewardship** (Recognizing that humans play a significant role in holding the community together with trust for the good of society),

9. **Community** (Recognizing much has been lost from the movement of small communities to big institutions, leading to the identification of the means of building a community within an institution), and

10. **Commitment to the Growth of People** (Dedication to the development of every person within the institution).

Applications of SL in Business

Back in 2006 there were 35,000 English-language books offering advice on how to manage a business (Klimoski, 2007); there would presumably be even more today. SL is a small but emerging sub-group within all these management books. What would happen if corporations fully followed SL? Would leaders really serve those "under" them?

Spears (2004) states that in contrast to the time of the Industrial Revolution (when managers viewed people as tools and machines), today workers are

viewed as part of the team which makes the decisions. SL in the workplace inspires ethical, caring behavior working to improve and enhance the personal growth of workers putting employees, customers and the community as top priority. Working to serve the community, everyone is equal in the concept of SL, so nobody is "under" another. In reference to the concept of stewardship in SL, everyone contributes and has an equal part in the institution.

Supposedly, the more skills a person has developed, the more valuable she is to the organization and the more she could/should serve others. The more skills she amasses, the more she gets paid and the lower she moves in the inverted hierarchy. Leaders, such as vice presidents (although there may not be any such titles in a true SL organization), could become more like trainers than bosses. For major decisions, such as whether to open a new store in another state, the president's job may be to provide as much information to others as possible so that the front-line employees could decide whether to make the move. If the managers better serve the front-line employees, the front-line employees better serve the customers. Kaifi (2011) states that servant leaders in businesses pay attention to employees and show that they care about what the employees are doing, how they are feeling, and what they like/dislike. Glen Bounds (1998) feels that SL pays off for the organization. He states that servant leaders listen to, respond to and support employees. They remove barriers and obstacles, which would prevent employees from growing as individuals and performing well in the workplace.

Studies have been conducted on SL in business. In a representative study by Sendjaya et al. (2008), the researchers looked at senior executives in for-profit and not-for-profit organizations who were thought to have qualities of servant leaders. In turn, they were each asked to name fifteen employees under them who were also thought to have qualities of servant leaders, and then those chosen under them were asked to do the same. As each servant leader was chosen, they defined qualities or traits of a servant leader. The researchers found that their original 6 themes (voluntary subordination, authentic self, covenantal relationship, responsible morality, transcendental spirituality, and transforming influence) and 22 sub-dimensions of SL were heavily reinforced and showed positive results.

Servant leadership has been successfully used in business; many corporations are now focusing their corporate philosophy around the idea of SL (Spears, 2004). Various companies have been applying SL to business management. Some companies successful with SL include: **Medtronic** (Elsprenter, 2006), **Starbucks** (Gergen, 2006), **Herman Miller** (Gergen, 2006), **The Regence Group** where the CEO talked about reducing profitability for shareholders in return for increasing the benefits to other stakeholders like consumers (Ganz, 2007), **The Men's Wearhouse** (Thibodeau, 2005), **The Vanguard Investment Group** (Phillips, 2004), **AT&T**, **Southwest Airlines**, and the pioneer of applying SL—**TD**

Industries (Bounds, 1998; Gergen, 2006). Bounds (1998) describes Jack Lowe—CEO of TD Industries, which has been recognized as one of the Fortune 100 Best Companies to Work For in America—as one of the pioneers in practicing SL in business. Lowe states that acting for the right reasons—the desire to help others—pays great dividends. A study of 191 financial services teams in the U.S. and Hong Kong showed that SL explained an additional 10% of team performance over the effect of transformational leadership (Schaubroeck, Lam, & Peng, 2011). These are employers that have been very successful in their sectors. With SL being implemented by various businesses and endorsed by various executives, can SL principles translate to institutions of higher learning, specifically collegiate campuses?

Applications of SL in Not-for-Profit Organizations

Miller, Brown, and Hopson (2011) used a case study approach to compare SL to transformational leadership in two community organizations. The SL style was judged as more effective. In what was stated to be the first empirical research to directly compare SL to transformational leadership, Schneider and George (2011) compared the two styles at eight clubs of a national voluntary service organization. They found that SL was a better predictor of voluntary club members' commitment, intentions to stay, and satisfaction than was transformational leadership. They recommended that leaders in such organizations adopt a SL style.

Applications of SL in Higher Education

A number of higher-education institutions have employed servant leadership/servant teaching in various ways. Viterbo University offers a Master of Arts degree in SL (Viterbo, n.d.). The *SL* concept was applied to Manitoba's educational community with each of the educational stakeholders being identified and then applying SL concepts in each circumstance (Crippen, 2005). Many such SL programs dovetail into expanded emphases on community service and younger generations seeking to work in the non-profit sector. Southern Methodist University's Cox School of Business recently instituted a SL program with the Texas Scottish Rite Hospital for Children, which treats children with orthopedic conditions and learning disorders free of charge. The Southern Methodist students also assist and learn from other non-profit employers like Habitat for Humanity and United Way of America (Knight, 2006). Gonzaga University and the Larry Spears Center for Servant-Leadership jointly publish the *International Journal of Servant Leadership*.

The Christian Brothers University in Memphis adopted a conceptual framework in 2001 for the Educational Leadership Program where the leader is a servant. Values and beliefs related to SL state that an educational servant-leader: 1) Prepares for the challenges of a career both inwardly and outwardly and develops

a spirit of responsible service toward the school, teachers, students, the community, and the public. 2) Must be a servant first, a leader second. 3) Values the human dignity of all people and ensures that their needs for education and development in a safe and caring school environment are met. 4) Values and enhances the dignity of all in the school community. 5) Influences the school with wisdom and care to become a just and compassionate community. 6) Develops a learning community and works with colleagues to develop shared leadership. 7) Seeks and implements best practices in leadership, management, and technology in an ethical manner. 8) Advocates for the role of education in achieving justice in human society, better schools, better student learning, and more morally responsible actions by all educators (Christian Brothers University, n.d.).

Extension of SL to Servant Teaching (ST)

We have seen that SL has been applied in business and has been successful in at least some situations. Could we apply SL to teaching courses in colleges and universities? It would seem a natural progression as education literature today states teachers are considered change agents where teaching is a continuous form of leadership within the classroom and beyond (Dury, 2005). Research suggests that professors who develop leadership behaviors such as active listening, continuous encouragement, and support, and actively engage students in collaborative learning will better meet the learning expectations of present students (Dury, 2005). The movement of SL specifically into the classroom introduces a new phenomenon that we refer to as **Servant Teaching (ST)**.

SERVANT TEACHING

The concept of ST is derived from SL. Servant teaching is committed to creating a student-centered learning environment where students are active co-creators of knowledge rather than passive consumers of information. Servant teaching is more of a mind-set than an actual practice: "Servant teachership is not a formula or a program, it is a human activity that comes from the heart and considers the hearts of others" (Chonko, 2007, p.114).

Servant teachers share certain qualities that make them stand out from their peers. They embrace the ten tenets of SL: listening, healing, empathy, awareness, persuasion, conceptualization, foresight, stewardship, community, and commitment to the growth of people. Specifically, servant teachers actively listen to their students in an effort to understand their needs and challenges. They seek to develop a deeper understanding of students' concerns in order to help them develop a coping strategy. (**Listening**).

Servant teachers are principles-centered and balanced. They do not depend on traditional exchange relationship between leader and follower; instead they

operate out of deeply held personal values systems that are not negotiable. According to Ramero (2011), benevolence, integrity, and competency are important characteristics of servant teachers. (**Healing**).

Servant teachers understand that every student has unique talents and abilities that should be nurtured through individualized attention and encouragement. As a result, they take personal interest in every student trying to understand the student's individual learning style and help him or her develop an effective learning strategy (**Empathy**)

Servant teachers are acutely aware of their personal impact on all stakeholders in their environment. They understand that everything they do and say has positive or negative consequences on someone or something. Therefore, they carefully consider their actions and words and encourage the same awareness in their students. (**Awareness**).

Servant teachers explain their course policies and procedures to help students understand why it is important to uphold the rules. This persuasive approach is in stark contrast to the traditional classroom management tactic of levying penalties on those who fail to obey. (**Persuasion**).

Servant teachers adhere to more of a systems approach when thinking about problems. They recognize that everything in the world is interconnected and therefore, problems should be examined in relation to their causes and consequences. Furthermore, servant teachers pay close attention to the questions rather than the answers they encounter. They offer their peers new ways of looking at old problems to find solutions. (**Conceptualization**).

Servant teachers are reflective. They use past experiences as feedback to steer the direction of their personal and professional growth. In addition, they teach their students that there is no such thing as failure; instead, every experience, whether positive or negative, is an opportunity to learn and grow. (**Foresight**).

Servant teachers recognize their personal responsibility in creating a healthy and prosperous society. They give freely: to their students, their peers, their superiors, and their community at large. (**Stewardship**).

Servant teachers appreciate the value of small communities and spend time building relationships with students, peers, staff, administration, and their local community. They also believe that all students, regardless of their abilities, thrive in an open and non-threatening environment. Hence, they focus their efforts on building a safe and nurturing environment in their classroom. (**Community**).

In addition, servant teachers view teaching holistically and devote themselves to personal and professional growth of their students. They seek to understand their

students' goals and ambitions and offer advice and resources to help them succeed (**Commitment to the growth of people**).

Most importantly, servant teachers encourage their students to become servant leaders in their communities. According to Robert K. Greenleaf, the "Father of Servant Leadership," "[Servant] teachers… will be inspired to raise the society-building consciousness of the young. And teachers may be anybody who can reach young people who have potential to be servants and prepare them to be servant leaders. Teachers may be members of school faculties, presidents of colleges and universities, those working with young people in churches, etc… They catch the vision [of servant teaching] and do what they know how to do …" (Greenleaf, 1998, p. 55).

Applying Servant Teaching to Teaching in General

Servant teaching is a distinct teaching philosophy that has a transforming impact on teaching methodology, from course design to classroom dynamic to assessment of learning. Essentially, ST requires a shift in focus from the teacher to the students. This is evident in the approach used to establish learning objectives, in the preferred teaching methods, in the relational dynamic between the teacher and the students, in the choice of assessment tools, and in the increased emphasis on stewardship.

Learning Objectives. Servant teachers use a participatory approach to defining the course learning objectives. Working together, the teacher and the students identify students' needs and goals based on what the students should know and what they would like to know. In addition they establish a baseline by assessing the students' current level of knowledge on the subject matter. By engaging students in defining the course learning objectives, the teacher does not only demonstrate trust and respect but also establishes an environment of accountability thus strengthening the students' commitment to the jointly produced learning objectives. The participatory style of goal setting has a strong theoretical foundation and has been empirically shown to produce positive effects on goal acceptance and performance quality in employment settings (Erez &Arad, 1986).

Teaching Method. Student-teacher collaboration, however, does not stop with learning objectives. The servant teacher works with the students to create the curriculum and engages them in developing their own pathway to achieve the learning goals. Servant teaching philosophy is best served by andragogy – a teaching method for student-centered education. Andragogical principles include 1) creating a climate and structure for collaborative learning, 2) helping students to: a) identify and deal with obstacles to peer learning, b) experience abstractions through personal involvement, c) learn how to operationalize (i.e., apply) abstractions, and d) generalize knowledge and think critically, 3) responding to

diverse learning styles by balancing lecture, discussion, role play, and visual methods, and 4) role modeling professional competence (Gitterman, 2004). In sum, unlike the traditional subject-centered view of teachers as purveyors of knowledge and students as passive receivers of knowledge who are dependent on the teacher for "making all the decisions about what should be learned, how and when it should be learned, and whether it has been learned" (Knowles 1985, p. 8), student-centered ST seeks to empower students to become active contributors to knowledge creation.

Relational Dynamics. Humility as a servant could dictate removing all titles. The professor would be "Bill" or "Mary" rather than "Dr. X" or "Professor X." There is more individual attention and tutoring. Office hours become particularly important in building teacher – student relationships. As Onwuegbuzie et al. (2007) state, in public elementary and high schools, classroom teachers are more accessible on-site for most, if not all, of the school day. In contrast, college instructors are expected to engage actively in research and service activities that must be undertaken outside their teaching time and sometimes location. As such, the amount of time that instructors are available for students (i.e. office hours) varies from department to department, college to college, and university to university. In addition, the requirements imposed by administrators for faculty's office hours vary. Some institutions require no specific number of office hours for professors, whereas others expect a minimum number (e.g. 6) of office hours per week. If the majority of undergraduate and graduate students are actively employed while enrolled in college, many more students would find it difficult to schedule appointments with their professors during posted office hours. Servant teachers, however, do not need a prescribed set of office hours. They are flexible and willing to accommodate their students' demanding schedules. They make every effort to be accessible to students whether in person or via technology (e.g., phone, email, live teleconference through Skype).

Assessment Tools. Assessment is an important component of learning. Students need feedback on their progress, teachers want to know about the effectiveness of their teaching methods, administrators need to have tangible evidence of the quality of the education in their institutions, and parents want to know that their tuition checks are producing results. Yet, as the administrators attending the annual meeting of the Association of American Colleges and Universities admitted, the traditional grading system is not working (Jaschik, 2009). Most common concerns include grade inflation and apparent inconsistencies in professors' grades.

Consistent with the student-centered view of ST, servant teachers are likely to use non-traditional assessment tools such as narrative evaluations and rubrics. Students are likely to participate in a two-way evaluation process that involves a self-evaluation followed by the teacher's assessment of the student's progress. Hence, most assignments would include a self-evaluation component that

requires students to reflect on what they learned and how the assignment helped them (or didn't help). To maintain objectivity, outside evaluators may be involved in developing and implementing assessment measures (Robinson, 2009; Stanzione, 2009). The goal is to use assessment as a motivational tool to focus students on achieving their individual learning goals rather than on outperforming their peers.

These are not entirely revolutionary ideas. A growing number of colleges and universities, from Stanford Law School to smaller non-traditional liberal arts institutions like Fairhaven College are beginning to implement alternative assessment tools.

Emphasis on Stewardship. One of the core principles of ST is stewardship. Servant teachers have a strong sense of purpose, which they also try to instill in their students. They teach students the values of social justice and environmental responsibility. They integrate service learning in their classes through assignments and projects that connect students with their community and give them an opportunity to apply their knowledge, skills, and talents in service to others. Service is a very important part of ST because it develops servant leaders who understand social and environmental issues and who are willing to devote themselves to bringing a positive change to their communities.

An Example: Applying ST to Teaching Human Resource Management

Methods of teaching have vastly changed over the decades. Specifically, teaching Human Resource Management (HRM)/Industrial Relations (IR) in schools has gone through major changes. As Kingsley Kanu states, "The field of human resources is undergoing considerable structural change. A field that had traditionally viewed its role as transactional, mediating between management and the talent it employs, was transforming into the role of a business-consulting partner, working to achieve the organization's objectives" (Kanu, 2008, p. 104). In addition the Society for Human Resource Management is exerting more influence on topics studied in HRM courses (Ednres, 2008).

However, the topic areas covered in HRM are not the only things changing; the process of teaching the topic itself is going through changes. By using ST for Human Resources classes, professors would employ new methods that were discussed earlier to engage and bond with students. Since there is some disagreement regarding what topics should be covered in HRM, teachers are giving the option for students to choose what they study. To teach HRM in a ST manner, professors would ask their students on the first day of class what topic areas they would like covered. Accordingly, the professor then focuses on those topics. It all depends on what the students want to learn. It is important to remember that just like HRM focuses on the employees first, servant teachers

need to focus on the students first. Students are more likely to gain knowledge and enjoy their learning experience if they receive information concerning topic areas they are actually interested in.

Implications of Applying Servant Teaching

One main implication of ST is that a positive and trusting relationship is built. These positive relationships benefit everyone involved: students, teachers, administrators, and the community. It starts with the positive relationship formed between the teacher and the student, which instills a positive attitude within the student. The students will go on to help their community and those around them. With all these positive relationships formed, everyone is working toward a common goal. This goal could be to help others, give back to community, raise money, or provide other opportunities in the area of service (Greenleaf, 1979). Therefore, if ST is implemented and directed toward a common goal, everyone involved will work together to accomplish the tasks.

There are seven main relationships in servant teaching that bare analysis. These include student/teacher relationship, administration/teacher relationship, teacher/teacher relationship, student/parent/family relationship, student/student relationship, student/community relationship, and teacher/community relationship. These relationships are discussed next.

Student/Teacher Relationships. The relationship between students and their teachers should be more of a partnership than a dictatorship. It changes the relationship from one of a teacher who is the direct authority or wielder of power in the classroom to one who serves the students and society. It gives the student a voice and puts the student's welfare over his or her own, serving the interest of learning (Hays, 2008). The teacher should understand how each student learns and include assignment options that will allow the student to learn the information in a way that works best for the student. The students in turn should be vocal with their teachers. If they have questions or problems, they should not feel intimidated by the teacher. Benefits of this dynamic include: "greater engagement, increased autonomy and self-direction, deepened appreciation for change, and developing skills, attitudes, and understandings that transcend the classroom" (Hays, 2008, p.114).

Administration/Teacher Relationships. The relationship between the administration and the teacher in servant teaching is similar to that of a captain of a sports team. The administration serves as a leader who offers direction, support, and advice. Unlike current relationships between these two entities, servant teaching practices a more communicative style. Administrators do not reprimand or keep a watchful eye on teachers. They give them space and allow them to do things in their own style, only offering advice if there is a major problem. As

research suggests, such relationship has a positive effect on the overall school climate (Black, 2010) and the teachers' commitment to their school (Cerit, 2010).

Teacher/Teacher Relationships. The relationships between teachers in servant teaching are very close. Teachers see fellow teachers as part of a team working towards building and improving the institution (their common goal). Teachers place a great deal of trust in each other. They cooperate rather than compete. They help each other and offer advice.

Student/ Parent / Family Relationships. Students' families should assist the student's learning by being supportive and available for questions and assistance. They should provide a workspace for the student that is conducive to her learning style.

Student/Student Relationships. The relationship between students is much stronger when servant teaching is practiced. Rather than competing with each other for grades or praise, students will work together to gain more understanding of their topic. The relationship is more collaborative then competitive. This type of relationship allows students to concentrate more on learning and less on the rewards associated with high grades. They understand the uniqueness of themselves and the differences between their motivations, goals, and ways of learning.

Student/Community Relationships. In servant teaching, the students are taught to live for others and give back to their community. Teachers encourage their students to participate in service projects.

Teacher/Community Relationships. The teachers lead by example, showing that giving service back to the community is important. In their community, they are still seen as teachers by both their students and the community per se.

