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Editorial

Adult Learning

Donald G. Perrin

Much has been studied about how adults learn and how distance and flexible learning compares with face-to-face learning in a classroom. Less has been said about who are the distance learners and what are their reasons for participating at a distance. Distance learning (DL) provides higher education opportunities for students who are geographically remote or otherwise cannot attend on-campus classes because of scheduling conflicts, travel, work, and/or family responsibilities. Add to this people with medical problems, limited mobility, and disabilities.

We traditionally plan DL programs and courses based on policies and procedures of the host institution for on-campus classes. This includes schedules, course structure and delivery, evaluation, and support services. This is reflected in courses taught by television. Online courses are asynchronous with added time flexibility for the learner.

Learning could be further facilitated if we started with needs and characteristics of the distant learner based on goals and demographics. The typical distance learner is older, more motivated, and more responsible than on-campus students. Many are skilled professionals with complex lifestyles with extraordinary responsibilities. Often these are mid-career professionals who are extremely competent but, in academic terms, not qualified. They urgently need qualifications for advancement in their careers. DL may be their only feasible access to higher education. On a daily basis, their priorities are # 1 their family, #2 their job, and #3 their education. Job and family demands and responsibilities create chaotic schedules with frequent interruptions. These learners need flexibility to use available chunks of time for academic activities. Under this kind of pressure, education becomes #4 priority because good health is a prerequisite for all three.

These busy experienced professions are a tremendous asset to higher education programs because they share relevant and current experiences that expand the resources of teacher and textbook. These professionals should be welcomed and nurtured as a valuable asset.

The very nature of distance learning and the distance learner make it necessary for students to assume control of their own learning. The traditional school model built on fixed schedules, rigid rules, and instructor control must be transformed for greater flexibility, collaboration and support. The Internet, interactive multimedia, social networking, learning management systems, and self-service technologies, provide the tools for students to manage their own learning and communicate with peers and instructors.

The Space Age (1958 -) brought new curricula with improved methods of teaching and learning:

TRADITIONAL	NEW
Lecture and textbook	**Slides, audiotapes, motion pictures, videos**
Abstract and verbal	**Real or simulated experience** (Dale's Cone) **New emphasis learning by doing** (Dewey)
One-way communication (lecture-discussion)	**Increase in dialog, interaction and feedback**
Rote learning, drill & practice; repetition	**Stimulate exploration, participation, collaboration**
Emphasis on Knowledge (pre Bloom's Taxonomy)	**Focus on application, problem solving, creativity, and relevant knowledge/skills/aptitudes**
Emphasis on medium / large group learning	**Learn in small groups; individualized learning**
Teacher managed; teacher imposed discipline	**Learner managed based on intrinsic motivation**
Punishment for failure	**Reward for active participation and success**

Technologies for group learning (film, television, radio recordings) were supplemented by individual learning technologies such as language laboratory, teaching machines, and single concept films. Videotapes replaced 16mm films and CDs replaced records. The new media could be reproduced inexpensively and were much more widely used. However, classroom technology was inferior to the average home or office.

In response to Sputnik, revolutionary new curricula in science and mathematics required retraining of hundreds of thousands of teachers. This was achieved by designing learning resources to be used by students. Teachers could learn the new curriculum along with their students. There was greater emphasis on learning by doing, individual learning and performance evaluation. By empowering students, the focus was moved from teaching to learning.

TRADITIONAL	NEW
Focus on teaching	Focus on learning
Teacher control	Learner responsibility
Learning is a variable; Instruction is a constant	Learning is a constant; Instruction is a variable
Whole class teaching	Diagnostic/prescriptive learning
competitive	collaborative
Fixed curriculum	Flexible curriculum
Rote Learning	Activity based *Learning by Doing*
Grade on bell-shaped curve	Rubrics guide learning to criterion
Measure seat time	Measure performance

Interactive computer technologies and the Internet made learning possible anywhere at any time for anybody. This added a whole new dimension to education because education could now go to the learner instead of the learner having to come to a physical campus.