These relationships that are formed by utilizing servant teaching are vastly different than the relationships formed through standard teaching methods. In many school settings, the main goal is self-progression. That is, students try to excel in classes to receive high grades thus achieving scholarships and other rewards; teachers work solely towards their tenure and advancement in rank; and the community is often used or ignored. Through servant teaching, these relationships are positively affected. When everyone is working towards a common goal, no one feels left behind. Everyone in the servant teaching relationship can feel accomplished. The bottom line is that society's goal will have shifted from self-progression to community progression.

Why would Professors NOT Want to Use ST?

Despite the benefits of ST, there are extensive questions and concerns about this new approach to teaching. People might view ST as too liberal and taxpayers may argue that they aren't seeing where their money is going. If students are creating their own curriculum, goals, and standards, is there a way to ensure their commitment and the fact that they are being challenged? Administrators prefer to have more structure in teaching in order to make it easier to identify the areas for improvement or to note what is successful. Can students truly know what they need rather than have the experts/professors decide? Can professors use the ST approach if the administrators above them do not? Will students be more or less ambitious (e. g. come to class at all) if they are empowered to decide their own needs? How can teachers and students be trained in ST and how much will it cost? How will we evaluate students for grades? Why change from the present approach(es)? What can ST add? These are all important questions and concerns that require further research.

Why Would Professors Want to Use ST?

With the implementation of ST, the entire school system as well as other organizational structures would be deeply transformed. By adopting ST and redirecting our approaches to knowledge transfer, our organizations would work more for others and less for individualistic benefits. Where does serving each individual's needs fit? Servant teaching is essentially the application of SL in the classroom. Servant teaching is used so that the students involved in that sort of relationship are learning as best as they can and all that they can; they are then able to come into the world and attempt to make it better. The students learn and understand the importance of helping and serving others.

One of the main benefits of ST is the instillation of hope into both the teacher and students. There are four different kinds of hope that come from this relationship: hope for liberty, hope for equality, hope for efficiency, and hope for community. Hope for liberty encompasses minimal government, individual independence, laws that protect political and economic liberty, merit-based decision making, innovation, entrepreneurial excitement, and rugged individualism (Walker, 2008). Hope for equality is then realized both inside and outside the servant teacher-student relationship. The sense of equality gained from ST applies to many different systems: schools, government, healthcare, and even in the business world. People who strive for equality not only try to compensate for a lack of it, but go above and beyond to eliminate the natural inequalities in their lives. Hope for efficiency is an important benefit, especially in the school system. When efficiencies are maximized, the greatest outcomes are possible. This means that wastage of time, talents, and resources are eliminated. The effect on communities is one of the largest benefits of the servant teacher-student relationship.

Community-oriented people believe in the shared good life and are not inclined to see individuals benefit to the detriment of the common good (Walker, 2008).

The community in which the servant teacher and student reside will benefit from their shared unique relationship. The teacher's passion and drive to serve leads to accomplishment of both community goals and to a more fulfilled and whole life (Greenleaf, 1979). From gathered information, we can conclude that ST would be beneficial to not only the students but to the teachers themselves. When teachers are able to give themselves to helping and assisting a student in need of guidance and mentorship, ST calls on these teachers to be better teachers and to put more effort into the care and education of their students. Locander and Luechauer (2006) state that "servant-leadership embraces the paradox that the best way to get power is to give it away" (p. 45). To apply this to servant teaching, the best way for a teacher to gain knowledge and power as a teacher is to give it away to the students who are hungry for knowledge.

It seems, then, that ST is necessary for the proper development of our students. Witcher states, "As educational leaders we must ask ourselves whether we are trying to create a better system or whether we are operating within the one we have out of resignation, fatigue or expedience. Do we expect people to follow us because we are "in charge" or because we are worthy of their 'followship,' because what we are doing is right. Administrators need to understand that it is possible to move beyond the traditional, established, and often ineffective 'business as usual' practices of our institutions, especially in relation to the area of student discipline" (Witcher, 2003, p. 30).

FUTURE RESEARCH

Considering that ST is in its infancy, there are more questions than answers. One of the pressing areas of research deals with classroom testing of SL tenets that form the foundation of ST. For example, does active listening affect student attitudes toward learning and the actual performance? Does it increase student engagement? Furthermore, there is a need for the development and testing of course methodologies and assessment tools that are explicitly tied to ST.

The concept of ST assumes that students want to be responsible for developing personal knowledge and skills. Yet, there is a question of maturity: Does the age of the students matter in their willingness and ability to take more responsibility for their own learning? Servant teaching also assumes that students are not competitive; yet competition has been engrained in our children from a very early age. Parents are constantly comparing and testing their kids hoping to place them in better childcare, kindergarten, schools, and universities. It will be interesting to see the effects of our culture on the students' attitude toward ST and their ability to perform in a non-competitive environment that is characteristic of ST.

Finally, we need measures to operationalize the concept of ST and the SL tenets in the context of teaching. Methods are important not only from the standpoint of advancing the theory of ST but also from the assessment of learning perspective. Being able to assess students' performance and relate it back to ST would provide tangible evidence of its effectiveness.

CONCLUSION

Servant Leadership theory, a leadership approach where leaders serve those under them, is gaining advocates even in the for-profit sector. By conceptually turning the typical organization hierarchy upside down, SL drastically alters the power structure and the behaviors of the organization's leaders. There are obstacles to applying SL to organizational leadership but there are significant signs of promise also. If we assume that SL is a viable leadership approach and should be employed and taught to future leaders, can we transition to the assumption that it could actually be employed and modeled in teaching? Servant teaching could be a revolutionary approach to teaching college courses such as HRM and being employed in administering universities. Revolutionary… but a giant step forward! Are we ready, willing, bold enough, and paradoxically, humble enough to employ it?

ENDNOTE

REFERENCES

Black, G. L. (2010). Correlational analysis of servant leadership and school climate. Catholic Education: *A Journal of Inquiry and Practice*, 13(4), 437-466.

Bounds, G. (1998). Servant leadership: A model that can pay great dividends. *Dallas Business Journal, (August).* Retrieved from http://dallas.bizjournals.com/dallas/stories/1998/08/31/smallb4.html

Cerit, Y. (2010). The effects of servant leadership on teachers' organizational commitment in primary schools in Turkey. *International Journal of Leadership in Education*, 13(3), 301-317.

Chonko, L. (2007). A philosophy of teaching…and more. *Journal of Marketing Education*, 29(2), 111-121.

Christian Brothers University, Education. (n.d.). *Conceptual framework: Department of education*. Retrieved from http://www.cbu.edu/idc/groups/admissions/documents/web_assets/conceptual_framework.pdf

Crippen, C. (2005). *Servant-leadership* as an effective model for educational *leadership* and management: First to serve, then to lead. Management in Education, 18(5), 11-16.

Dury, S. (2005). Teacher as servant leader: A faculty model for effectiveness with students. *Proceedings of the 2005 Servant Leadership Research Roundtable.* Retrieved from http://www.regent.edu/acad/global/publications/sl_proceedings/2005/drury_teacher_servant.pdf

Elsenpreter, R. (2006). Servant Leadership a model for corporate responsibility. *StarTribune, (July).* Retrieved from http://www.startribune.com/308/story/556578.html

Endres, G.M. & Mancheno-Smoak, L. (2008). The human resource craze: Human performance improvement and employee engagement. *Organization Development Journal*, 26(1), 69-78.

Erez, M. & Arad, R. (1986). Participative goal-setting: Social, motivational, and cognitive factors. *Journal of Applied Psychology, 71*(4), 591-597.

Ganz, M. (2007, February 22). Ganz speech on "Servant Leadership" at University of Portland Alumni Breakfast Meeting.

Gergen, D. (2006). Bad news for bullies. *U. S. News and World Report, (June).*Retrieved from http://www.usnews.com/usnews/biztech/articles/060619/19gergen.htm

Greenleaf, R. K. (1998). *The power of servant leadership*. San Francisco, CA: Berrettt-Koehler Publishers, Inc.

Gitterman, A. (2004). Interactive andragogy: Principles, methods, and skills. *Journal of Teaching in Social Work*, *24*(3/4), 95-112.

Greenleaf, R. K. (1979) *Teacher as Servant.* New York, NY: Paulist Press.

Greenleaf Center for Servant Leadership (n.d.). *What is servant leadership?* Retrieved from http://www.greenleaf.org/whatissl/

Hays, J. M. (2008). Teacher as a servant: Application of Greenleaf's servant leadership in higher education. *Journal of Global Business Issues, 2*(1), 113-134.

Jaschik, S. (2009). Imagining college without grades. Retrieved from http://www.insidehighered.com/news/2009/01/22/grades

Kaifi, B. A. & Noori, S. A. (2011). The best of both worlds: A quantitative study on Afghan-Americans, culture, and servant leadership. *International Leadership Journal, 3*(1), 90-109. Retrieved from http://thomasedisonalumni.com/files/ILJ_Winter_2011_final.pdf#page=91

Kanu, K. Jr (2008). The new schools. *Black Enterprise*, *38*(7), 104-106.

Kinicki, A., & Fugate, M. (2012). *Organizational Behavior* (5th ed). New York: McGraw-Hill.

Klimoski, R. (2007). Introduction: Physician heal thyself. *Academy of Management Learning & Education*, 6(1), 81-83.

Knight, R. (2006). MBAs learn to love non-profit skills development. *Financial Times, (November),* p.7.

Knowles, M. S. (1985). Introduction: The art and science of helping adults learn. In M. S. Knowles and Associates (Ed.), Andragogy in action: *Applying modern principles of adult learning, pp. 1-22. San Francisco: Josey-Bass Publisher*.

Kreitner, R., & Kinicki, A. (2013). *Organizational Behavior* (10th ed). New York: McGraw-Hill.

Locander, W. B. & Luechaurer, D. L. (2006). Trading places. *Marketing Management, 15(*3), 45.

Miller, P. M., Brown, T., & Hopson, R. (2011). Centering love, hope, and trust in the community: Transformative urban leadership informed by Paulo Freire. *Urban Education*, *46*(5), 1078-1099.

Onwuegbuzie, A. J., Witcher, A.E., Collins, K.M.T., & Filer, J. D. (2007). Students' perceptions of characteristics of effective college teachers: A validity study of a teaching evaluation form using a mixed-methods analysis. *American Educational Research Journal, 44(*1), 113-160.

Phillips, S. (2004). Can humility, faith be good for business? NBC News, (February). Retrieved from http://www.msnbc.msn.com/id/4374722/.

Ramero, L. (2011). *Student trust: Impacting high school outcomes.* Riverside, CA: University of California.

Robbins, S. P. & Judge, T. A. (2013). *Organizational Behavior* (15th ed.). Boston, MA: Prentice Hall.

Robinson, P. (2009). Servant teaching: The power and promise for nursing education. *International Journal of Nursing Education Scholarship, 6*(1), 1-15.

Schaubroeck, J., Lam, S. S., & Peng, A. C. (2011). Cognition-based and affect-based trust as mediators of leader behavior influences on team performance. *Journal of Applied Psychology*, *96*(4), 863-871.

Schneider, S. K. & George, W. M. (2011). Servant leadership versus transformational leadership in voluntary service organizations. *Leadership & Organization Development Journal, 32*(1), 60-77.

Sendjaya, S., Sarros, J. C., & Santora, j.C. (2008). Defining and measuring servant leadership behavior in organizations. *Journal of Management Studies, 45,* 402-424.

Spears, Larry (2004). Practicing servant leadership. Leader to Leader, 34, 7-11. Retrieved from http://www.hesselbeininstitute.org/knowledgecenter/journal.aspx?ArticleID=51

Stanzione, A. (2009). The path of servant contract leadership. *Contract Management, 49*(2), 58-65.

Thibodeau, P. (2005). Business unity. *Computerworld*, *39*(1), 17-18.

Viterbo (n.d.). Viterbo University website. Retrieved from http://www.viterbo.edu/msl.aspx?id=1270

Walker, K. D. (2008). Fostering hope: A leader's first and last task. *Journal of Educational Administration*, *44*(6), 540-569.

Witcher, J. K. (2003) Ethical leadership: A promise to keep. *The Delta Kappa Gamma Bulletin*, *69*(3) 27-30.

FACULTY PERCEPTIONS ABOUT DISTANCE EDUCATION TO TEACH MODERN LANGUAGES

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Abstract

This research study presents the results of a survey given to faculty in a Modern Languages Department to measure their perception of Distance Education (DE). The survey used was modified from the Community of Inquiry (CoI) survey which has three subscales of measuring teaching presence, social presence, and cognitive presence. Faculty ranked the ability to have cognitive presence the highest (56% agreeing), ability to have social presence the second highest (52% agreeing), and ability to have teaching presence the third highest (35% agreeing).

Keywords: modern languages, distance education, faculty perceptions, community of inquiry

INTRODUCTION

The industry standard definition for distance education is Sloan Consortium's decade old definition which has remained unchanged, with online or distance education (DE) classes having 80% of course content delivered online (Allen & Seaman, 2008). Allen and Seaman (2011) found that over two-thirds of chief academic officers believe that the quality of distance education is as good as or better than face-to-face instruction, but felt that less than one-third of the faculty at their institution accept the value and legitimacy of DE.

There are pressures on Modern Language departments to offer DE class options to their students in order to provide more flexibility for students whose schedules do not permit attending face-to-face classes (Blake & Delforge, 2004; Zhang & Cui, 2010). While DE is growing (U. S. Department of Education NCES, 2011), many faculty teaching Modern Languages simply feel it will not work for their discipline (MLA Executive Council, 2001). Modern Language faculty feel that teaching a language is different from teaching other subjects because it requires significant social interactions (Dörnyei, 2003). This would be challenging to complete in a DE learning environment. Traditional online courses are heavily developed with text communication that resemble a high-tech correspondence course and does little to encourage interaction needed to provide effective instruction for Modern Languages (Crawford, 2006). The Modern Languages Association (MLA) and the American Association of University Professors (AAUP) question the use of DE for teaching Modern Languages. They state that

there are unique demands for teaching a second language, (L2) and faculty need to employ pedagogical strategies that go beyond mere acquisition of linguistic knowledge such as requiring students to negotiate meaning by speaking, listening, reading, and writing the L2. They go further to say that "this learning process requires a high level of human contact, one that is traditionally facilitated by face-to-face interaction in the language classroom" (MLA Executive Council, 2001). There have been many technological advancements since the MLA Executive Council in 2001 that have enhanced the ability to develop DE classes, but the question remains whether faculty perceptions about DE have changed since then.

There have been some research studies to show success in teaching foreign languages in a DE environment. Chenoweth and Murday (2003) found that students taking Elementary French I in a DE environment had no significant differences in learning from their face-to-face counterparts in "grammatical knowledge, written production, oral production, listening comprehension, and reading comprehension". Students in the DE class had statistically higher differences in their writing than the face-to-face students. Blake and Delforge (2004) conducted research to find that students enrolled in a DE Spanish course performed significantly better than their face-to-face counterpart on discrete grammar tests. Despite research showing success in teaching foreign languages in a DE environment, L2 faculty continue to show high levels of skepticism about teaching L2 classes online.

This research study measures the perceptions of DE by one Modern Language department at a mid-sized Midwest university. It is important to understand faculty perceptions of DE because it is becoming increasingly popular and becoming the preferred mode of learning by many students (Allen & Seaman, 2011). Higher education administrators are beginning to pressure academic departments to develop DE programs because over 90% of chief academic officers rate DE classes as having "superior" or "somewhat superior" scheduling flexibility (Allen & Seaman, 2011). Offering DE courses can result in additional enrollments and ease university scheduling challenges.

Literature Review

There are many foreign language faculty that are skeptical of using DE as a method of delivery to successfully teach L2 classes (Blake, Wilson, Cetto, and Pardo-Ballester, 2008). They believe that there is little interaction between instructors and students in DE classes, that content is posted online, and that there is a one-way content delivery from the all-knowing teacher to the passive student (Jaschik & Lederman, 2013). This type of DE model does not work well for Modern Language classrooms because students need practice in their foreign language skills of listening, speaking, reading and writing (Larsen-Freeman, 1986). This can prove to be challenging in a distance learning environment (Solé

& Hopkins, 2007; Sussex, 1991). Modern Language learners need ample amounts of oral and written input (Krashen, 1985) and also ample opportunities to produce robust oral and written output (Swain, 1995) in their target language. Students learning a second language must collaborate closely with their instructor (Gass, 1997; Pica, 1996; Roberts, 1998) and cannot simply be passive recipients of a lecture. Teacher-centered text-based DE learning environments do not work effectively for Modern Language learning environments.

Modern Language course developers are now being influenced to move away from teacher-centered course design in order to implement DE classes using learner-centered principles (White, 2007). The responsibility of learning shifts from the instructor to the students who take more control of their own learning (Williams & Burden, 1997). Learner-centered classes place the teacher in the role of "guide on the side" to help mentor students. As a result, participants have significant interaction with each other and implement active-learning strategies (Doyle, 2011). This is important for teaching Modern Languages because second language learners cannot learn in isolation. They must have social interaction with other students and the instructor so that they can practice expressing themselves and become aware of various cultural differences (Mollaei & Rahnama, 2012).

Advances in technology now allow Modern Language faculty to begin to consider the possibility of developing learner–centered classes that incorporate technology (Moharrer, 2012; Wang & Vasquez, 2012) to allow students to assume more responsibility of their own learning. Newly introduced cloud-based Web 2.0 tools that are free or inexpensive allow Modern Language instructors to include interactive and engaging tools that enhance the language learning skills of speaking, listening, reading and writing. O'Reilly (2005) coined the term Web 2.0 to identify technology tools that have gone beyond the static, one-dimensional web page to "a Web technology that aims to enhance creativity, information sharing and collaboration among users" (Tu, Blocher & Ntoruru, 2008, p. 336). Students can easily use their speaking skills and sometimes interact online using Web 2.0 tools such as Skype (http://skye.com), Voki (http://voki.com), Blabberize (http://blabberize.com), Glogster (http://edu.glogster.com), VoiceThread (http://voicethread.com), and World of Warcraft (http://us.battle.net/wow/en/). Students can practice their listening skills online using Web 2.0 tools such as YouTube (http://youtube.com), FilmArobics (http://filmarobics.com), Discovery Education Streaming (http://streaming.discoveryeducation.com), Beeline TV (http://beelinetv.com), and Lyrics Training (http://lyricstraining.com). Students can improve their reading skills online using Web 2.0 tools such as Newseum (http://www.newseum.org), ePals (http://epals.com), and Diigo (http://diigo.com). Students also can write online using Web 2.0 tools such as Wikispaces (http://wikispaces.com), Mixbook (http://mixbook.com), Google

Docs (https://drive.google.com/), Blogging (http://edubogs.org and http://blogger.com) and Weebly (http://weebly.com).