TRADITIONAL	NEW
Classroom based	Anywhere
Learning & schedule controlled by teacher	Learning & schedule managed by student
Fixed schedule for on-campus classes	Any time – anywhere – flexible schedule
Fixed curriculum (one-size fits all)	Diagnostic/prescriptive/adaptive/personalized custom curriculum
Limited local resources	Access to global resources
Learning resources slow/expensive to update	Global resources with dynamic updates
Manual record keeping and tracking	Learning Management System - automated
Major construction cost for brick and mortar	Virtual environments – scalable and lower in cost
Transportation time/cost born by learner	Internet access saves time, cost, and fossil fuels
Slow and expensive to change	Scalable to meet dynamically changing needs

With time flexibility and customization, courses can be offered *on demand*, more frequently, and for different lengths of time. The most difficult aspect of change is transfer of responsibility from professor to the learner. Traditional methods of teaching will always be with us and are preferred by many instructors and students. However, the future requires the ability to have effective and flexible teaching and learning in a mobile society where institutions of higher education adapt their schedules, methods and support systems to respond rapidly and effectively to societal and individual learner needs.

Editor's Note: This paper examines the transformational role of technology in teaching and learning. Just as the printing press played a transformational role in the renaissance, do electronic technologies play a similar role in distance learning? The analysis presented here shows the importance of technology as a tool to support transformation.

Can Technology Transform Online Learners?

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USA

Abstract

The most common misconception is that technology can transform online learners as the power of E-learning has been exaggerated in the 21st century. As an essential component of our social environment, technology can only *help* to transform online learners. In other words, it provides a powerful teaching/learning tool used to "enhance" learning, hence learners changed in the three most often talked about domains. This article argues that it is the learners themselves that seek perspective transformation via critical theory and epistemological positions in the virtual environment. Technology, together with online course instructors play a helping role in terms of helping learners attain changed behavior. Through the discussion of the above pertinent issues, an insightful model titled *Learners' Seeking Transformation via Web 2.0 Technologies*, has emerged.

Keywords: instrumental, practical, communicative, emancipatory, epistemological, postpositivism, constructivism, advocacy/participatory, pragmatism, reflection, confucius, and transformation

Introduction

Researchers and educators have been grappling with the issue: can technology transform online learners? It is true that learners engage in online learning in order to seek change in Bloom's (1956) three domains: 1, cognitive domain; 2, psychomotor domain; and 3, affective domain. In other words, for educators and researchers to find out whether online learners have learned anything from their online courses, they can ask the following questions:

1. Do the learners think differently after completing this online class?
2. Do the learners act differently after completing this online class?
3. Do the learners feel differently after completing this online class?

Evidently, the three questions revolve around the three domains of educational objectives. Once these objectives are achieved on the part of learners, we say that the learners are transformed. However, the question remains unanswered: who has transformed these online learners? Course instructors, Web 2.0 technologies or the learners themselves?

First of all, course instructors have been trained in a specific discipline. Then, given their knowledge base and instructional experience, they are hired by universities or colleges to "teach" online courses. To be successful in the online learning environment, they must possess a certain body of knowledge that they can impart to their learners one way or the other. In Western cultures, an instructor's teaching is constantly evaluated by students. If instructors keep receiving low ratings from students, they may be subject to further training in the field. In rare cases, some unqualified instructors' employment as professional teachers may be terminated. Those who remain in the academy based on consistently good teaching evaluations are considered knowledgeable in the field or have the ability to impress their students enough to warrant a good review of their teaching abilities. Above all, as teachers, they inspire learners to transform

themselves via their teachings or serving as role models even in the virtual learning environment. There has been more than enough literature on how course instructors transform online learners.

What about technology? Can technology transform online learners? Since education was delivered in the early 21st century, scholars have been asking this question. Some say, "yes, technology transforms online learners in a big way." Others say, "technology provides only teaching and learning tools; it is the learners that can seek transformation themselves." Two lines of thought have been presented, but are subject to deeper exploration. It is true that too many exaggerations regarding the power of technology have been heard of in online teaching and learning environments. Some have become rather cliché. For example, people have been known to say, "technology will replace human beings." "Technology will lead to the demise of the face to face classroom teacher." "Intelligent computers will replace classroom teachers." While some educators feel threatened by these exaggerations, others choose to explore the power of technology. In fact, programmed instruction started in the early 1960s with the advent of computers and behaviorist theory advanced by Watson and Skinner (1967; 1968). The literature regarding the power of technology in the past has revealed some central themes:

1. Learners study technology as technology represents a core body of knowledge.
2. Learners learn from technology as technology complements and supplements learners' existing knowledge base.
3. Learners learn with technology as technology represents one access point to knowledge.

However, little has been written regarding whether technology can transform online learners. Since Marx advanced critical theory and Habermas advanced the three kinds of knowledge, Mezirow advanced the theory of transformative learning. The theory of transformative learning helps interpret how learners seek change in the three domains of educational objectives. Mezirow emphasizes perspective transformation, that is, the cognitive and affective domains. A brief summary of perspective transformation follows.

Transformative learning is a process (Mezirow, 2000) that describes how learners transform a habit of thought by redefining a problem and examining her/his own assumptions, content, or process for problem solving. Learners who progress through a transforming event critically reflect on their assumptions and examine their points of view to determine how they approached solving problems presented by that event. Those transformations may be all of a sudden or epochal or take place over time with small or incremental changes and shifts in one's thought process. Steps that lead to a transformation typically begin with what Mezirow calls a "disorienting dilemma" (p. 22). From that dilemma, the learner examines his or her feelings and evaluates the assumptions that lead up to the disorienting dilemma. At this point, the person can ignore the event and its effects or recognize that they are not the only ones going through such an event and explore ways to prevent the disorienting dilemma from occurring again. If transformation is to take place, the person becomes a learner and sets out on a process of exploring new ways to approach the dilemma. Once new approaches are discovered, the learner can develop a plan, tries different approaches, learns from the experiences of the new approaches, and the learner becomes more skilled and competent in their newfound knowledge. As they work towards avoiding the disorienting dilemma, their new perspective and understanding is integrated back into one's life. The core of the process of transformative learning is the use of critical reflection.

Perspectives are made up of frames of references or, "the structure of assumptions and expectations through which we filter sense impressions" (p. 16). Our frames of references are shaped by our experiences and how we interpret them and can represent cultural values or personal beliefs. Ones frame of reference is made up of two parts: habit of mind and points of

view. Our habit of mind is based on the assumptions we hold regarding social, ethical, philosophical, psychological, and aesthetic values (Mezirow, 2000). Our point of view is how we express those assumptions. In other words, how we act upon those habits of mind becomes our point of view. Points of view are made up of a group of meaning schemes, or how we feel, believe, judge, or react to events or objects in the real world. As we are often times unaware of the meaning schemes we hold, they have the ability to impact how we interpret the world around us. Our meaning schemes inform our frame of reference and impact how we express those frames of references to the rest of the world. People rely on those frames of reference as a touchstone for their existence and sense of identity. When alternative points of view are expressed that challenge existing frames of reference, it is more likely that the person will disregard them. However, if a disorienting dilemma challenges those frames of reference to the point that they cannot be dismissed, it is likely the person will experience transformative learning.

Critics of the theory cite lack of consideration of social context. If technology is considered part of the social context, it comes back to the same question: Can technology transform online learners in relation to the theory of transformative learning?

In the field of adult education, what plays a major role in terms of learners' transformation, technology or the learners themselves via epistemological positions? This article seeks to shed some light on how online learners seek to transform themselves through different epistemological positions in relation to the theory of transformative learning and even the much debated theory of andragogy advanced by Knowles (1970, 1975). It does not seek to underestimate the power of technology. Rather, technology provides excellent teaching and learning tools in the online environment. As Olgren (2000) indicates, "technology invites a tools-first emphasis, but technology is only as good as our knowledge of how to use it to enhance learning" (p. 7).