While technology is being used to teach foreign language classes, most foreign language teachers are not excited about using a DE format to teach their courses. Blake, Wilson, Cetto, and Pardo-Ballester (2008) reported they met with repeated resistance and skeptical attitudes from other language faculty members and language departments when they were in the process of gaining approval from the UC Berkeley senate to develop an Arabic DE program. The authors felt as if:
Some foreign language (FL) teachers tend to harbor deep-seated doubts as to whether or not a [DE] course could ever provide L2 learners with a way to gain linguistic proficiency, especially when oral language skills are in question. Perhaps others secretly worry that these new [DE] classes might displace them. (Blake, Wilson, Cetto, and Pardo-Ballester, 2008, p. 114)

Teaching Modern Languages requires significant and meaningful interaction between the instructor and the student, which creates a community of learners working together to inquire about the discipline of learning a new language. Garrison (2011) defines an educational community of inquiry as a "group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding" (p. 15). To create successful educational communities of inquiry, instructors need to prepare learning environments that include ample opportunities in which participants are actively engaged in the content using pedagogically effective teaching methodologies (Garrison, 2011). Worthwhile education experiences are composed of teachers and students interacting in the three essential elements of teaching presence, social presence, and cognitive presence (Garrison, Anderson, & Archer, 2000). Teaching presence is defined as the design and facilitation of the cognitive and social processes for students to be able to construct meaningful learning outcomes (Anderson, Rourke, Garrison, & Archer, 2001). Teaching presence is measured by looking at the:
1. Design and organization
2. Facilitation
3. Direct instruction.

Social presence is defined "as the ability of participants in a community of inquiry to project themselves socially and emotionally, as 'real' people (i.e., their full personality), through the medium of communication being used" (Garrison, Anderson, & Archer, 2000, p. 94). Social presence is measured by looking at the:
1. Affective expression
2. Open communication
3. Group cohesion.

Cognitive presence is at the core of education and is defined "as the extent to which learners are able to construct and confirm meaning through sustained

reflection and discourse in a critical community of inquiry" (Garrison, Anderson & Archer, 2001, p. 11). Cognitive presence is measured by looking at the:

1. Triggering event
2. Exploration
3. Integration
4. Resolution.

Allen, Seaman, Lederman, and Jaschik (2012) conducted a survey of 4,564 faculty and found there are many faculty that are conflicted about the ability of DE classes to have adequate levels of instructor presence, social presence, and cognitive presence. The results of the survey showed that faculty questioned the cognitive presence in DE classes with nearly two-thirds (66%) of respondents believing that the learning outcomes for DE classes are inferior or somewhat inferior to face-to-face classes. Faculty also question the ability of DE classes to have adequate levels of social presence. 85% of faculty indicated they feel that interaction with students in DE classes is of lower quality than interaction in face-to-face classes (Jaschik & Lederman, 2013). Faculty also question the ability of DE classes to have adequate levels of teacher presence with two-thirds (67%) of them rating DE classes as being inferior to face-to-face classes in answering students' questions (Jaschik & Lederman, 2013).

A Community of Inquiry (CoI) survey containing 34 questions was developed to measure the interactions of teaching presence, social presence, and cognitive presence from the students' perspective (Swan, Richardson, Ice, Garrison, Cleveland-Innes, & Arbaugh, 2008). The survey posed statements such as, "The instructor clearly communicated important course topics" and students responded using the Likert scale from Strongly Disagree to Strongly Agree. The CoI survey is divided in three sections to measure three subscales. The first thirteen questions measure Teaching Presence, the next nine questions measure Social Presence, and the last twelve questions measure Cognitive Presence. The researchers in this study modified the CoI survey to create a tool that is intended to measure the faculty perception of the ability to teach a DE course that included Teaching Presence, Social Presence, and Cognitive Presence. The modifications included will be discussed in the methodology section.

RESEARCH QUESTIONS

The research questions we will be asking for this study are to investigate the perceptions of faculty in Modern Languages about the ability of DE classes to have adequate levels of teacher presence, social presence and cognitive presence.

METHODOLOGY

Subjects

Participants in this survey included faculty in the Modern Languages Department at a mid-sized university located in the Midwest. A total of 43 full time and adjunct faculty were asked to complete the survey with 23 responses (54%). There were 3 male, 19 female and one person who identified as other. Most of the respondents were inexperienced with DE with 83% (N= 19) of participants indicating they have never taken an online course and 78% (N = 18) never taught a DE course. When asked whether they planned to teach DE classes in the future, 52% (N = 12) indicated that they never plan to do so, 35% (N = 8) reported that they did plan to teach and 4% stated they are already teaching a DE class.

Instrument

A modified version of the CoI survey (Arbaugh, Cleveland-Innes, Diaz, Garrison, Ice & Richardson, 2008) was used to measure the faculty perception of DE. Since the original CoI was developed to measure students' perception of the level of CoI, each of the survey questions needed to be adapted to measure the faculty perceptions. The survey posed statements such as "Distance Education classes allow faculty to communicate effectively with their online students." Participants responded using a 4-scale Likert rating. The DE CoI survey on faculty perception was based on the original CoI subscales with the first thirteen questions measuring Teaching Presence, the next nine questions measuring Social Presence, and the last twelve questions measuring Cognitive Presence. A survey method was chosen to gather data from faculty in an attempt to get their perceptions of the incorporations of DE in the Modern Languages department at this university. This method, rather than conducting individual interviews, was chosen due to their busy schedule.

Procedure

Permission to conduct this survey was requested and granted from the CoI author and the university Institutional Review Board. The online survey was created in Qualtrics, an online survey tool. A link to the survey was sent out via email to the full time and adjunct faculty members of the Modern Languages Department. Responses from each person were gathered anonymously. The survey results were sent to and compiled by a researcher outside the department.

DATA RESULTS

There were 23 faculty that completed the DE Faculty Perception CoI Survey. The Cronbach's Alpha showed internal consistencies with .78 for Teaching Presence,

.89 for Social Presence, and .94 for Cognitive Presence, which is an acceptable level of consistency (George & Mallery, 2003).

Teaching Presence

The first thirteen questions of the survey measured Teaching Presence, which is the ability of an instructor to maintain a strong presence with the class participants while teaching the DE class. The mean response for Teaching Presence ranged from 1.08 to 2.77, with a collective mean score of 2.15 (s.d. = .39). The majority of respondents disagreed with the idea that it is possible to have acceptable levels of Teaching Presence in a DE classroom (M = 2.15). The top statements that participants disagreed with the strongest were (1) Q2-Most faculty would know the process to design an effective DE class (M = 1.52), (2) Q4-Most faculty have the pedagogical knowledge to design an effective DE class (M = 1.87), (3) Q1- Designing a DE class is the same amount of work as designing a face-to-face class (M = 1.95), and (4) Q6-Most faculty would know the process to teach an effective DE class (M = 1.95). The top statements that participants agreed with the strongest were (1) Q10-Faculty can clearly communicate important due dates/time frames for learning activities to help keep their online students on track in DE classes (M = 3.0), (2) Q13- Faculty can help guide students toward deep learning in DE classes (M = 2.63), and (3) Q11- Faculty can identify student misconceptions and help them get back on track in DE classes (M = 2.58).

TABLE 1

CoI Survey

Questions measuring Teaching Presence

Question	N	1 SD	2- D	3 A	4 SA	M	SD
1) Designing a distance education class is the same amount of work as designing a face-to-face class.							
	21	10 47.6%	4 19%	5 23.8%	2 9.5%	1.95	1.07
2) Most faculty would know the process to design an effective distance education class.							
	23	11 47.8%	12 52.2%	0 0%	0 0%	1.52	.51
3) Most faculty have the technical skills to design an effective distance education class.							
	23	5 21.7%	13 56.5%	4 17.4%	1 4.3%	2.04	.77
4) Most faculty have the pedagogical knowledge to design an effective distance education class.							

	23	7	12	4	0	1.8	.69
		30.4%	52.2%	17.4%	0%	7	

5) Teaching a distance education class is the same amount of work as a face-to-face class.

	20	7	6	6	1	2.0	.95
		35%	30%	30%	5%	5	

6) Most faculty would know the process to teach an effective distance education class.

	22	6	12	4	0	1.9	.68
		27.3%	54.5%	18.2%	0%	1	

7) Most faculty have the technical skills to teach an effective distance education class.

	22	3	13	6	0	2.1	.64
		13.6%	59.1%	27.3%	0%	4	

8) Most faculty have the pedagogical knowledge to teach an effective distance education class.

	22	4	11	7	0	2.1	.71
		18.2%	50.0%	31.8%	0%	4	

9) Distance education classes allow faculty to communicate effectively with their online students.

	20	1	10	9	0	2.4	.60
		5%	50%	45%	0%	0	

10) Faculty can clearly communicate important due dates/time frames for learning activities to help keep their online students on track in distance education classes.

	21	1	1	16	3	3.0	.63
		4.8%	4.8%	76.2%	14.3%	0	

11) Faculty can identify student misconceptions and help them get back on track in distance education classes.

	19	1	7	10	1	2.5	.69
		5.3%	36.8%	52.6%	5.3%	8	

12) Faculty can communicate to their online students as effectively in a distance education class as a face-to-face class.

	20	2	15	1	2	2.1	.75
		10%	75%	5%	10%	5	

13) Faculty can help guide students toward deep learning in distance education classes.

	19	1	6	11	1	2.6	.68
		5.3%	31.6%	57.9%	5.3%	3	

Social Presence

The next nine questions of the survey measured Social Presence, which is the ability of participants in an online course to be able to see each other as real people (Garrison, Anderson, and Archer, 2000, p. 94). The mean response for Social Presence ranged from 1.33 to 3.78, with a collective mean score of 2.53 (s.d. = .56). The majority of respondents agreed that it is possible to have Social Presence in a DE classroom (M = 2.53). The statements that participants disagreed with the strongest were (1) Q14- Faculty can develop close relationships with their students in DE classes (M = 2.16), (2) Q18- Online students have the ability to get to know each other in DE classes that helps to give them a sense of belonging (M = 2.26), and (3) Q19- Online students are able to form distinct impressions of the participants in their DE classes (M = 2.26). The statements that participants agreed with the most were (1) Q15- Faculty can help their online students make connections to relevant issues in DE classes (M = 3.0), (2) Q16- Faculty can provide feedback to their online students in DE classes to help them understand their strengths and weaknesses (M = 2.95), and (3) Q22- Faculty feel comfortable communicating to their online students in a DE class (M = 2.83).

TABLE 2
CoI Survey
Questions measuring Social Presence

Question	N	1 SD	2- D	3 A	4 SA	M	SD
1) Faculty can develop close relationships with their students in distance education classes.							
	19	4 21.1%	9 47.4%	5 26.3%	1 5.3%	2.16	.834
2) Faculty can help their online students make connections to relevant issues in distance education classes.							
	20	0 0%	3 15%	14 70%	3 15%	3.00	.562
3) Faculty can provide feedback to their online students in distance education classes to help them understand their strengths and weaknesses.							
	20	1 5%	2 10%	14 70%	3 15%	2.95	.686
4) Distance education classes allow faculty to provide the same amount of feedback they give their students in a face-to-face class.							
	19	4 21.1%	5 26.3%	9 47.4%	1 5.3%	2.37	.895
5) Online students have the ability to get to know each other in distance education classes that helps to give them a sense of belonging.							

	19	2 10.5%	12 63.2%	3 15.8%	2 10.5%	2.26	.806
6) Online students are able to form distinct impressions of the participants in their distance education classes.							
	19	2 10.5%	12 63.2%	3 15.8%	2 10.5%	2.26	.806
7) Group projects can be completed as effectively in distance education classes as face-to-face classes.							
	18	2 11.1%	8 44.4%	7 38.9%	1 5.6%	2.39	.778
8) Distance education classes allow participants to develop a sense of collaboration among participants.							
	18	1 5.6%	10 55.6%	6 33.3%	1 5.6%	2.39	.698
9) Faculty feel comfortable communicating to their online students in a distance education class.							
	18	0 0%	4 22.2%	13 72.2%	1 5.6%	2.83	.514

Cognitive Presence

The last twelve questions of the survey measured Cognitive Presence, the ability of learners to make meaning of the content while working within the learning community (Garrison, Anderson & Archer, 2001, p. 11). The mean response for Cognitive Presence ranged from 1.58 to 3.75, with a collective mean score of 2.58 (s.d. = .55). The majority of respondents agreed that it is possible to have Cognitive Presence in a DE classroom (M = 2.58). The statements that participants disagreed with the most were (1) Q25- DE is an effective method to teach ALL academic disciplines (M = 1.95), (2) Q24- DE is an effective method to teach in MY academic discipline (M = 2.10), and (3) Q31- There is no difference between students staying on track in DE classes and face-to-face classes (M = 2.37). The statements that participants agreed with the strongest were (1) Q29- DE classes allow students to learn the academic content and apply it in practice (M = 2.90). (2) Q30- DE classes can help students develop deep learning that will transfer to their work or other non-class related activities (M = 2.85) and (3) Q33- Students complete as much (or more) work in a DE class as in a face-to-face class (M = 2.84).

TABLE 3

CoI Survey

Questions measuring Cognitive Presence

Question	N	1 SD	2- D	3 A	4 SA	M	SD
1) Students are able to learn as much in a distance education class as a traditional face-to-face class.							
	21	2 8.7%	9 42.9%	8 38.1%	2 9.5%	2.48	.814
2) Distance education is an effective method to teach in MY academic discipline.							
	20	4 20%	10 50%	6 30%	0 0%	2.10	.718
3) Distance education is an effective method to teach ALL academic disciplines.							
	21	5 23.8%	12 57.1%	4 19%	0 0%	1.95	.669
4) Distance education classes can incorporate learning activities that allow students to master the course material.							
	19	0 0%	6 31.6%	10 52.6%	3 15.8%	2.84	.688
5) Distance education classes have the same amount of academic rigor as face-to-face classes.							
	19	2 10.5%	7 36.8%	7 36.8%	3 15.8%	2.58	.902
6) Distance education classes allow for effective assessment of students' learning.							
	19	0 0%	9 47.4%	7 36.8%	3 15.8%	2.68	.749
7) Distance education classes allow students to learn the academic content and apply it in practice.							
	21	0 0%	5 23.8%	13 61.9%	3 14.3%	2.90	.625
8) Distance education classes can help students develop deep learning that will transfer to their work or other non-class related activities.							
	20	1 5%	4 20%	12 60%	3 15%	2.85	.745
9) There is no difference between students staying on track in distance education classes and face-to-face classes.							
	19	3 15.8%	8 42.1%	6 31.6%	2 10.5%	2.37	.895
10) Distance education classes get students motivated to explore content related issues.							

	20	2 10%	6 30%	11 55%	1 5%	2.55	.759
11) Students complete as much (or more) work in a distance education class as in a face-to-face class.							
	19	0 0%	4 21.1%	14 73.7%	1 5.3%	2.84	.501
12) Distance education classes are a valid method to teach students.							
	21	1 4.8%	5 23.8%	13 61.9%	2 9.5%	2.76	.700

DATA ANALYSIS

Since the majority of participants that completed this survey had little experience with DE, either taking a DE course (85%) or teaching a DE course (78%), it was not surprising that they would have concerns about the development of DE classes. The three lowest ratings indicated that the participants had concerns with the preparedness of faculty in designing and teaching DE classes. 100% disagreed that faculty know the process to design an effective DE class, 83% disagreed that faculty have the pedagogical knowledge to design an effective DE class, and 82% disagreed that faculty would know the process to teach an effective DE class. On the surface, these data indicated that the faculty completing the survey did not have access to training, however, robust courses are available at this university to support faculty in learning the technologies, skills, and pedagogies to design and teach DE courses. Allen and Seaman (2011) found that only 6% of higher education institutions have no training or mentoring programs for online teaching faculty. Since 87% of faculty indicated they are not currently teaching an online class, the most likely conclusion is that it was their choice not to attend the distance education professional development classes.

Teaching Presence

The results of the CoI survey indicated that faculty ranked the ability to have teaching presence in DE classes the lowest CoI element with only 35% of faculty agreeing it is possible to have teaching presence in a DE class. This result is not surprising since research has found that teachers teach the way they were taught (Conti, 2004) and the faculty that completed this survey all were taught in a face-to-face format. Accepting the DE format would require many faculty to unlearn their current pedagogy and adopt new learning practices (McWilliam, 2005).

Social Presence

The results of the CoI survey indicated that faculty ranked the ability to have social presence in DE classes the second highest CoI element with 52% of faculty agreeing it is possible to have social presence in a DE class.

Many participants indicated it is possible to effectively communicate to students in online classes with 90% of respondents agreeing that faculty can clearly communicate important due dates and keep students on track, 85% indicating they agreed that faculty can help online students make connections to relevant issues, 85% agreeing that faculty can provide feedback to their students and help them understand their strengths and weaknesses, 78% agreed that faculty feel comfortable communicating with their online students, and 58% agreeing that faculty can identify student misconceptions and help get them back on track.

Cognitive Presence

The results of the CoI survey indicated that faculty ranked the ability to have cognitive presence in DE classes the highest CoI element with 56% of faculty agreeing it is possible to have cognitive presence in a DE class. There were also many participants who indicated that it is possible to have effective instruction with 79% agreeing that students complete as much (or more) work in a DE class as in a face-to-face class. 76% agreed that DE classes allow students to learn the content and apply it in practice. 75% agreed that DE classes can help students develop deep learning that will transfer, and 71% agreed that DE classes are a valid method to teach. 68% agreeing that DE classes can incorporate learning activities that allow students to master the course material, 63% agreed that faculty can guide students toward deep learning, 53% agreed that DE classes have the same rigor as face-to-face and 53% agree that DE classes allow for effective assessment.

DISCUSSION

Conclusions

Teaching Modern Languages has unique demands that require high levels of interaction. The authors agree with the Modern Languages Association (MLA) statement that emphasizes the importance of faculty having the "right, responsibility, and authority" to make decisions about implementing DE technologies into their classroom (MLA Executive Council, 2001). Garrett (1991) made an insightful prediction about the use of technology over two decades ago when she said there was good and bad news about the use of technology to support Modern Language learning. The good news was that technology has the potential to offer enormous enhancements to Modern Language learning. The bad news is that incorporating technology is not easy,

and it "will always require a teacher's considered analysis of that situation and detailed information on the currently available options" (p. 717). Ultimately, it is not the use of any particular technology that will make a Modern Language learning environment successful, but the instructional planning that the instructor does while designing the course (Salaberry, 2001).