Theoretical Framework

For years, scholars and educators have been relying on the theory of andragogy (Knowles, 1984), or principles of adult learning, to help understand how learners seek change in the field. In the early 1990s, scholars such as Mezirow and Cranton began to advance a new theory, the theory of transformative learning to help interpret how learners seek transformation, especially a deep shift in perspective. According to Mezirow and Cranton (1991, 2000; 2010) the process of transformative learning focuses on critical reflection and critical self-reflection whereas other scholars may place imagination, intuition, and emotion at the heart of transformation (Dirkx, 2001). Although Mezirow's theory was based on a study of women who found that their experience of returning to college led them to question and revise their personal beliefs and values in a fairly linear ten-step process, theoretically, he drew on Habermas's (1971) three kinds of human interest and the resulting three kinds of knowledge—Instrument, practical, and emancipatory. The goal in using transformative learning theory is for learners to attain emancipatory knowledge by critically reflecting upon the first two kinds of knowledge—Instrumental and Practical (Communicative in Mezirow's terms). Further, Mezirow addressed three types of meaning perspectives—epistemic (about knowledge and how we acquire knowledge), sociolinguistic (understanding ourselves and social world through language), and psychological (concerned with our perception of ourselves largely based on childhood experiences). Mezirow appears to focus more on the cognitive domain of educational objectives.

However, critics of Mezirow's theory fail to understand that in order for learners to become meaningful doers, perspectives must be changed first. Consider Kacirek, Beck, and Grover's quote, "even the early Greeks believed that working people didn't think and thinking people didn't work" (as cited in Kacirek, Beck, & Grover, 2010, p. 32). Although Mezirow was modest and humble by saying that his theory is a theory in progress, his emphasis on cognitive and affective domains was well justified by even early Greeks.

The next question to ask is how helpful is the theory of transformative learning when interpreting whether technology, as part of the social context, can transform learners. Or is it as powerful as the traditional theory of andragogy in terms of interpreting the relationship between technology and online learners? In the next section, we address how learners acquire knowledge in the virtual learning environment by reflecting on the theoretical framework.

Epistemological Positions and Online Learning

Learners engage in online learning for a variety of reasons. The asynchronous nature of online learning is so conspicuous and returning students especially enjoy this feature of online learning because of their multiple work/family responsibilities (Wang, 2006, 2008). Some employees take online courses because learners are limited to those courses provided via Blackboard or WebCT programs. Learners, as a result, can save money on gas and have the flexibility of taking asynchronous courses anytime throughout the day rather than adhering to a set schedule. Other learners take online courses because it is mandated by their employers. Those organizations that wish to remain competitive in this global economy must seek to train and retrain their employees in the new century. Having employees take university courses is a primary method of training employees. Needless to say that traditional age students can take online courses to attain career and life goals. Given the downturn of the economy, universities wishing to save money offer online courses and, thus, do not have to pay for brick and mortar buildings, construction of parking lots, nor their upkeep. All these reasons may point to one direction, that is, online learning as predicted by Knowles (1975) has become popular in the new century. And the popularity of online learning is driven by four epistemological positions: postpositivism, constructivism, advocacy/participatory, and pragmatism. These four positions are closely related to Mezirow's theory of transformative learning. The heart of his theory is for learners to experience perspective change via critical reflection and critical reflection must be based on Habermas's three kinds of knowledge and the four espitemological positions. Without interpreting the four positions, readers may wonder how learners engage in learning online via technology. It comes back to the central question: can technology transform online learners? By expanding the four positions in the following section, readers will see clearly that it is the learners who seek to transform themselves while technology is meant only to be used to enhance learning.

Postpositivists believe that knowledge is created by humans conjecturing and that, for learners to create an understanding, it is important that they work with and challenge the conjectures (Bettis & Gregson, 2001). In the virtual environment, course instructors can arrange knowledge by specifying course syllabus, course assignments, discussion topics, course evaluation methods and learning resources. Then online learners come to the virtual environment to study, observe and even challenge these conjectures in order to determine effects or outcomes. Course instructors justify the course's existence by saying, "there are laws or theories that govern the world, and these need to be tested or verified and refined so that you, as learners, can understand the world." If we try to connect this position with instructional methods, we can likely say that this position is in agreement with andragogy instead of pedagogy simply because instructors link learners to learning resources. Learners do the "legwork" by embarking on Habermas's instrumental knowledge and practical knowledge in order to attain emancipatory knowledge—perspective transformation in Mezirow's terms.

Constructivists assume that individuals seek an understanding of the world in which they live and work. Individuals develop subjective meanings of their experiences—meanings directed toward certain objects or things (Creswell, 2009, p. 8). Creswell further indicates that these meanings are varied and multiple, leading the learner to look for the complexity of views rather than narrowing meanings into a few categories or ideas. Based on this position, online learners' tasks are clear: learners construct the meaning of a situation, typically forged in discussions or interactions with

other persons. Then course instructors may arrange more open-ended questioning, case studies, analyzing personal experiences. These instructional methods all fit well with this position. In adult education, this epistemological position penetrated into the field a long time ago. When scholars address "experiential learning", they want learners to make meaning out of their experience. Some universities in the United States grant college credits to adult learners based on experiential learning. If learners can turn their prior experience into knowledge, skills or attitudes, why require them to take redundant courses to waste their time or money? In the virtual learning environment, instructors may arrange learning activities around learners' prior experience. Again, we can tell that learners seek change in the cognitive domain or affective domain based on the reflection of their experiential learning or prior learning. Technology is used as an external environment. To further elaborate on the constructivist position, we will focus on the following central themes:

1. Meanings are constructed by learners themselves as they engage with the virtual learning environment. Course instructors tend to use open-ended questions so that the learners can share their views and generate knowledge through their sharing.
2. Learners engage with the virtual learning environment and make sense of it based on their historical and social perspectives. Course instructors may remind learners to seek to understand the context or setting by visiting this context and gathering information personally via the use of technology.
3. The basic generation of meaning is always social, arising in and out of interaction with an online learning community. The goal of course instructors is to foster an online learning community.

Scholars and educators feel that postpositivist and constructivists do not go far enough in advocating for an action agenda to help marginalized peoples in society. Therefore, they developed advocacy/participatory worldview by drawing on the writings of Marx and Freire (Neuman, 2000). According to Creswell (2009), an advocacy/participatory worldview holds that learners need to become radical philosophers, that is, they need to have an action agenda for reform that may change the lives of themselves, the institutions in which they work or live, and perhaps the larger society. The course instructor's role is to have learners speak to important social issues of the day, issues such as empowerment, inequality, oppression, domination, suppression, and alienation. Learners should be considered equals of their course instructors. Therefore, learners may help design online learning questions, collect data, and analyze information together with their course instructors in the online learning environment. Since this epistemological position focuses on the needs of the learners and learners in society that may be marginalized or disenfranchised, we can tell the ultimate goal of this position is for learners to develop emancipatory knowledge. Specifically, learners can seek to do the following in order to develop a perspective change:

1. Learners advance an action agenda for change based on this worldview.
2. Learners seek to free themselves from constraints found in the media, in language, in work procedures, and in the relationships of power in educational settings.
3. Learners began with an important issue or stance about the problems in society.
4. Learners seek to create a political debate so that real change will occur.
5. Course instructors consider their learners as active collaborators in the learning process in the virtual environment.

The fourth epistemological position is pragmatism that maintains that a worldview arises out of actions, situations, and consequences rather than antecedent conditions as in postpositivism

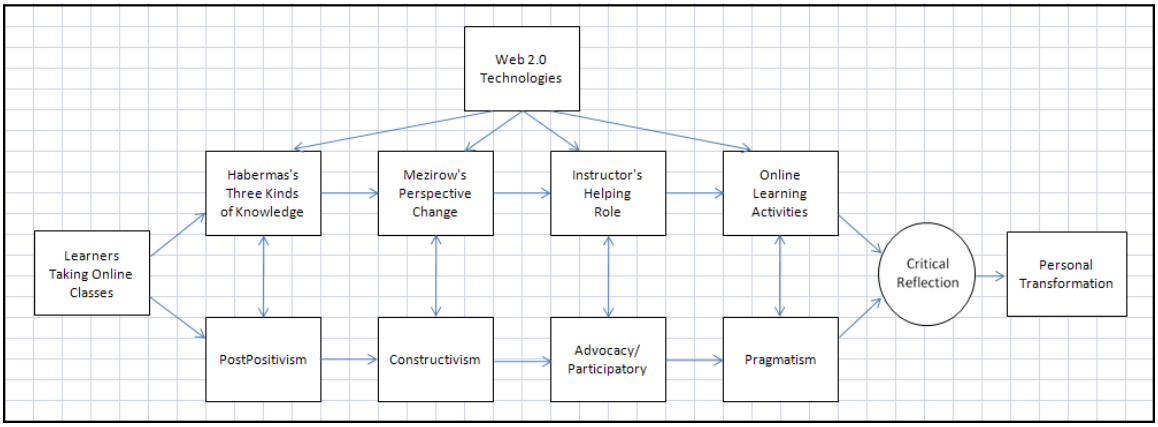
(Creswell, 2009). Learners are required to use all approaches available to understand problems. To understand problems, learners are free to choose the methods, techniques, and procedures that best meet their needs or purposes. Learners may use multiple methods to understand a particular problem. The emphasis in pragmatism is on hands-on application and practical solutions to problems rather than esoteric or theoretical approaches.