As technology continues to advance, there are now many online technologies that allow for high interaction between participants in DE classes. Some of these new technologies will allow our students to reach out and have global interactions with people all over the world, which will open up significantly higher levels of multicultural education in our classes. Modern Language faculty are beginning to incorporate these new technologies into their classes by combining parts of their face-to-face courses into a blended learning environment. As faculty begin to identify technologies that are pedagogically suited to teaching Modern Languages, they can benefit from incorporating them to migrate face-to-face classes to blended learning or fully online learning environments.

The faculty responding to this survey did indicate that learning can take place using DE, but understandably have concerns about their ability to design effective learning activities and have interactions with their students. Since the participants completing this survey had little experience with DE, faculty development programs might help change faculty perceptions. Faculty can attend the generic workshops that are conducted by their centers of teaching and learning to discover how to operate their learning management systems. In addition to the generic learning management system training, L2 faculty need to have faculty development opportunities that are geared to their specific needs for their discipline. In addition to faculty development opportunities, mentoring programs could be set up to provide L2 faculty opportunities for 1-on-1 support and strategy sessions to help them implement new technologies. Rather than faculty comitting to a full-scale DE class, they can begin to implement online lessons into their face-to-face class to gradually build their comfort levels to a point they feel ready to teach a class entirely online.

Study Limitations

The survey tool used to conduct this study was based on an existing tool: the CoI survey (Arbaugh et al., 2008). The CoI Survey was designed to measure students' perception of the level of CoI in their class, so the survey needed to be significantly modified to measure faculty perception of DE that might have an impact on the validity of this survey. The same subscales of teaching presence, social presence and cognitive presence have been capitalized throughout to develop the survey. Another limitation was the fact that only 23 responses to the survey were received, therefore, the information gathered from this survey cannot be generalized to other settings. Since this study was designed to measure the faculty perceptions of DE in Modern Languages at one institution, there are only

43 faculty asked to complete the survey, as a result the number of responses was expected to be small. While the response rate to the survey was acceptable, there were only 43 faculty in the population to begin with. Another limitation is that this study includes only the results of a quantitative survey and does not provide the types of information that could be provided by a qualitative study.

Recommendations for Further Research

This study was conducted at only one institution and provided a limited number of responses. The authors would recommend that this survey be conducted at multiple institutions to measure the faculty perceptions of DE in Modern Languages. This would allow the validation of the survey tool and a comparison of perceptions from different colleges and universities. When this tool was developed, the questions were intentionally left generic so that the survey could be given to faculty in other disciplines. Another recommendation for further research would be to give the survey to faculty in other disciplines and examine whether there are differences in perceptions about DE among disciplines. Additionally, follow up qualitative research studies could be conducted to gather further information from the faculty about their DE perceptions. A qualitative survey could help gather data about the specific issues that L2 faculty have with DE to help gain deeper levels of the challenges or misconceptions they have with teaching L2 classes using DE.

REFERENCES

Allen, I. E. & Seaman, J. (2008). Staying the course: Online education in the United States. Sloan-C. Retrieved from http://sloanconsortium.org/publications/survey/staying_course

Allen, I. E. & Seaman, J. (2011). *Going the Distance: Online Education in the United States, 2011*. Sloan-C. Retrieved from the Sloan Consortium web site @ http://sloanconsortium.org/publications/survey/going_distance_2011

Allen, I. E., Seaman, J., Lederman, D., & Jaschik, S. (2012). *Conflicted: Faculty and online education.* BABSON Survey Research Group. Retrieved from http://babson.qualtrics.com/SE/?SID=SV_bJHd6VpmahG2NGB

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teacher presence in a computer conferencing context. *Journal of Asynchronous Learning Networks, 5*(2), 1-17.

Arbaugh, J.B., Cleveland-Innes, M., Diaz, S.R., Garrison, D.R., Ice, P., Richardson, & Swan, K.P. (2008). Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample. *The Internet and Higher Education, 11*(3-4), 133-136.

Blake, R. & Delforge, A.M. (2004). *Language learning at a distance: Spanish without walls.* Selected papers from the 2004 NFLRC Symposium. Retrieved from http://nflrc.hawaii.edu/NetWorks/NW44/Blake.htm

Blake, R., Wilson, N. L., Cetto, M., & Pardo-Ballester, C. (2008). Measuring oral proficiency in distance, face-to-face, and blended classrooms. *Language Learning & Technology, 12*(3), 114-127.

Chenoweth, N. A., & Murday, K. (2003). Measuring student learning in an online French course. *CALICO Journal, 20*(2), 285-314.

Conti, G. J. (2004). Identifying your teaching style. In M. W. Galbraith (Ed.), *Adult learning methods: A guide for effective instruction* (pp. 73-77). Malabar, FL: Krieger.

Crawford, D. L. (2006). *Characteristics leading to student success: A study of online learning environments.* Texas A&M University- Commerce, United States – Texas: Ed.D. Dissertation.

Dörnyei, Z. (2003) Attitudes, orientations and motivations in language learning: Advances in theory, research and applications. *Language Learning, 53*(1), 3–32.

Doyle, T. (2011). *Learner-centered teaching: Putting the research on learning into practice.* Sterling, Virginia: Stylus.

Garrett, N. (1991). Technology in the service of language learning: Trends and issues. The *Modern Language Journal, 75*, 74-101.

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2-3), 87-105.

Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence and computer conferencing in distance education. *American Journal of Distance Education, 15*(1), 7-23.

Garrison, D. R. (2011). *E-Learning in the 21st Century: A framework for research and practice.* Second Edition. New York: Routledge.

Gass, S. M. (1997). *Input, interaction and the second language learner*. Mahwah, NJ: Lawrence Erlbaum.

George, D. & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference.* Boston: Allyn & Bacon.

Jaschik, S. & Lederman, D. (2013). *The 2013 inside higher ed survey of faculty attitudes on technology.* Retrieved from http://www.insidehighered.com/news/survey/survey-faculty-attitudes-technology

Krashen, S. D. (1985). *The input hypothesis: Issues and implication.* London: Longman.

Larsen-Freeman, D. (1986). *Techniques and principles in language teaching*. New York: Oxford University Press.

McWilliam, E. (2005). Unlearning pedagogy. *Journal of Learning Design, 1*(1), 1-11.

MLA Executive Council. (2001). Special considerations for language and literature: The AAUP statement on distance education. Retrieved from the MLA web site from http://www.mla.org/statement_aaup_distance_ed

Moharrer, Z. (2012). A review on learning style preferences for EFL language learners in online context. *Language in India, 12*(1), 527-548.

Mollaei, F. & Rahnama, H. (2012). Experiential education contributing to language learning. *International Journal of Humanities and Social Science, 2*(21), 268 – 279.

O'Reilly, T. (2005). *What is Web 2.0: Design patterns and business models for the next generation of software.* Retrieved from http://oreilly.com/web2/archive/what-is-web-20.html

Pica, T. (1996). Second Language Learning Through Interaction: Multiple perspectives. *Working Papers in Educational Linguistics, 12*(1), 1 – 22.

Roberts, J. (1998). *Language Teacher Education*. London: Arnold.

Salaberry, M. R. (2001). The use of technology for second language learning and teaching: A retrospective. *The Modern Language Journal, 88*, 39-56.

Solé, C. R., & Hopkins, J. (2007). Contrasting two approaches to distance language learning. *Distance Education, 28* (3), 351-370.

Sussex, R. (1991). Current issues in distance language education and open learning: an overview and an Australian perspective. In G.L. Ervin (Ed.), *International Perspectives on Foreign Language Education* (PP. 177-193). Lincolnwood, IL: National Textbook Co.

Swain, M. (1995). Three functions of output in second language learning. In G. Cook & G. Seidhofer (Eds.), *Principles and practice in applied linguistics: Studies in honor of H. G. Widdowson* (pp. 125-144). Oxford: Oxford University Press.

Swan, K. P., Richardson, J. C., Ice, P., Garrison, D. R., Cleveland-Innes, M., & Arbaugh, J. B. (2008). Validating a measurement tool of presence in online communities of inquiry. *E-Mentor, 2*(24), 1-12.

Tu, C., Blocher, M., & Ntoruru, J. (2008). Integrate Web 2.0 technology to facilitate online professional community: EMI special editing experiences. *Educational Media International, 45*(4), 335–341.

U.S. Department of Education, National Center for Education Statistics. (2011).The Condition of Education 2011(NCES 2011-033).

Wang, S. & Vasquez, C. (2012). Web 2.0 and second language learning: What does the research tell us? *CALICO Journal, 29*(3), 412-430.

White, C. (2007). Focus on the language learner in an era of globalization: Tensions, positions and practices in technology-mediated language teaching. *Language Teaching, 40*, 321-326.

Williams, M. & Burden, R.L. (1997). *Psychology for Language Teachers: A Social Constructivist Approach.* Cambridge: Cambridge University Press.

Zhang, X. & Cui, G. (2010). Learning beliefs of distance foreign language learners in China: A survey study. *System, 38(1), 30-4*

MEASURING TEACHING EFFECTIVENESS: A COMPARATIVE EVALUATION

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Abstract

Student evaluation of teaching (SET) is one of the several mechanisms used to assess student's learning and instructor effectiveness in the classroom. Student evaluation of faculty teaching effectiveness has been used in most universities in the USA as well as across the globe to determine faculty member's ability, knowledge in the subject matter, and instructional effectiveness.

This study develops a modeling approach for including the results of student evaluations as part of an overall Faculty Evaluation Program that includes peer and/or administrators' evaluation. The approach is pragmatic using a subset of the faculty ranking to develop the model. This avoids the problem of using the ranking of all faculty members to develop the model and then testing the model using the same data. The model performance is tested using the Quade test to verify that ranking of the individual faculty members in the subset is justified. The model is regression-based, using the six summary scores obtained from Student Instructional Reports. The model is compared to published results of studies of the evaluation process.

INTRODUCTION

The initial motivation for this study was the requirement for the School of Nursing at Howard University to develop a Faculty Evaluation Program. The plan called for each faculty member to be reviewed with respect to two categories: Teaching Effectiveness and Scholarship and Service. The goal was to provide a numerical index, between 0 and 4, for each faculty member. This index would be a weighted combination of Teaching Effectiveness at 60% and Scholarship and Service at 40% based on the School's Evaluation policy. This summary index would allow the overall ranking of individual faculty members.

Each faculty member being evaluated for Scholarship and Service would be given a score between 0 and 4 by the faculty peer evaluators and the departmental chairperson, based on the faculty member's own predetermined objectives. The annual process of defining the objectives for Scholarship and Service and assigning weights to these objectives provides input into the overall model under which each faculty member would be evaluated. The annual review

would thus give each faculty member an informative feedback of their progress as well as a measure of their performance.

The Teaching effectiveness score also would be a number between 0 and 4 that would be a weighted combination of the following teaching evaluations; Student, Peer, and Chairperson. The weights assigned to each evaluation are: Student, 45%, Peer, 25%, and Chairperson, 30%. The evaluation forms used for the Peers, and Chairpersons evaluations are based on a 0 to 4 scale and a summary score between 0 and 4 is provided. The student evaluation form used by the School of Nursing is the Student Instructional Report(SIR), of the Educational Testing Service.

The SIR instrument consists of six summary factors, where each factor comprises of several questions. While the SIR scores individual questions on a 0 to 4 scale it does not compute a composite score. The SIR gives a score for each of the set of six summary factors:

1. Course Organization and Planning,
2. Faculty/Student Interaction
3. Communication
4. Course Difficulty and Work Load
5. Text Books and Reading
6. Tests and Exams

In addition, the computed score for each of the above categories is not in the 0 to 4 range, but varies based on the number of questions in the category. See Table 1 for the number of questions in each of the above categories and the corresponding range of combined factor score.

TABLE 1
SIR Summary Factor Categories

Factor Categories	Number of Questions	Factor Score Range
X1-Course Organization & Planning	7	3.73-12.22
X2-Faculty/Student Interaction	8	4.44-12.39
X3- Communication	6	4.59-13.03
X4- Course Difficulty & Work Load	3	4.17-12.48
X5-Textbooks & Readings	2	2.93-13.42
X6-Test & Exams	2	4.26-13.00

THE PROBLEM

The problem faced by the school of Nursing was: how to use SIR data to evaluate Faculty Teaching Effectiveness? In particular, how to convert the six Factor

scores into 0 to 4 score? If this conversion can be successfully accomplished and it is valid and comparable to the Dean's ranking, then the same methodology can be used for both the Peers and the Chair's evaluation of faculty members and the composite teaching index for teaching effectiveness can be established, using the weights above.

RELEVANT LITERATURE

Since the evaluation of faculty with respect to teaching effectiveness plays an important role in promotion, retention, and tenure decisions, the topic of student evaluations has been extensively studied. Early work was focused on the instrument itself, the student surveys. Bendig (1954) addressed the issue of how to utilize the results of multiple single scales. Simple summing of the individual question results would obscure important information; on the other hand the combining of inter-correlated questions to develop fewer indices would lead to easier interpretation of the results. Bendig (1954) using Factor Analysis and the Purdue Rating Scale for Instruction found that three factors accounted for eighty percent of the variance in instructor ratings. Each factor combines a set of variables and is named subjectively based on the nature of its constituent variables and their respective coefficients. The factors developed by Bendig (1954) aggregated the original SIR factors into three factors labeled as follows:

General - comprises all the variables except one
Instructional Competence - and
Instructor Empathy.

As the teaching evaluation instruments were applied to the measurement of instructor effectiveness several concerns surfaced. Of primary concern was whether or not the instruments were valid; that is, do student ratings correlate with teaching effectiveness. In addition, questions of bias arose; that is, were external and uncontrollable factors biasing the student ratings. Among the bias concerns were: the effects of actual or expected grades, the course difficulty, the personality/attitudes of the instructor and student, the perceived value of the course, and the impact of class size.

An excellent summary of these issues is contained in an article by McKeachie (1979). McKeachie (1979) concluded that student ratings are a valid measure of teaching effectiveness. With respect to biasing factors the conclusions are that the value/difficulty of the course and the sex of the instructor have no effect on the ratings. Results with respect to faculty rank, student personality, and relative leniency in grading are inconclusive. Finally, class size, whether or not the course is required, and instructor personality do impact the ratings.
However, in a recent study by Agarwal, Gong, Mukherji and Turner (2012), they concluded that there is no significance difference between average student evaluations scores for small and large classes or between undergraduate and

graduate classes taught by the same faculty member. This finding conflicts with that of McKeachie (1979) and may point to differences in some of the factors analyzed.

Abrami, Perry, and Leventhal (1982) studied the impact of student and instructor personality characteristics on student ratings. They concluded that there is no significant correlation between student personality characteristics and student ratings. However, teacher characteristics are correlated with student ratings. They conclude that student ratings are the best used for classifying instructors rather than ranking instructors. Howard and Maxwell (1982) studied the effects of grades and student satisfaction on student ratings. They concluded that grading leniency had a minor effect on ratings but that student motivation; that is, the students desire to take the course, had a significant impact on ratings and thus should be controlled. Barth (2008) also concluded that grading leniency has no significant effect on student rating. Hofman and Kremer (1980) concluded that when students and instructors share common attitudes towards higher education the instructor is more likely to receive a higher rating. Hills et. al. (2009) was able to show that the importance of any particular rating item depends on the student's characteristics such as class year, where upper-class students are most likely better able to focus on issues such as course structure, appropriateness of workload, relevance of materials and exams. Overall and Marsh (1980) studied the effect of time on ratings. In particular, they were concerned if ratings would change based upon experience following the graduation. They had students re-evaluate the instructors one year after graduation. The author concluded that time does not affect the evaluations.

A comprehensive study of the correlation between student ratings and teaching effectiveness as measured by student achievement was done by Cohen (1981). Cohen overcame one of the weaknesses of prior studies, small sample size, by using the results of the prior studies as the basic data for the analysis. As a measure of teaching effectiveness Cohen used the generally accepted notion that student learning is not the most effective measure of student achievement. Thus Cohen (1981) used only studies that used student learning as the surrogate measure of teaching effectiveness. Based on these studies Cohen (1981) found a mean correlation of 0.47 between student ratings and student achievement, with a 95% confidence interval of .09 to .73. Cohen (1981) considered this to be as strong correlation; thus concluding that student ratings are a valid measure of teaching effectiveness. The student rating instrument results were subdivided into six dimensions of teaching. These were skill, rapport, structure, difficulty, interaction, and feedback. The correlations between student achievement and each of the six factors was also studied. The mean correlations for skill, rapport, structure, difficulty, interaction, and feedback were found to be .50, .31, .47, -.02, .22, and .31, respectively. The 95% confidence intervals on skill and structure were in the positive range; that is, the intervals did not contain any negative correlations. Cohen (1981, pp. 305) concluded that

"*Students do a pretty good job of distinguishing among teachers on the basis of how much they have learned. Thus, the present study show much they have learned. Thus, the present study lends support to the use of rating as one component in the evaluation of teaching effectiveness. Both administrators and faculty should feel secure that to some extent ratings reflect an instructor's impact on students*."

One area that Cohen (1981) noted for future study was that few studies had been made on advanced courses. This raises that question of whether or not other influences, such as student interest, may have a more significant impact on student achievement in advanced courses. Briggs, Champion, and Gosenpud (1990) studied an upper level required course in a school of business curriculum, "Production and Operation Concepts". They studied the correlation between the student responses and student achievement to the student response to two single questions relating to Best Professor and Best Course. They concluded that low correlations between student achievement and student response to Best Professor and Best Course indicate that the single question Best Professor should not be used in personnel decisions. Unfortunately, they did not report on the correlations between the key factors Skill and Structure and student achievement that were determined to be significant in the Cohen study.

Another increasing concern that is beginning to emerge in the literature is that of computing composite score using arithmetic average of the SIR scores which conveys the impression that all aspects of the evaluation are of equal weight. The question of weighting extends to the weights used in the computation of the overall teaching effectiveness for combining ratings from students, peers, chair and the Dean. It is an open question whether any particular set of fixed weights is the appropriate one (Rogge, 2011).

Therefore, the general conclusions that can be drawn from the prior research are:

1. Student evaluations are a valid measure of teaching effectiveness as defined by student achievement/learning.
2. Some external factors; in particular, class size, interest in taking the course, and instructor personality, do influence the student evaluations.
3. Two factors; that is subcategories of the student evaluations, skill and structure are strongly correlated with student achievement.
4. When teaching effectiveness is part of a personnel decision; e.g. appointment, promotion, or tenure, student evaluations should be only one part of the teaching assessment process. The student evaluation is a good measure of student achievement; however, evaluation of content, goals, and level of achievement should involve peer evaluations.