In summary, the four epistemological positions together with the theory of transformative learning and principles of andragogy all translate into instructional methods either in the traditional classroom setting or virtual learning environment. These positions view knowledge acquisition differently, yet they share some commonality. It seems that no single position seeks to specify pedagogical instructional methods. Rather, they all prompt course instructors to provide "andragogical" instructional methods, which were vividly described by Knowles, Holton and Swanson (1998) as follows:

> Finally, I found myself performing a different set of functions that required a different set of skills. Instead of performing the function of content planner and transmitter, which required primarily presentation skills, I was performing the function of process designer and manager, which required relationship building, needs assessment, involvement of students in planning, linking students to learning resources, and encouraging student initiative. (p. 201)

Indeed, both instructors and technology play a helping role rather than a directing role in the virtual learning environment (Wang, 2005). For any change in the three domains of educational objectives to occur, it is the learners that seek to transform themselves and their transformation can be clearly expounded by the prevalent theories or epistemological positions.

The following model has emerged from this article and several points are worth emphasizing:



Model One: Learners' Seeking Transformation via Web 2.0 Technologies

Technology as a teaching/learning took provides an interactive learning environment to enhancing learning.

1. Instructors play a secondary helping role by providing a conducive environment via putting their course syllabi, assignments and discussion forums online.
2. It is the learners that seek to transform themselves and their transformation is driven by learning theories and epistemological positions.
3. Change, whether more in cognitive or affective domains, is bound to occur because of the nature of epistemological positions and our worldviews.

4. Relying too much on technology without taking into consideration learning theories or epistemological positions will prevent instructors from prescribing the much needed andragogical instructional methods.
5. What really contributes to learners' transformation is the learners themselves. Change must come from within the learners not from outside the learners.

Further Reflections

Technology was designed and built by intelligent humans and it is supposed to serve the learning needs of learners and instructional needs of instructors in this information age. We have advanced into this information age simply because education is being delivered electronically. And technology has permeated society in general, and major government and economic stakeholders have recognized the importance of incorporating technology throughout education in order to prepare a competitive workforce in a global economy (Farmer, 2010, p. 276). However interactive technology can be used in the teaching/learning arena, it is only one access point to knowledge, skills and attitudes. Learners have to do the learning in order to achieve perspective transformation in Mezirow's terms. Learners learn in traditional classroom settings and learners learn in virtual environment. If learners are not motivated to learn, if learners are not self-directed to learn and if learners do not use the basic five senses to acquire knowledge, perspective transformation is not likely to occur. What really contributes to learners' transformation are Habermas's three kinds of knowledge, Mezirow's interpretation of critical reflection, epistemological positions and even Knowles (1984) principles of andragogy. As a tool to enhance learning, technology does play a major role. However, technology itself can not enable transformation of online learners if learners are not engaged in actual learning themselves. As a tool, learners should take advantage of it. Some senior learners may get scared when thinking of learning via technology. Some younger learners may take technology for granted, believing they can be multi-tasked in terms of learning. Having the right attitude towards using technology as a tool to enhance learning is key to successful perspective transformation on the part of learners.