METHODOLOGY

The model development utilized the results of the student evaluations from the 1989- 1990 academic year. The major difficulty is the lack of an absolute measure; that is the most common measure of student achievement, with which to correlate the results of the student evaluations. It was decided to select 6 faculty members from the population of 25. The criteria would be that these 6 could be assigned a score with respect to teaching effectiveness and that these scores would be consistent with the SIR data. The reason for using a subset of the faculty was to eliminate the need to rank all faculty members and then assign 0-4 ranking to each. This task would have required too fine a definition of individual scores between faculty members and the Dean can make a better comparison and more effective distinction with less than seven subjects based on Miller's Law (Miller, 1956).

Before proceeding with the model development that would use scores provided by the Dean it was necessary to verify that the student evaluations, SIR (Student Instructional Report) data, could be used for individual comparisons of the six faculty members. This test was performed using the nonparametric Quade test as explained in the Analysis section below. Since the data passed the Quade test, multiple regression analysis would be used to develop the model. The Dean was responsible for assigning a teaching effectiveness rating, between 0 and 4, to each of the six faculty members. A regression model was developed for teaching effectiveness using the Dean's qualitative ratings, acting as the dependent variable and the 1989-90 academic year SIR results as the independent variables. This faculty data was then tested by performing a ranking of all faculty members for the 1989-90 academic year data. The full ranking was then reviewed to see if the results of the ranking were in general consistent. The ranking should not be expected to be precise but it should be   accurate and fair.

ANALYSIS

The Dean selected six faculty members that could be clearly distinguished with respect to Teaching Effectiveness. The results from the 1989-1990 academic year were collected for the six faculty members and the Dean assigned a Teaching Effectiveness score for each. The 1989-1990 SIR results for the six are shown in Table 2a. The Dean's ratings and the number of courses taught by each faculty member is shown in Table 2b.

The Quade Test

The Quade test, Conover (6), is a nonparametric test (similar to ANOVA) that uses rankings to detect differences in multiple subjects based on several related samples of an experiment on each subject. A nonparametric test is appropriate for

the initial analysis of the data in Table 2a since this test does not require that the data be normally distributed. The objective of the test in this case was to

TABLE 2A:
Baseline Data of Factor Category Scores for Each Courses Taught by Each Faculty Member

| Faculty | Number of Courses | Factor Categories | | | | | | Class Size |
		X1	X2	X3	X4	X5	X6	
A	3	11.70	12.38	9.02	11.36	10.49	N/A	8
		11.94	12.38	11.45	10.93	N/A	N/A	5
		11.37	12.20	10.44	10.74	N/A	N/A	8
B	4	12.04	12.38	10.81	11.51	11.96	12.34	19
		11.59	12.38	8.04	12.24	11.79	12.01	11
		12.00	12.12	11.04	10.11	12.79	N/A	5
		11.85	12.38	11.14	10.71	12.48	N/A	5
C	3	5.88	6.10	7.88	8.03	10.67	7.74	22
		6.09	6.64	8.46	8.70	9.84	7.57	26
		6.65	7.83	8.38	9.43	N/A	7.96	N/A
D	2	8.86	9.18	8.78	8.53	11.17	9.19	22
		8.09	8.09	9.24	10.96	9.43	8.03	16
E	4	9.61	9.46	9.64	10.55	9.81	9.34	11
		9.43	9.22	8.81	8.90	11.48	9.58	15
		7.55	7.97	7.98	9.23	N/A	7.32	N/A
		10.86	10.78	9.43	10.27	10.91	11.16	37
F	4	9.56	9.58	9.23	11.12	11.24	10.85	21
		10.17	10.16	8.57	9.58	10.93	9.37	14
		10.19	10.72	8.68	9.58	9.42	10.98	9
		10.64	10.56	8.72	10.63	0.48	10.84	N/A

TABLE 2B
Dean's Composite Rating of Faculty Members' Effectiveness

Faculty Member	Dean's Rating	Number of Courses
A	3.75	3
B	3.75	4
C	1.75	3
D	2.50	2
E	3.25	4
F	3.00	4

determine if the results of the Factor scores could be used to detect differences in the individual faculty members. The Factor scores are thus the blocks and the faculty are the treatments in the test. The process begins by ranking each faculty

based on their score on each Factor. The results are shown in Table 3. The rankings are based on the average score for each faculty on each Factor.

TABLE 3
Faculty Rank within Block

Blocks	Treatments (Faculty A ….F) Faculty Rank R(i,j)					
SIR Factors	A	B	C	D	E	F
X1	5	6	1	2	3	4
X2	6	5	1	2	3	4
X3	6	5	1	4	3	2
X4	5	6	1	3	2	4
X5	3	6	1	2	5	4
X6	5	6	1	2	3	4

Coincidentally, the X6 score for faculty member A was the average of the X1-X5 scores for faculty A For the remaining faculty members, each X6 value is approximately the average of X1 to X5 This suggests that we explore the possibility of collinearity.   The statistic S_{ij}, that represents the relative overall ranking of each entry is computed. The results are shown in Table 4.

TABLE 4
Ranking Statistics

Blocks	Factor Rank	S_{ij} $= Q_i * [R(i, j) - ((k+1)/2)]$					
SIR Factors	Q_i	A	B	C	D	E	F
X1	6	9	15	-15	-9	-3	3
X2	5	12.5	7.5	-12.5	-7.5	-3	3
X3	2	5	3	-5	1	-1	-3
X4	3	4.5	7.5	-7.5	-1.5	-4.5	1.5
X5	1	-0.5	2.5	-2.5	-1.5	1.5	0.5
X6	4	6	10	-10	-6	-2	2
$S_j = \sum S_{ij}$		36.5	45.5	-52.5	-24.5	12	7

k= the number of treatments= 6

The first step in the Quade test is to test the Null Hypothesis: The rankings of the faculty within the Factors (Blocks) are equally likely. The test statistic is given by:

$$T1 = (b - 1)\frac{B1}{(A1 - B1)} \tag{1}$$

1: Where b = number of blocks (i.e. dependent variable factor scores, X1 to X6), and

A1 and B1 are given by:

$$2 \quad A1 = \sum_i \sum_j S^2_{ij} \tag{2}$$

$$3: \quad B1 = \frac{1}{b} \sum_j S^2_j \tag{3}$$

Where i = 1, .., k = 6 and j = 1, …, b = 6

Performing the calculations yields, T1=13.31.

The F value = 4.53 for the threshold of 0.95 quartile with degrees of freedom k_1 and k_2 where k_1= (k-1) = (6-1) = 5; k_2= (b-1) (k-1) = (6-1) (6-1)=25 and
k is the number of faculty (treatments),
see F Distribution Table A26, Conover (6, pg. 483).

Thus the null hypothesis of no difference can be rejected and multiple comparisons can be made between faculty members using the Factor score rankings.

The next step was to make pair-wise comparisons of the six faculty (see Table 5). Two faculty members were considered different if the following inequality is satisfied.

$$| S_i\text{-}S_j | > t_{1-\alpha/2} \ [\frac{2b(A1 - B1)}{(b-1)(k-1)}] \tag{4}$$

Where $t_{1-\alpha/2}$ is obtained from the t distribution with 25 degrees of freedom. . The right hand side of the inequality is 29.82. The result of the pair-wise comparisons is shown in Table 5.

TABLE 5
Pair-wise Comparisons of Faculty Members

Faculty	Faculty (Ranked by S_i)				
Rank Order	A	F	E	D	C
B	NS	S	S	S	S
A		NS	S	S	S
F			NS	S	S
E				NS	S
D					NS
NS=not significant S=significant					

Thus it has been shown that; in general, that the Dean's choices of the Faculty can be ranked, and that the data from the SIR reports supports this ranking. The only issue in question is that adjacent pairs of faculty cannot be ranked; at least not at the α=.05 level. Consequently, two points must be made; first, the Quade test uses rankings, thus information on the relative distance between faculty members as provided by the SIR score is lost. Second, in some cases the Dean's qualitative scoring reflects this inability to recognize differences; for example, both A and B are scored at 3.75. On the other hand, faculty member D and C can be ranked if α is increased to .10, this is consistent with the Dean's ratings of 2.5 and 1.75 for D and C, respectively. Thus the nonparametric analysis has demonstrated that the faculty members chosen can be ranked on the basis of SIR scores.

THE REGRESSION MODEL

A correlation analysis was performed to test for collinearity, the results are shown in Table 6.

TABLE 6
Correlation Matrix for SIR data

Factor	X1	X2	X3	X4	X5	X6
X1	1.000	0.986	0.478	0.713	0.478	0.924
X2		1.000	0.423	0. 720	0. 485	0. 943
X3			1.000	0.445	0.154	0.411
X4				1.000	0.246	0.695
X5					1.000	0.543
X6						1.000
Note: Due to missing data this correlation is based on 13 out of 20 samples.						

The results for the complete data, X1-X6, are based on 13 data samples since in some cases data is missing due to insufficient responses to the questionnaire. As

could be expected collinearity that was suspected previously is significant. In order to see the effect of using the complete data for each factor, i.e. all 20 data points, X5 and X6 with missing data were dropped. Table 7 shows the correlation of X1-X4. As expected, the variables exhibit high collinearity and the results are similar to Table 6.

TABLE 7
Correlation Matrix for Abridged SIR Data

Factor	X1	X2	X3	X4
X1	1.000	0.983	0.677	0.723
X2		1.000	0.663	0.737
X3			1.000	0.444
X4				1.000
Note: This correlation uses all 20 samples.				

Due to the high degree of collinearity it was decided to use step-wise regression to develop the model. Using the Dean's ratings as the dependent variable and the X1-X6 factor scores as the independent variable, a step-wise regression was performed. For the step-wise regression the parameters were: significance level to enter was .05, significance level to leave was .10, and cut off value for tolerance was .001. This analysis produced a simple regression model that was based on X1 alone. The model had an R-squared value of .911, with an F value of 113.95. Since this model used only 13 data points, due to missing data, another step-wise regression was run. This second model used the Dean's ratings as the dependent variable and the X1-X4 factors as the independent variables. Since there are no missing data this model was based on all 20 data points. Again the model was a simple regression model,

$$Y = -0.03125 + 0.31685 \, X1 \qquad\qquad (5)$$

For this model the R-Squared value is 0.847, the F value is 100.03, and the Standard Error of the Estimate is .28.

The next step was to compare the model's ratings to the Dean's ratings. This comparison in Table 8 shows that there is an inconsistency between the Dean's ratings and the students' ratings. The student ratings reverse the ranking of faculty E and F.

This reversal is caused by faculty F having a higher average score on Factor X1 than faculty E. Since the purpose of the effort is to develop a student rating model it was decided to let the student preference take priority over the Dean. Thus the Dean's ratings for E and F were swapped. Based on the new dependent variables a new regression model was developed.

TABLE 8A
Dean's Rating versus Students' Rating

Faculty	Dean's Rating	Model (Students') Rating	Average Score for X1
A	3.75	3.67	11.67
B	3.75	3.73	11.87
C	1.75	1.94	6.21
D	2.50	2.66	8.48
E	3.25	2.93	9.36
F	3.00	3.18	10.14

TABLE 8B
Faculty Rank by Dean versus Faculty Rank by Students

Dean's Rank	Model (Students') Rank	Average Score for X1, Corresponding to Model's Ranking
A	A	11.67
B	B	11.87
E	F	10.14
F	E	9.36
D	D	8.48
C	C	6.21

The new and recommended model is

$$Y = -.12873 + .32680 \, X1 \tag{6}$$

For this model R-squared is .902, the F value is 164.78, and the Standard Error of the Estimate is .225. This model was again based on step-wise regression using Factors X1-X4 as the dependent variable. With a threshold value of 26.87 on the F value for an α of .01 the model is a very good fit.

The 89-90 results of the student evaluations of the faculty were collected. This consisted of 44 data points, again some data points were incomplete with respect to X5 and X6. The model given by equation (6) was applied to the full faculty, where an individual faculty member taught more than one course the average Student Teaching Effectiveness Rating for the courses was computed. The distribution of the scores is shown in Table 9. Based on a review of these scores it was felt that the model adequately represented the ranking of the faculty from the student's perspective. Excluding the single lowest score the range of the scores was 1.12 which is 4 Standard Errors of the Estimate. Four distinct

groupings emerged, that is gaps between adjacent scores were approximately one Standard Error of the Estimate. These groupings were: 3.59-3.75 with 4 faculty members, 2.85-3.34 with 15 faculty members, 2.63-2.65 with 2 faculty members, and below 2.0 with one faculty member. Since these results are what would be anticipated by any statistical model it is felt that the model is representative of the student evaluations.

TABLE 9:
Distribution of Ratings

Range	Number of Faculty
0 – 0.50	0
0.51 – 1.00	0
1.01 – 1.50	0
1.51 – 2.00	1
2.01 - 2.50	0
2.51 – 3.00	9
3.01 – 3.50	8
3.51 – 4.00	4
Total	22

CONCLUSIONS

A model was developed that allows the results of the student evaluations to be included as one element of an overall faculty evaluation program. In order to be able to clearly distinguish between individual faculty members in developing the model, a subset of faculty members was selected for the analysis. This avoided the problem of using the data used in building the model to test the model's performance. The resulting data was tested to verify that rankings could be made by using the Quade test. A regression model was developed that assigns a 0-4 score for each faculty member based on the results of the student evaluations. The model was found to be consistent with existing research; that is, the model is based on the variable organization and planning. Course Structure, which is the equivalent of course organization and planning, was found by Cohen to be highly correlated with student achievement. Finally, the overall evaluation program uses inputs from both peers and chairpersons. Peers and Chairpersons evaluations bring a different perspective especially with respect to course structure. Thus it is our recommendation that student evaluations not be the sole source of data for a teaching evaluation program.

REFERENCES

Abrami, P.C., Perry, R.P. and Leventhal, L. "The Relationship between Students Personality, Teacher Ratings, and Student Achievement", *Journal of Educational Psychology, 1982, Vol. 74, No.1, 111-125.*

Agarwal, K., Gong, W., Mukherji, S., and Turner, C., "An Analysis of Student Evaluations of Faculty Teaching", *Presentation, Howard University, May, 2012.*

Barth, Michael M. (2008), "Deciphering Student Evaluations of Teaching: A Factor Analysis Approach," *Journal of Education for Business, September/October, 2008, 40-47.*

Bendig, A.W., "A Factor Analysis of Student Ratings of Psychological Instructors on the Purdue Scale", *The Journal of Educational Psychology, 1954, Vol. 45, No. 7, 385-393.*

Briggs, J.R., Champion, W.M., and Gosenpud, J.J., "The Student Evaluation of Instructors in Required Operations Management Courses", *Operations Management Review, 1990, Vol. 8, No. 2, 14-30.*

Cohen, P.A., "Student Ratings of Instructors and Student Achievement: A Meta-Analysis of Multisection Validity Studies", *Review of Educational Research, 1981, Vol. 51, No. 3, 281-309.*

Conover, W.J., Practical Nonparametric Statistics, 2nd Edition, John Wiley and Sons, New York, (1980).

Hills, Stacey B., Naegle, Natali, and Bartkus, Kenneth R., (2009), "How Important Are Items on a StudentEvaluations? A Study of Item Salience." *Journal of Education for Business, May/June, 2009, 297-3003*

Hofman, J.E. and Kremer L., "Attitude Toward Higher Education and Course Evaluation", *Journal of Educational Psychology, 1980, Vol. 72, No. 5, 610-617.*

Howard. G.S. and Maxwell, S.E., "Do Grades Contaminate Student Evaluation of Instruction?" *Research in Higher Education, 1982, Vol. 16, No.2, 175-188.*

McKeachie, W.J., "Student Ratings of Faculty: A Reprise", Academe, October 1979, pp. 384-397.

Miller, G. A. (1956). "The magical number seven, plus or minus two: Some limits on our capacity for processing information". *Psychological Review 63 (2): 81–97.*

Overall, J.U. and Marsh, H.W., "Students' Evaluation of Instruction: A Longitudinal Study of their Stability", *Journal of Educational Psychology, 1980, Vol. 72, No. 3, 321-325.*

Rogge, Nicky (2011), "Granting Teachers the 'Benefit of the Doubt' in Performance Evaluations", *International Journal of Educational Management, Vol. 25, No. 6, 590-614*

THE CASE FOR A SMS TEXTING INTEGRATED CLASSROOM: LEARNING PREFERENCES AND STUDENT PERCEPTIONS

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Abstract

This paper synthesized two studies on whether or not student learning preferences and website usability influenced the use of a collaborative learning technology used to encourage student engagement. The collaborative learning technology was an interactive website that also received short-message-service (SMS) texts. Learning preferences was determined by Myer-Briggs Personality Type Indicator (MBTI®) and student perceptions of the collaborative learning technology were determined with a website usability survey. The results of this study found that most students regardless of their learning preference perceived that the use of SMS texting improved their understanding of course material as well as encouraged other students to participate more in class but it did not encourage individual students to participate more. Lastly, this study makes the case that SMS texting is an improved alternative to other personal response systems such as clickers due to the almost ubiquitous nature of SMS texting amongst college students.

Keywords: learning preferences, short-message-service (SMS) texting, student engagement, blended learning, MBTI®, Clickers, Open-Source Technologies, Blackboard™, Wordpress

INTRODUCTION: IS TALKING DYING?

A September 6, 2012 Time magazine article entitled, We never talk anymore: The problem with text messaging, presents evidence that talking face to face and over the phone is dying and text messaging is becoming the preferred method of communication. Kluger (2012).   This article Kluger writes:

"Americans ages 18-29 send and receive an average of nearly 88 text messages per day, compared to 17 phone calls. The numbers change as we get older, with the overall frequency of all communication declining, but even in the 65 and over group, daily texting still edges calling 4.7 to 3.8. In the TIME mobility poll, 32% of all respondents said they'd rather communicate by text than phone, even with people they know very well. This is truer still in the workplace, where communication is between colleagues who are often not friends at all. "No more trying to find time to call and chit-chat," is how one poll respondent described the business appeal of texting over talking."

The problem, of course, is what's lost when that chit-chat goes. Developmental psychologists studying the impact of texting worry especially about young people, not just because kids are such promiscuous users of the technology, but because their interpersonal skills — such as they are — have not yet fully formed. Most adults were fixed social quantities when they first got their hands on a text-capable mobile device, and while their ability to have a face-to-face conversation may have eroded in recent years, it's pretty well locked in. Not so with teens. As TIME has reported previously, MIT psychologist Sherry Turkle is one of the leading researchers looking into the effects of texting on interpersonal development. Turkle believes that having a conversation with another person teaches kids to, in effect, have a conversation with themselves — to think and reason and self-reflect. "That particular skill is bedrock of development."

We submit, anecdotally, that it would be difficult to find a college faculty member who has not observed or had to address texting, and often excessive texting in the classroom. As students increasingly bring technology into the classroom, the authors raise the question; can student desire to text as a preferred method of communication be harnessed to enhance the classroom experience for all student learning preferences and if so, shouldn't we?

SMS TEXTING IN CLASS

Over the last several years, researchers have found that increasingly SMS texting is being used in the classroom (Markett, Sanchez, Weber, and Tangney, 2006; Lim, Hocking, Hellard, and Aitken, 2008; Riordan and Traxler, 2005; and Graham and Miaoulis, 2010). According to Riordan and Traxler (2005) and Graham and Miaoulis (2010) the rationale for allowing SMS texting in the classroom generally falls into the areas of student engagement and retention. Graham and Miaoulis (2012) and Ng'ambi (2006) found that SMS texting in class also supports student participation and knowledge sharing. Kinsella (2009) makes a great succinct point for the value of SMS texting in class by saying;

"(SMS texting) represents a new communication channel between the Many (students) and the One (lecturer). It facilitates student interaction within the class, and with the lecturer, and allows the lecturer to respond to student observations, questions and comments in a controlled manner in a large classroom." (p. 95).

Sms Texting In The Classroom: The Good And Bad News

In 2010 Graham and Miaoulis found aggregately that allowing students to participate in classroom discussions using SMS text messaging did increase student participation and improve the overall discussion held in class (p.39). See table 1 and 2 below.

TABLE 1:
I felt that more students participated in class because of the SMS texting website

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5: Strongly Agree	44	25.1	25.4	25.4
	4	60	34.3	34.7	60.1
	3	51	29.1	29.5	89.6
	2	14	8.0	8.1	97.7
	1: Strongly Disagree	4	2.3	2.3	100.0
	Total	173	98.9	100.0	
Missing	System	2	1.1		
Total		175	100.0		

TABLE 2:
I felt that SMS texting questions sent by students improved classroom discussion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5: Strongly Agree	60	34.3	34.7	34.7
	4	64	36.6	37.0	71.7
	3	35	20.0	20.2	91.9
	2	11	6.3	6.4	98.3
	1: Strongly Disagree	3	1.7	1.7	100.0
	Total	173	98.9	100.0	
Missing	System	2	1.1		
Total		175	100.0		

Additionally, in the same study, Graham and Miaoulis found that individual students perceived that using the SMS texting website in class did not encourage them to participate more in class discussions. See table 3 below.

TABLE 3:
I found that the SMS texting website motivated me to participate more in class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5: Strongly Agree	29	16.6	17.0	17.0
	4	47	26.9	27.5	44.4
	3	60	34.3	35.1	79.5
	2	27	15.4	15.8	95.3
	1: Strongly Disagree	8	4.6	4.7	100.0
	Total	171	97.7	100.0	
Missing	System	4	2.3		
Total		175	100.0		

This seemingly contradictory information opens new questions about the perceptions students have about the value of using SMS texting in class to increase student engagement. A follow up study was done by Graham, Anchors and Doore (2012) on whether or not learning preferences influenced student's decision to use SMS texting in class.

WHY STUDENT LEARNING PREFERENCES

There has been considerable research within the context of online learning and MBTI® learning preferences beginning with Dewar and Whittington (2000), Russell (2002), Mupinga, Nora, and Yaw (2006), Butler, Pinto-Zipp (2006), and Zajac (2009). The use of mobile technologies to stimulate learning has been researched by Ho and Ho (2011) and SMS texting has been researched as a tool to support classroom learning to encourage student interactivity by Markett, Arnedillo Sánchez, Weber, and Tangney (2006). Sharples, Taylor and Vavoula (2010) explored the use of mobile learning through conversation and across contexts. Despite considerable research in the areas of mobile technology in education, few researchers have integrated SMS texting as a classroom response system recognizing student learning preferences. Thus, MBTI learning preferences and SMS texting provides a strong next step in the investigation of computer mediated communication.

Graham, Anchors, and Doore (2012) used the MBTI® to determine student learning preferences. Data on student learning preference that had been gathered previously as part of a class assignment on helping students understand their leadership preferences was compared against the SMS texting website usability

survey results. Students who completed both the personality type indicator test and the SMS texting website usability survey had the results compared against each other to determine whether a correlation exists between personality type and the decision to use the SMS text enabled website. Student names on both instruments received confidential treatment. The comparison of the two data sets was analyzed to provide an answer to the studies research question which asks "Does student learning preferences relate to receptiveness to the application of this classroom technology?"

DESCRIPTIVE STATISTICS

Of the 175 students who participated in the study, matched data was available for 67 students, who had taken the MBTI®. A total of 29 females (43.3%) and 38 males (56.7%) responded to the survey. There was no significant difference in the proportion of male or females, introverts/extraverts, sensing/intuitive, or thinking/feeling individuals. The proportion of judging individuals was, however, significantly greater ($\chi2 = 7.90$, p = .005).

Table 4 below breaks down the dimensions of the study population by Personality type;

TABLE 4
MBTI® Personality Types

Trait	*n*	%
EXTRAVERT	34	50.7%
INTROVERT	33	49.3%
SENSING	39	58.2%
INTUITIVE	28	41.8%
THINKING	40	59.7%
FEELING	27	40.3%
JUDGING	45	67.2%
PERCEIVING	22	32.8%

LEARNING PREFERENCES AND DECISION TO USE SMS TEXTING WEBSITE

To determine whether there were differences in the response patterns of Introverted vs. Extraverted (EI), Sensing vs. Intuitive (SN), Thinking vs. Feeling (TF), or Judging vs. Perceiving (JP) individuals, a series of independent samples t-test were conducted. Specifically, independent samples t-tests were conducted to compare responses of the EI, SN, TF, and JP pairs for the two factors found in

this scale (ease of use, experience with the intervention). Results indicated no significant differences in mean ratings for either factor as related to any of the four personality dimensions measured by the MBTI®). Table 5 displays the mean ratings for each of the four personality dimensions for ease of use, while Table 6 reflects the same comparisons for the seven experiences with the intervention questions.

TABLE 5
Mean ease of use ratings by personality type.

	N	Mean	SD	t	df	Sig. (2-tailed)
EXTRAVERT	34	1.68	0.75	-.614	65	0.541
INTROVERT	33	1.79	0.74			
SENSING	39	1.81	0.78	1.06	65	0.295
INTUITIVE	28	1.62	0.68			
THINKING	40	1.73	0.75	0.27	65	0.979
FEELING	27	1.73	0.74			
JUDGING	45	1.76	0.76	-0.38	65	0.704
PERCEIVING	22	1.68	0.71			

TABLE 6
Mean engagement ratings by personality type.

	N	Mean	SD	t	df	Sig. (2-tailed)
EXTRAVERT	34	2.27	0.78	-1.16	65	0.268
INTROVERT	33	2.50	0.91			
SENSING	39	2.38	0.81	-0.94	65	0.925
INTUITIVE	28	2.40	0.90			
THINKING	40	2.49	0.94	1.23	65	0.223
FEELING	27	2.23	0.66			
JUDGING	45	2.31	0.77	-0.989	65	0.326
PERCEIVING	22	2.53	0.98			

LEARNING PREFERENCE FINDINGS

According to Graham, et al (2012) no significant differences were found between the four MBTI® learning preferences and the decision to use the SMS texting website. This was surprising giving previous theories on learning preferences suggested that differing learning preference types would have differing learning styles. For example, Pearman, Lombardo, and Eichieger (2005) found that students that were more introverted often provided delayed responses to

interactions, are succinct when communicating and are more reflective. This argument was reinforced by Jensen (page 127) who described introverts if asked a question, they would think about an answer, reflect on it, rehearse it, and only then share it. Finally, Pearman, et al stated that students with a perceiving learning preference might be expected to prefer texting since they often approach learning with spontaneity and openness to new ways of doing things. The Judgment/Perceiving learning preference was also not linked to preference for texting in class. More directly stated, Graham et al (2012) found that texting in class and traditional theories on learning preferences are not linked.

SMS Texting Integrated Web-based System as an alternative to Clickers

According to Ng'ambi (2006) there is usually a disconnect between technologies that are available and easily accessible by most students and technologies used in class. For example, Zhu (2007) reported that Clickers are being widely used across university campuses to give students and teachers more opportunities to interact with one another during class time. Additionally, Zhu reported that both students and faculty attitudes towards the use of clickers is positive and that most enjoy using clickers in class because it makes the lecture more fun and interesting. Caldwell (2007) found the same thing: students either frequently or always enjoyed using clickers in class. While clickers have been proven to improve classroom experiences and increase student engagement in classroom discussions, as Ng'ambi (2006) suggested, the cost of clickers may limit its accessibility to all students. According to Mantoro, Ayu, Media, Habul, and Khasanah (2010) clickers are not only expensive for students but they also felt that clickers require user training and maintenance. Finally Mantoro et al stated that despite the benefits and general satisfaction students and faculty have with clickers, they are still not widely used in educational environments. Ng' Ambi (2006) stated that SMS texting however is the "most common and frequently used mobile service" (p.1). According to Graham et al (2012) "texting is clearly a cultural phenomenon of today's technology based societies that appeals to a wide range of college age students." (p. 643). This presents an opportunity to accept and encourage the use of SMS texting in class to increase student engagement in class discussions.

HOW TO IMPLEMENT: OPEN-SOURCE SOLUTIONS

College and university campuses globally have been moving towards increased use of computer and technology enabled classrooms. Computer and technology enabled classrooms often use learning management systems (LMS) such as Blackboard™ to facilitate knowledge and resource sharing. These systems are beneficial for distance education where communication may be asynchronous but according to Graham et al (2012) they do not adequately capture the "complex

and unpredictable nature of classroom discourse" (p. 644) for classes held synchronously.

To truly meet the needs of each class, other popular LMS's exist today with more solutions arriving on the scene regularly. Many free open source LMS's are increasingly being incorporated in Internet Web-based platforms such as Wordpress. Wordpress according to Braender, Kap, and Yeras (2009) is a "*Web development framework that is based upon a small set of extensible content units that can be organized and rearranged to address a particular development need*." It should also be stated that Wordpress also has a large community of developers that create Plugins that append a considerable amount of functionality to the Wordpress website. Many education plugins now exist in the Wordpress framework that when installed in the Wordpress website can create a learning management system that can often compete well against other proprietary LMS's such as Blackboard™. The case being made here is that many college and university professors and lecturers may find themselves one day developing their own LMS with the integrated functionality of receiving SMS text messages to meet their individual class needs.

LIMITATIONS AND FUTURE RESEARCH

In the two studies compared in this research, Graham and Miaoulis (2010) and Graham et al (2012), one limitation was the size and demographic characteristics of the population. Future research should include a larger sample and in the best case, the study should be spread out across many colleges and universities over a large geographic (multi-state) area. Future research should also look at whether or not differences exist by gender and or ethnicity. Another significant limitation was in the original website usability survey. The alignment between the original hypothesis and observed constructs for the 10 item perception measures, only ease of use emerged as a unique construct in participants' responses.

CONCLUSION

This research synthesized two previous studies on SMS texting in the classroom and found that most students would use a SMS integrated collaborative learning technology in the classroom irrespective of individual student learning preferences. Additionally, this study brought attention to the findings that SMS texting in class: 1) encouraged more students to participate in class discussions and 2) SMS texted questions sent by students improved classroom discussions.

A secondary point brought to light in this research is the idea that SMS texting may be a suitable alternative to other in class personal response systems such as clickers. As previously stated clickers can be expense for students who may already be cash strapped and clickers also require user training and maintenance. We posit that SMS text receiving enabled websites could be used to capture

student ideas, questions, and comments that then can be shared with the whole class in real time via the SMS texting integrated website. Given the many open-source technologies that are freely available on the Web, faculty could begin developing these websites themselves customizing them for their specific classroom needs including communicating with students using their preferred communication medium: texting.

REFERENCES

Braender, L. M., Kapp, C. M., & Yeras, J. (2009). Using web technology to teach students about their digital world. *Journal of Information Systems Education*, 20(2), 145-153.

Butler, T., J, & Pinto-Zipp, G.(2006). Students' Learning Styles and Their Preferences for Online Instructional Methods, *Journal of Educational Technology Systems*, 34(2), 199 – 221.

Dewar, T., & Whittington, D. (2000). Online Learners and their Learning Strategies, *Journal of Educational Computing Research*, 23(4), 415-433.

Graham, C.M., Anchors, S., & Doore, B. (2012). Student Learning Preferences and SMS Text Messaging: A Web 2.0 Large Classroom Engagement System. *International Journal of Information and Communication Technology Research*. 2(8): 638-645.

Graham, C. M. & Miaoulis, G. (2010). Web 2.0 Social Networking Technologies & Student Engagement: An Evaluation of an In-Class Question-Answer SMS Text Messaging System. *Journal of Innovative Education Strategies*. 1(1):23-37

Ho, S. Y. & Ho, K. W. (2011). Mobile Messages as a Tool to Stimulate Learning Activities. *In Proc. Australasian Computing Education Conference (ACE 2011), Perth, Australia. CRPIT, 114.*

Jensen, G., H. (2003). Learning Preferences in Using the MBTI® instrument in colleges and universities. *Center for Applications of Psychological Type.* Gainesville, Florida (p. 127).

Kinsella, S. (2009). Many to one: Using the mobile phone to interact with large classes. *British Journal of Educational Technology*, 40(5), 95-96.

Kluger, Jeffrey (2102) We never talk any more: The problem with text messaging, *Time*, September 6, 2012

Lim, M. S., Hocking, J. S., Hellard, M. E., & Aitken, C. K. (2008). SMS STI: a review of the uses of mobile phone text messaging in sexual health. *International journal of STD & AIDS*, 19(5), 287-290.

Markett, C., Sánchez, I., A., Weber, S., and Tangney, B. (2006). "Using short message service to encourage interactivity in the classroom." *Computers & Education* 46(3): 280-293.

Mantoro, T., Ayu, M.A.,Habul, E., and Khasanah, A.U. (2010). Survnvote: A free web based audience response system to support interactivity in the classroom. *Open Systems (ICOS), 2010 IEEE Conference on* .5(7). 34-39.

Mupinga, D. M., Nora, R. T., & Yaw, D. C. (2006). The learning styles, expectations, and needs of online students. *College Teaching*, 54(1), 185-189.

Ng'ambi, D. (2006, July). Collaborative Questioning: A case of Short Message Services (SMS) for knowledge sharing. In Advanced Learning Technologies, 2006. *Sixth International Conference on* (pp. 350-351). IEEE.

Pearman, R., Lombardo, M., & Eichinger, R., W. (2005). YOU: Being more effective in your MBTI®) Type. Lominger International, Minneapolis, Minnesota

Riordan, B., & Traxler, J. (2005). The use of targeted bulk SMS texting to enhance student support, inclusion and retention. *Wireless and Mobile Technologies in Education,WMTE 2005. IEEE International Workshop on* 28(30).

Russell, A. L. (2002). MBTI® personality preferences and diverse online learning experiences. *School Libraries Worldwide*, 8, 25-40.

Sharples, M., Taylor, J., & Vavoula, G. (2010). A theory of learning for the mobile age. *Medienbildung in neuen Kulturräumen*, 87-99.

Zajac, M. (2009). Using learning styles to personalize online learning. *Campus-Wide Information Systems*, 26(3), 256-265.

Zhu, E. (2007). Teaching with clickers. *Center for research on learning and teaching occasional papers*, 22, 1-8.

STRATEGIC USE OF DATA FOR STUDENT ENROLLMENT MANAGEMENT: A CASE STUDY

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Abstract

Often performance and other organizational data in the form of reports, models and dashboards remain in the executive silo, however empowering all of the employees in an organization with some or all of this data can result in significant competitive advantage for the organization. In this work we look at an online MBA program that employed such a data empowerment strategy for the decade from 2003 to 2012. We show how it outperformed its peers by tripling the student enrollments during this period. We describe in some detail the organizational structure and information systems that the team managing this online MBA program employed. We also take a look at the size and growth of the MBA market in the U.S. for the decade under review, as well as, the economics of the online MBA market.

INTRODUCTION

The use of strategic information systems to data-empower all of the employees in an organization can result in significant competitive advantage for the organization (Porter & Millar, 1985; Brynjolfsson, Hitt, & Kim, 2011). This finding has helped fuel the data-driven-decision-making revolution that is sweeping the economy. This revolution began with the widespread adoption of enterprise systems and over the past decade its focus has shifted to the implementation of business analytics and Big Data solutions. With regards to the public higher education sector, a couple of questions arise. How can the data-driven-decision-making business model be applied? And if applied, what are the potential benefits of this business model?

In this study we present a case study of an MBA program at a public university, the University of Massachusetts Amherst (UMass Amherst), which across the board adopted a data-driven-decision-making business model for the decade between 2003 and 2012. We describe the information system that was implemented in order to facilitate this business model. Using a simple ex post facto design we study the performance of this MBA program in terms of application volumes and

student enrollments. We show that this program outperformed its peers in the U.S. MBA market, as well as, the other Masters programs at the Business School and at the University.

The rest of the paper is organized as follows. In the Background section we describe the Isenberg School of Management's part-time MBA program and we also define student enrollment management and outline the scope of our work. Next, we examine the MBA market in the U.S. and briefly review the economics of the online segment of this market. Using the findings from other research, U.S. Department of Education data and other industry data we estimate the size and growth rate of the U.S. MBA market between 2003 and 2010. The Information Systems section describes the design and architecture of the information system used by the team managing the Isenberg part-time MBA program; it also outlines how this information system was used. After this, the growth of the Isenberg part-time MBA program is examined. Other possible external causes for the program's growth are studied. In the Discussion section we discuss how the information system contributed to the growth of the program and the Conclusion section ends the paper.

BACKGROUND

The Isenberg MBA program, was organized around three options; the full-time (*FT MBA*), the blended, and the online options. We will combine the last two options and refer to them as the (part-time) *PT MBA*. For the period studied in this report students were required to complete 11 core courses (34 credits) and 3 credits of elective courses for the part-time MBA option. The PT MBA option was a self-paced nonresidential program. Students in this program could take classes online or at one of the three satellite campuses in Massachusetts. Most PT MBA students only took online classes, however since non-FT MBA students could take classes online and/or at a satellite campus it was difficult to separate the online activity from the blended (i.e. satellite campus-based) activity. The FT MBA option was a cohort-based program with a two year residency at the Amherst campus.

Prospective students could take up to two courses that were offered as part of the PT MBA curriculum before applying and enrolling in the program. Each lecturer developed and taught their own course, there were no shell courses or off-the-shelf courses that instructors followed. Most courses had at least two different faculty teaching a section of the course each

semester and students were free to choose the section of the course that they wanted to enroll in, that is, students were not assigned to a class or a lecturer. In the PT MBA program students were presented with a recommended study path, however, they were free to take the courses in any order they preferred. Students had to be continuously enrolled once they were accepted into the PT MBA program. The Isenberg School had partnerships with several corporations and organizations. Internally, the students and prospects were segmented based on these partnerships and other data points.

In this paper we are going to focus on the management of the PT MBA program and the information systems that were used. The PT MBA administration team was focused on the challenge of marketing and providing customer service to a non-traditional student population in an institution that was primarily designed to serve traditional students. This is a challenge that has been noted by Stack (2009) when she opined:

> Graduate school has built-in challenges for this population of students trying to balance family and career while pursuing their education. The common theme I see is students who appear to be highly motivated and qualified, but choose for whatever reason, not to apply or enroll in graduate school. It is not to say that graduate study should not be challenging, for it should be academically rigorous. Where it should not be challenging is navigating the process of inquiring, applying, and enrolling. Universities need to find better ways to embrace students who want to make a change in their lives by enrolling in graduate study (p. 11).

Student enrollment management is a systematic process to improve recruitment, admission, retention, and graduation of students (Huddleston, 2000). According to Lapovsky (1999), the functional units within enrollment management are marketing, admissions, pricing, financial aid, admissions, student services, institutional research, retention, and advising. In this work we will look at the enrollment management of PT MBA students with specific emphasis on marketing, admissions, advising, course offerings and course enrollments.

The PT MBA advisors handled both the admissions processing and academic advising. In admissions processing, the advisors received the application materials, made sure that it was complete and followed up with the applicants as needed. They reviewed the applications and made

recommendations to the admissions team. For academic advising, the advisors scheduled appointments with students for advising on course enrollments (students could enroll for courses for four semesters/sessions each year), they handled any course transfers from other institutions, processed degree completion requests, fielded any general academic or quality concerns from students. Advisors were also involved with communications to their students about upcoming course offerings and course registrations. Over the decade under review the advisor to student ratio ranged between 1:200 and 1:600. Advising was primarily conducted over the phone or via emails; there were very few walk-in students.

The PT MBA marketing efforts involved creating awareness of the program, acquiring prospects who wanted to learn more about the program, developing new markets through partnerships or program customizations. Increased awareness for the program was created through advertising in local, regional and national media and by sponsoring events. The MBA portion of the Isenberg School website had a request for information form, as did the UMass Amherst website and the UMassOnline website where prospects could seek to learn more about the PT MBA. Local, regional and national recruiting events were the others sources of prospects. Prospects were regularly informed of upcoming events and course registrations.

THE MBA MARKET

Data on the size and composition of the MBA market is very sparse. While organizations, such as the Association to Advance Collegiate Schools of Business (AACSB), the Association of Collegiate Business Schools and Programs (ACBSP), the International Assembly for Collegiate Business Education (IACB) and the Association of MBAs (AMBA), all collect information on the MBA programs offered by their membership, there is no central repository for this data and also these associations do not include all the universities and colleges that offer the MBA degree. Murray (2011) using statistical sampling techniques attempted to answer the following questions for the U.S. education market: (i) How many MBA programs are offered? (ii) How many students graduate from these programs? (iii) How many students are enrolled in these programs? She concluded that as of fall 2007 there were 972 institutions in the U.S. offering MBA degrees and that this represented 49.7% of all institutions that offered graduate degrees. She also concluded that at least 66.2% of all Master's degrees in business

conferred were MBA degrees and that this represents at least 29.1% of students enrolled in all the MBA programs. Table 1 uses these conclusions and the latest U.S. Department of Education data (Digest of Education Statistics, 2012) to estimate the size of the MBA market since 2003. Based on these estimates the MBA market in the U.S. represented by the number of enrolled students grew at a 5% compound annual rate between 2003 and 2010.

	2003	2005	2008	2010
Business (Master's degrees awarded)[ξ]	127,685	142,617	155,637	177,684
MBA degrees awarded[£]	84,527	94,412	103,032	117,627
MBA students enrolled[£]	290,472	324,441	354,061	404,216
[ξ]Source: Digest of Education Statistics (2012). [£]Lower end estimate based on Murray (2011) results.				

TABLE 1: The Size of the MBA Market in the U.S. 2003-2010

Market Economics

Competition in the online MBA market continues to grow. Top-rated MBA schools, like the University of North Carolina's Kenan-Flagler Business School, Carnegie Mellon University's Tepper School of Business, Indiana University's Kelley School of Business, IE Business School in Spain, Babson College's Olin School and Arizona State University's Carey School, now all offer online MBAs (Byrne, 2013). This trend looks set to continue as Figure 1, only representing AACSB schools, shows. However, this increasing trend in online MBAs has to be weighed against the possible rise in popularity of massive online open courses (MOOCs) that other universities with top-rated MBA schools are testing and the potentially disruptive economic models that these new course delivery platforms might introduce (Cerf, 2013; Kahn, 2013).

The Isenberg MBA required 37 credits to complete and for online courses it cost about $750 per credit, so it cost online students approximately $27,750 in tuition, while at the time of writing the IE Business Schools Global Online MBA cost about $50,000 (Byrne, 2011) and the UNC Kenan-Flagler Business School's online MBA cost $91,225 (Byrne, 2012) .

According to Blumenstyk (2012) the Isenberg PT MBA program generates about $15 million in revenue annually. Sixty percent of this revenue is used to cover 40% of the School's budget.
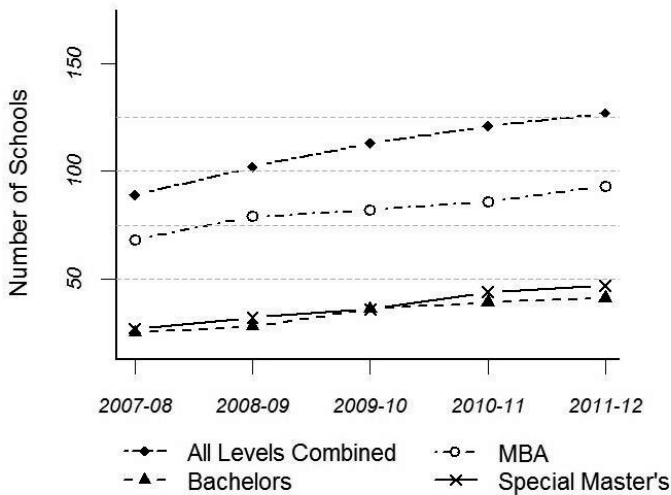
**FIGURE 1: Number of AACSB-accredited Schools Reporting
Fully Online Programs. Source: Nelson (2013)**

We have observed that in the case of UMass Amherst, nearly all of the students in the PT MBA program were not state-supported; they paid full-tuition often at a rate higher than that for residential (i.e. state-supported) students. Furthermore, there were less overhead costs associated with supporting PT MBA students, for example, in most cases these students did not need the use of the public safety department, the on-campus health services department, dining and residential halls and the sporting facilities at the main campus.

THE INFORMATION SYSTEM

We will adopt the definition by Piccoli (2012) of an *information system* as a formal, sociotechnical, organizational system designed to collect, process, store, and distribute information. The four components of an information technology (IT)-based information system are IT, people, process and structure.

For most of the period under review the PT MBA team averaged 8 members and it had a fairly flat organizational structure. The team was co-located and it was cross-functional consisting of student advisors, marketing, operations and IT staff.

The technology component of the information system consisted of two parts; a student management system (SMS) that internally was referred to

as the *Red database* and a prospects management system (PMS) that internally was referred to as the *ApplyYourself (AY) database*. The SMS was used to manage the data on all students and applicants in the PT MBA program. The PMS was used to manage the data on all the active prospects who had expressed an interested in the PT MBA program. The SMS was custom-built using in-house IT resources and it was rolled into production in May 2005. The PMS was a web-based solution from a third-party vendor; it was hosted off campus and was put into production in December 2005.

System Design

Design Principles. The two overarching goals for the system were ease of use and having "(data) management responsibilities lie with the parties that have the most to gain or lose" (Redman, 2012). The design of the system was guided by the following principles:

1. A single data store, with a flexible data schema, where all data on MBA students and prospects that was necessary for managing admissions, advising, course enrollments and marketing would be stored.
2. A user interface that would enable quick searches and navigation of student records, coupled with a backend system that would quickly load the complete student record once a student name was selected from the search results.
3. The IT manager would be the curator of the data in this system and the PT MBA team would all be 'owners' of the data. That would mean that anyone using or updating any part of the data in this system would be responsible for the accuracy of the accessed data and for notifying the curator of any anomalies.

System Architecture. The core component of the IT infrastructure was an independent logical data mart, as defined by Golfarelli and Rizzi (2009). This data mart had the SMS and PMS operational databases as its sole data feeds. Data from many disparate sources on- and off-campus were input into the operational databases using custom-built extract load and transform (ETL) tools as shown in Figure 2.

The SMS database was an in-house Microsoft SQL Server database management system (DBMS). PT MBA student and applicant data from the University's main student record management system (SPIRE) was uploaded daily to the SMS database. The 'Red database' interface was a desktop application that was developed in C#.
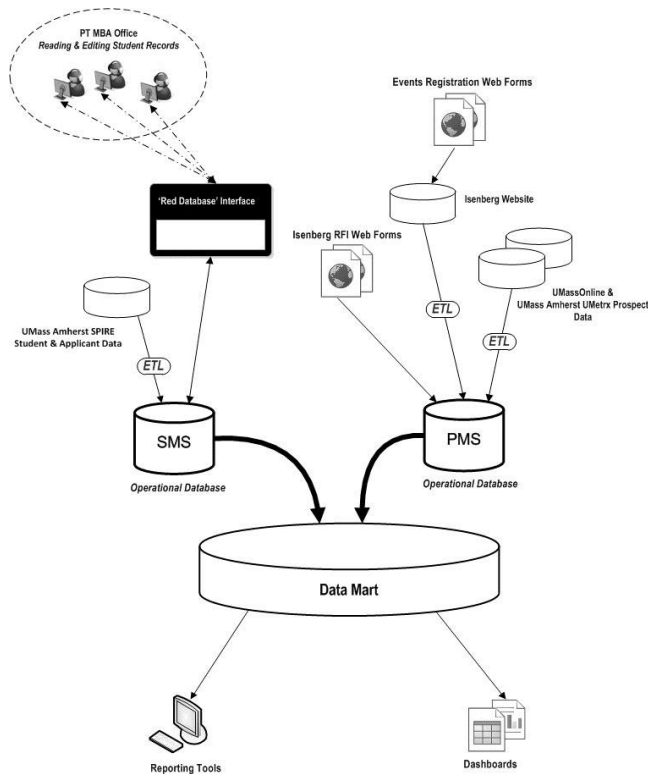
FIGURE 2: PT MBA Information System Architecture.

The PMS database was part of a hosted solution. Prospects entered their information directly into this database via a set of request for information (RFI) web forms at the Isenberg website. At the back-end the solution had a web-based query interface that was used to get information on current prospects for communication and other purposes. Prospect data was archived to the data mart before any changes were made to the data in the PMS database. In this way the data mart had a record of all prospects and was used only for data analysis, while on the other hand, the PMS database was the operational data source for communications with the active prospects.

For most of the period under review the Isenberg website was based on an Apache web server and a MySQL server DBMS, all running on the Linux platform. The event registrations information was extracted from the website database and uploaded into the PMS database using the ETL tools. Prospect data from UMassOnline and UMetrx, the university-wide data warehouse, was also uploaded into the PMS database using another set of

ETL scripts. Reporting tools based on Microsoft SQL Server technology were used to query the data mart. The dashboards were Microsoft Excel-based and they are described briefly in the next section.

Using the Information System

Quick and Easy Access to Student Information. The 'Red database' interface was a three-tabbed desktop application that the student advisors used to quickly access PT MBA students information. It was developed and regularly updated with direct input from the advisors. The goal here was to search for the student once and then quickly pull up all the academic information about the student from the SMS database, the advisors could then move between the tabs for the information that they needed. This was especially important when an advisor was on the phone with a student.

When advising students on course enrollments, advisors could see what courses the student had already taken, at which venue and with which instructor as shown in Figure 3. Using the student's academic background from Application Information tab and conversations with the student to gain more information, the advisors could help guide the student to the course section that was more aligned with their background, preferences and future career plans. This was helpful for students, given that instructors teaching different sections of the same course could teach it in different ways, for example, one instructor may have preferred a more quantitative approach, while another may have preferred a more qualitative approach.
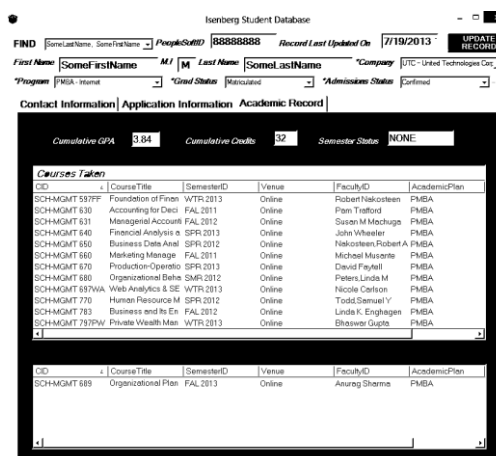

FIGURE 3: Student Academic Summary Information.

They communicated about upcoming events, new course offerings, course registration dates and news about the PT MBA program, such as the release of the latest rankings. All communications were targeted by partnership, location, student stage in the program or other categories. The system described here allowed for easy identification of these communication target groups.

Dashboards. The PT MBA dashboards were in the form of Microsoft Excel worksheets that queried the data mart for the latest information each time they were opened. These worksheets were then grouped into a tabbed workbook. All the members of the PT MBA team had access to this workbook. The team used these dashboards as operational and tactical tools. The main dashboard, shown in Figure 4, displayed the current enrollments categorized by satellite campus and partnerships. The corresponding statistics for the previous year were also displayed together with the percentage change between the two time periods. The numbers of applications received year-to-date were also displayed as well as the corresponding application numbers for the previous year.
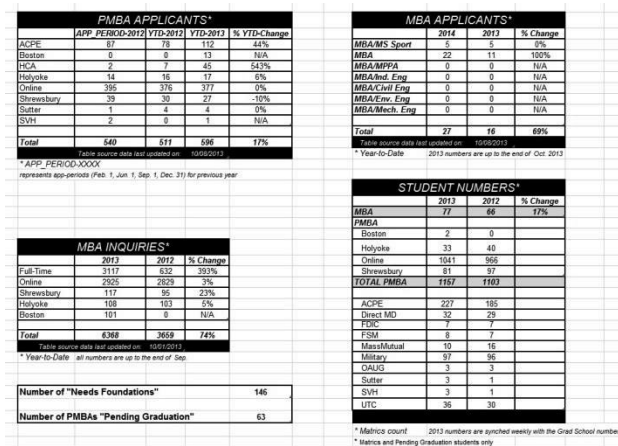

FIGURE 4: Program Summary Information.

These application statistics were again categorized by satellite campus and partnerships. Similarly, the numbers of inquiries by prospective students received year-to-date were displayed together with the corresponding inquiry numbers for the previous year. Daily, weekly and monthly the data on this dashboard was used by the marketing team to quickly inform them of the impact of marketing campaigns. The advisors used the dashboard to get a snapshot of the application volumes and the size or distribution of the student population that they were each charged with servicing. Using

the dashboard, the program executives could quickly see if there were any significant changes in the trends that warranted immediate or longer term action.

Ad-hoc Reports. Reports from this system were used for, among other things, (i) communicating with and tracking registrants and attendees of the program's marketing and recruiting events, (ii) data for annual accreditation and rankings surveys and for other program reviews, and (iii) planning for course offerings based on knowing the number of students at a given campus who still required a particular core course, i.e. the inventory of course seats.

ANALYZING THE GROWTH OF THE PROGRAM

In this section we will look at the growth of the PT MBA program in terms of enrollments and application volumes between 2003 and 2012. We will then try to find possible explanations for this growth by studying a few candidates that were external to the PT MBA program, one factor at a time. We use three research hypotheses to qualitatively analyze the potential impact of these external factors.

Data Sources
This part of the research was primarily based on data from the Office of Institutional Research (OIR) at UMass Amherst (2013).

For the comparative analysis we looked at the other Master's programs at UMass Amherst that had been in operation throughout the period under review. For the on-campus or state-supported Masters (*FT Masters*) we considered the following programs: Master of Architecture (MArch), Master of Arts (MA), Master of Arts in Teaching (MAT), Master of Business Administration (MBA), Master of Education (MEd), Master of Fine Arts (MFA), Master of Landscape Architecture (MLA), Master of Music (MMus), Master of Public Health (MPH), Master of Public Policy and Admin. (MPPA), Master of Regional Planning (MRP), and Master of Science (MS/MS in Engineering). For the part-time or Continuing & Professional Education Masters (*PT Masters*) we considered the following programs: Master of Education (MEd) - CPE, Master of Music (MMus) - CPE, and Master of Public Health (MPH) - CPE. The Master of Science in Accounting - CPE was the only other part-time or Continuing & Professional Education Masters in the Isenberg School for the period under review, we will refer to this program here as the *PT MSA*.

The second major data source used in this part of the study was data collected by the Graduate Management Admission Council through its annual application trends surveys (GMAC, 2012).

Enrollments
The PT MBA enrollments more than tripled for the decade under review, starting at 320 students in 2003 and growing to 1065 students in 2012, for a compound annual growth rate (CAGR) of 13%. The enrollment growth in the PT MBA was in marked contrast to that of the other Master's programs at the University, whose enrollment growth rate was 2% for the PT Masters, -1% for the FT Masters and -4% for the PT MSA programs over the same period, as shown in Figure 5.
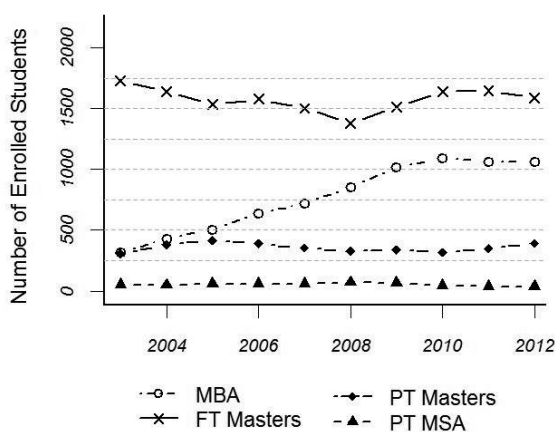

FIGURE 5: Number of Students Enrolled in the Masters Programs at UMass Amherst each Fall Semester from 2003 through 2012.

At the Isenberg School the other residential Master's programs in business, which we will now refer to as the *FT ISOM*, consisted of the M.S. in Hospitality and Tourism Management, the M.S. in Resource Economics and the M.S. in Sport Management. The programs in the PT MBA, PT MSA, FT MBA and FT ISOM categories make up all of the Master's programs at the Isenberg School. The degrees awarded for each of these categories from 2003 to 2012 are shown in Table 2. The average ratio of MBA degrees conferred to all Master's in business degrees conferred (MBA/Master's) at the Isenberg School was 73%. This result is in line with the findings of Murray (2011), where she concluded that between 66% and 76% of all Master's degrees in business that are awarded each year are MBA degrees. Using the degrees awarded data we see that the degree completion rate for the PT MBA program grew at a CAGR of 15%.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
PT MBA	84	96	110	134	195	210	253	276	376	342
PT MSA	0	13	50	42	56	54	54	58	101	31
FT MBA	25	36	24	41	36	35	35	32	34	26
FT ISOM	43	33	35	42	32	43	42	37	32	36
PT Masters	71	128	184	206	193	184	142	152	136	122
FT Masters	753	796	775	739	688	756	665	688	695	795
MBA/Master's[ξ]	72%	74%	61%	68%	72%	72%	75%	76%	76%	85%
[ξ] Ratio of all MBA (PT MBA and FT MBA) degrees awarded to all Master's in business (PT MBA, PT MSA, FT MBA, and FT ISOM) degrees awarded.										

TABLE 2: Number of Masters Degrees Awarded at UMass Amherst each Academic year from 2002-03 through 2011-12.

Applications to the PT MBA grew at an 8% CAGR. Figure 6 shows the applications to the PT MBA for the fall and spring semesters for the period under review. The graduation rate of students from the program matched the enrollment rate, meaning that, students were not taking longer to complete the program. So, the enrollment numbers were not increasing due to students taking longer to complete the PT MBA degree. The PT MBA degree completion requirements remained the same for the period under review, so there were no structural changes to the program that could have affected some segments of the PT MBA student population.

Thus, we conclude that the growth in enrollments was primarily driven by the growth in application volumes.
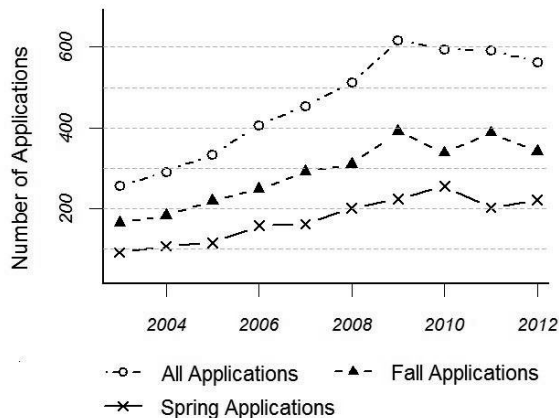

FIGURE 6: PT MBA Applications for the Spring and Fall Semesters from 2003 through 2012.

Next we will try to examine if there are any school-wide, university-wide or MBA market-wide factors that might help explain the tripling in PT MBA enrollments between 2003 and 2012.

Due to resource constraints, such as limited faculty, teaching spaces, and financial aid, the enrollments in some of the programs at UMass Amherst were capped. The capping of enrollments mainly affected the residential or full-time programs. The annual student enrollments represent a bounded variable. Applications to all programs were open; that is, there were no caps placed on the number of applications that could be received by any program. So, the annual application volumes can be used as a free variable. To measure the impact of the school-wide, university-wide or MBA market-wide factors we are going to use the number of applications received each year for the different Master's programs at the University.

System-wide Brand and Marketing Impact
Firstly, we want to see if the number of PT MBA applications grew primarily on the strength of the Isenberg School of Management brand or as a result of school-wide marketing initiatives conducted over the decade under review. *Hypothesis 1: There is no difference in application volume growth rates among all the Master's programs at the Isenberg School of Management between 2003 and 2012.* For accurate comparisons we will only consider fall semester applications, since for the other non-MBA Master's the fall is the only semester for which we have complete data. Figure 7 shows the applications for the Master's programs at the Isenberg School.

Clearly, Hypothesis 1 is not supported, since the PT MBA applications volumes grew at a CAGR of 8% and outperformed the FT MBA at 0% growth rate, the FT ISOM grew at a rate of -5% and the PT MSA at a rate of -6%. From the data, it appears the Isenberg School of Management brand or the school-wide marketing initiatives were not the primary cause of the growth in PT MBA applications, so we reject Hypothesis 1.

Next, we want to examine if the PT MBA application volumes grew primarily on the strength of the University of Massachusetts Amherst brand or as a result of university-wide marketing initiatives or from marketing initiatives that the Department of Continuing & Professional Education (CPE) undertook over the review decade.
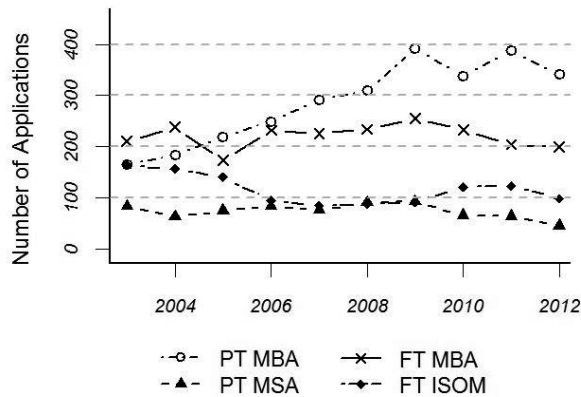
FIGURE 7: Isenberg Master's Applications for the Fall Semesters from 2003 through 2012.

Hypothesis 2: There is no difference in application volume growth rates among all the Master's programs at the University of Massachusetts Amherst between 2003 and 2012. Figure 8 shows the applications for the Master's programs at the university. While the applications volumes for all the UMass Amherst Master's programs grew over the decade, the PT MBA with CAGR of 8% outperformed the PT Masters at 2% growth rate and the FT Masters at 1% growth rate. So, Hypothesis 2 is not supported.

It does not appear as though any changes in marketing initiatives or in brand awareness of the University or the Isenberg School were primarily responsible for the growth in PT MBA application volumes and the resulting growth in enrollments in the program.
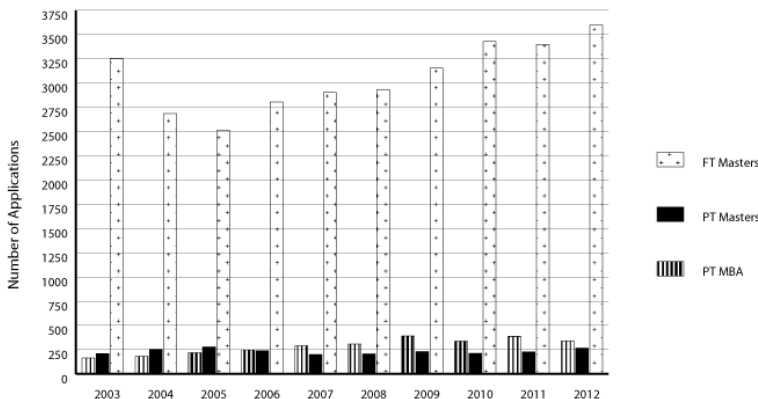

FIGURE 8: Master's Applications at UMass Amherst for the Fall Semesters from 2003 through 2012.

PT MBA Market Impact

We now turn to the broader MBA market to see if any changes there can help explain the growth in PT MBA application volumes. *Hypothesis 3: There is no difference in application volume growth rates between the PT MBA and its peers at other business schools from 2003 through 2012.* We compared the application volume growth rates for part-time MBA programs in the GMAC (2012) surveys with those of the PT MBA program using the Applications Trends Worksheet scale (Graduate Management Admission Council, 2012) as shown in Figure 9. We observe that application volume growth for the PT MBA program performed better than its peers from 2003 through 2009, with the exception of 2007 and 2008 when it matched its peers. The PT MBA program slightly underperformed its peers from 2010 through 2012. Using data from Table 1 and Figure 5, we also note that the overall enrollments for the MBA market in the U.S. grew at a CAGR of 5% between 2003 and 2010, while the PT MBA enrollments grew at a compound annual rate of 19% over the same period.
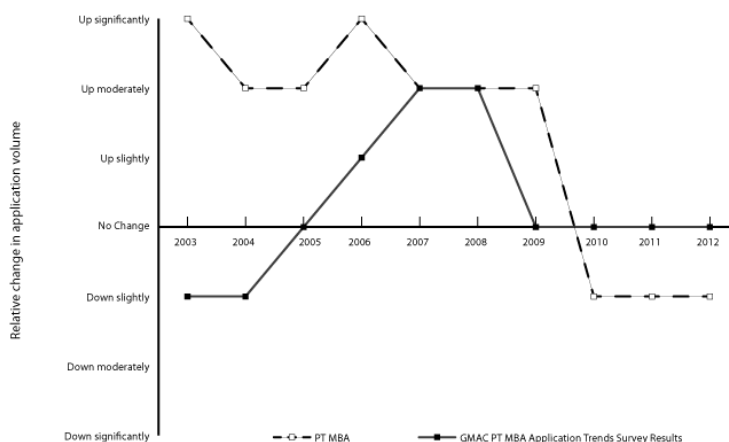

FIGURE 9: PT MBA Application Volume Changes Compared to Average Changes for GMAC Part-Time MBA Programs from 2003 through 2012.

The PT MBA program outperformed its peers for most of the decade in terms of application volume growth and for that latest 7 year period where data is available the PT MBA program outperformed the overall MBA market in terms of enrollment growth. We determine that Hypothesis 3 is not supported by the data and so we reject it.

We conclude that none of the external factors whether school-wide, university-wide or in the general MBA market appear to provide a possible explanation for the growth in the application volumes for the PT MBA program at the Isenberg School. Next, we look at the in-house processing of the applications by the PT MBA team to see if there were any significant changes there that might explain the tripling of enrollments over the decade being studied.

Acceptance Rates and Yield

The acceptance rates are shown in Table 3. We note that PT MBA at 90% has the highest average acceptance rate followed by the PT MSA (84%), the PT Masters (83%) and the FT Masters (37%). One of the reasons for the lower acceptance rate in the FT Masters was the limited resources available to support large or growing numbers of residential students.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
PT MBA	98%	97%	74%	89%	92%	96%	94%	87%	80%	92%
PT MSA	71%	92%	85%	81%	88%	86%	83%	82%	90%	84%
PT Masters	90%	94%	83%	91%	88%	85%	76%	72%	73%	76%
FT Masters	33%	36%	41%	39%	36%	35%	39%	39%	37%	36%
ξ Acceptance Rate: The percent of applicant who were accepted.										

TABLE 3: Master's Programs Acceptance Ratesξ **at UMass Amherst each Fall from 2003 through 2012.**

Table 4 shows the yields. The PT MSA, at 82%, has the highest average yield followed by the PT MBA (79%), the PT Masters (76%) and the FT Masters (44%). Based on the acceptance rates and yields, the probability that any applicant will enroll in the PT MBA is 0.71, it is 0.69 for the PT MSA, 0.63 for the PT Masters and 0.16 for the FT Masters.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
PT MBA	90%	76%	83%	83%	71%	77%	78%	75%	81%	72%
PT MSA	97%	79%	92%	84%	85%	86%	82%	81%	65%	74%
PT Masters	92%	77%	69%	76%	76%	74%	71%	76%	74%	72%
FT Masters	58%	47%	44%	46%	41%	43%	42%	42%	39%	40%
ξ Yield: The percent of accepted students from Table 3 who enrolled.										

TABLE 4: Master's Programs Applicant Yieldsξ **at UMass Amherst each Fall from 2003 through 2012.**

Adjusting the PT MBA acceptance rate and yield to match those of the PT Masters would lower the CAGR of the PT MBA enrollments for the

reviewed period from 13% to 11.5%, which is still much higher than the 2% CAGR for the PT Masters, the next highest one at the University. So, any changes in applicant acceptance rates or yields for the PT MBA program were not the primary cause of the growth in enrollments at this program.

DISCUSSION

This study has two significant limitations. Firstly, we were not able to conduct a formal survey of the PT MBA staff in order to try and measure the perceived importance or the effectiveness of the information system discussed in this work. Secondly, other PT MBA stakeholders, like the faculty and students, were not surveyed in order to explore other potential causes for the increased growth in application volumes. However, many of the faculty who taught in the PT MBA also taught in the other Isenberg Masters. The following observations regarding the information system were made by the author who was a member of the PT MBA staff for most of the period under review:

1. *Usage Patterns:*
   a. A consistently high usage pattern of the 'Red database' interface by the student advisors was observed.
   b. Resource reallocations and other program changes were implemented based on trends that were gleaned from the dashboards.
   c. There was a steady rate of requests for regular program reports and requests for new types of reports.
2. *Data Accuracy:* The team maintained a constant vigilance to ensure that the data in the system is was accurate as possible.
3. *Data-Driven Posture:* The team would always strive to make data-driven decisions whenever possible.
4. *Primary Data Source:* The information system under review was the primary data source for the PT MBA program for 8 of the most recent years out of the 10 years covered in this study.

Based on these observations, we infer that the information system discussed in this work was critical to the operations of the PT MBA program for the period under review.

In our view, the primary reasons why this information system gained acceptance and was able to contribute to the growth of the program are four-fold. Firstly, the team's data-driven posture was led by the program executives and it filtered down to the rest of the staff, this meant that there was a shared view of how the program was performing. And also those individual team members, who wished to, could setup personal benchmarks to track their own performance. Secondly, accurate data was valued, since, it meant in turn more accurate reports and other statistics were derived from the information system. Thirdly, the user interface for accessing and editing the student data, the 'Red database' interface, was designed to be as user-friendly as possible for the student advisors - the primary users of this interface. Finally, the use of a single, flexible data source (the data mart) for all of the program's data meant that there was consistency in the results across all the data output views, such as the dashboards and the ad-hoc reports. Furthermore, because the data sets in the PT MBA data mart were smaller and specific to the MBA program, the system response of the 'Red database' interface were quicker than those of other university-wide IT systems.

CONCLUSION

In this paper we studied the growth in student enrollments for the PT MBA program at the Isenberg School of Management from 2003 through 2012. During this period, the growth in student enrollments in the PT MBA outperformed all of the other Master's programs at the School and at the University, as well as the enrollment growth rate of the overall MBA market. We showed that the growth in PT MBA student enrollments was driven by increased application volumes and that the growth in PT MBA applications volumes outperformed that of the other Master's programs at the School, the University and the broader PT MBA market. No external factors were found that could explain the above-industry average growth rate of the PT MBA program and this led us to the conclusion that it must have been the way that this program was being managed. We then described how the team managing this program was committed to data-driven decision-making. We also described the information system was used to manage the PT MBA program and showed how this information system was used to provide the data necessary for decision-making to all the members of the team. In conclusion, we concur with the findings by other researchers who have found that the use of strategic information systems to data-empower all of the employees in an organization can result in significant competitive advantage for the organization.

REFERENCES

Blumenstyk, G. (2012, October 1). One business school is itself a case study in the economics of online education. *The Chronicle of Higher Education*. Retrieved from http://chronicle.com/article/Case-Study-the-Economics-of/134668/

Brynjolfsson, E., Hitt, L. M., & Kim, H. H. (2011, April 24). Strength in numbers: How does data-driven decisionmaking affect firm performance? *Social Science Research Network*. Retrieved from http://dx.doi.org/10.2139/ssrn.1819486

Byrne, J. A. (2011, January 27). Inside IE business schools global online MBA. *Poets & Quants*. Retrieved from http://poetsandquants.com/2011/01/27/ie-business-schools-online-mba-program/

Byrne, J. A. (2012, March 23). UNCs $10 million online MBA program. *Poets & Quants*. Retrieved from http://poetsandquants.com/2012/03/23/uncs-10-million-online-mba-program/

Byrne, J. A. (2013, May 29). The online MBA comes of age. *Fortune Magazine*. Retrieved from http://management.fortune.cnn.com/2013/05/29/online-mba

Cerf, V. G. (2013, May). Running AMOOC. *IEEE Internet Computing*. 17 (3). 87-88.

Digest of Education Statistics. (2012) Degrees in Business Conferred by Degree-granting Institutions, by Level of Degree and Sex of Student: Selected Years, 1955-56 through 2010-11 [Data file]. Retrieved from http://nces.ed.gov/programs/digest/d12/tables/dt12_347.asp

GMAC (2012). Graduate Management Admission Council Application Trends Survey Report. Retrieved from http://www.gmac.com/market-intelligence-and-research/research-library/admissions-and-application-trends/2012-application-trends-survey-report.aspx

Golfarelli, M., & Rizzi, S. (2009). *Data Warehouse Design: Modern Principles and Methodologies*. New York: McGraw-Hill.

Graduate Management Admission Council. (2012). Application Trends Survey Worksheet. [Proprietary Data file].

Huddleston, T. J. (2000). Enrollment management. *New Directions for Higher Education*. 111. 65-73.

Kahn, G. (2013, July 23). The MOOC that roared. *Slate Magazine*. Retrieved from http://www.slate.com/articles/technology/technology/2013/07/georgia_tech_s_computer_science_mooc_the_super_cheap_master_s_degree_that.html

Lapovsky, L. (1999). What you need to know about enrollment management. *New Directions for Higher Education*. 107. 5-15.

Murray, M. (2011). MBA share in the U.S. graduate management education market. *Business Education & Accreditation*. 3 (1). 29-40. Retrieved from http://ssrn.com/abstract=1947106

Nelson, C. (2013, January 24). Growth in accessibility of AACSB-accredited online degrees. AACSB Data and Research Blog. Retrieved from http://aacsbblogs.typepad.com/dataandresearch/2013/01/growth-in-accessibility-of-aacsb-accredited-online-degrees.html

Piccoli, G. (2012). *Information Systems for Managers: Texts and Cases* (2nd ed.). Wiley Publishing.

Porter, M. E., & Millar, V. E. (1985, July). How information gives you competitive advantage. *Harvard Business Review*, 63 (4), 149-160.

Redman, T. C. (2012, October 22). Get responsibility for data out of IT. HBR Blog Network. Retrieved from http://blogs.hbr.org/cs/2012/10/get_responsiblity_for_data_out.html

Stack, S. J. (2009). Informing graduate enrollment management: Marketing and admissions through student's perspectives. (Unpublished doctoral dissertation). Colorado State University, Fort Collins, Colorado.

UMass Amherst. (2013, July 29). Office of Institutional Research - Departmental Profiles [Data file]. Retrieved from http://www.umass.edu/oapa/oir