In addition to learning to be technology savvy, learners need to be internally motivated to learn. Confucius's "silent reflection" is not outmoded in terms of promoting transformative learning. *Schutz* (1967) argues, "I *live in my Acts and by reflecting upon* them" (p. 51). Once we do this, we begin the process of critical reflection or meaning-making in our *lives.* The process of meaning making is a great way to transform oneself and it is such an essential part of the theory of transformative learning. Although technology serves as one access point to knowledge, it can also serve as a subject matter for learners. Do we not have universities where instructional technology is treated as an academic discipline? Learners can even obtain doctorate degrees in technology. Once learners obtain their degrees, they can practice in the field of technology. Professionals in the field teach "technology" as a subject. A subject of an academic discipline does not seek to transform online learners if learners decide to have nothing to do with it. It is when learners have made learning decisions to study such a subject or academic discipline that perspective transformation can begin to occur. To achieve three domains of educational objectives, learners need to be immersed in learning the subject matter. After this rigorous process of learning, learners can be totally transformed. Technology as an enhancing tool also provides a learning environment. As to whether learning will occur, Rogers' 1969 hypotheses regarding learning should be taken into consideration on the part of online instructors:

1. Human beings have a natural potential for learning. They are curious about their world, until and unless their curiosity is blunted by their experience in our educational system. They are ambivalently eager to develop and learn. The reason for the ambivalence is that any significant learning involves a certain amount of pain, either pain connected with the learning itself or distress connected with giving up certain previous learnings.

2. Significant learning takes place when the subject matter is perceived by the student as relevant for his/her own purpose. A person learns significantly only those things which he perceives as being involved in the maintenance of, or the enhancement of, his own self.
3. Learning which involves change in self-organization—in the perception of oneself—is threatening and tends to be resisted.
4. Those learning experiences, which are threatening to the self, are more easily perceived and assimilated when external threats are at a minimum.
5. When threats to the self are low, experience can be perceived in a different fashion and learning can proceed.
6. Much significant learning is acquired through doing.
7. Learning is facilitated when the student participates responsibly in the learning process.
8. Self-initiated learning which involves the whole person of the learner—feelings as well as intellect—is the most lasting and pervasive.
9. Independence, creativity, and self-reliance are all facilitated when self-criticism and self-evaluation are basic and evaluation by others is of secondary importance.
10. The most socially useful learning in the modern world is the learning of the process of learning, a continuing openness to experience and incorporation into oneself of the process of change.

All these hypotheses are important, but involving the whole learner—feelings as well as intellect should be the most important in terms of helping learners achieve perspective transformation. Without going through this process, learners' behavior can be changed to a certain extent. As Rogers put it, to achieve the most lasting and pervasive change, learners should involve the whole person in learning. To do so, learners also need to be engaged on multiple levels and with multiple experiences and technology can help provide those experiences.

Conclusion

This article has posited that technology cannot transform online learners. Rather, it is the learners themselves that can transform themselves by using technology as a tool to enhance learning. The theory of transformative learning has developed as a different branch of the theory of andragogy in adult education. It is based on Habermas's three kinds of knowledge, Marx's critical theory and Freire's radical philosophy. Learners seek to transform themselves via four epistemological positions. No one single theory of learning is more important than another. As Knowles's prediction about E-Learning came true in the new century, technology has provided an additional learning environment for learners to engage in transformative learning. In a sense, this additional access point to knowledge has accelerated learning, which means that learners do learn at a faster pace than in the past when technology was not available. Learning anywhere, anytime is needed in the information age when speed is used to measure learning or progress. It took Chinese engineers many years to develop faster trains and now their trains "fly" at the speed of 353 kilometers per hour. Suppose learners take these trains to go to schools to learn certain academic subjects. Well, learning can be accelerated because of these faster trains—new technology. More time gained by taking faster trains means learners can spend more time on critical reflection. Does more time on critical reflection mean more learning? Supposedly so. According to Rogers (1969), learning involves the whole person of the learner . . . and the whole person needs more critical reflection.

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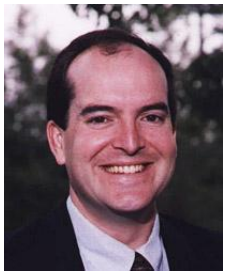

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Editor's Note: This is a timely discussion of a complex question. Perhaps the proven quality of the training institution (branding) is actually a major factor in the choice of which professional will be hired.

Will You Hire The Services of Professionals Who Completed Their Professional Preparation Completely Online?

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USA

Abstract

More and more people are obtaining their credentials online every year. This number is likely to continue to grow for several years before it begins to level off. Research has shown there is some skepticism and bias among potential employers against potential employees who have earned their credentials in fully online settings. Such research is restricted to employers in organizations. However, a number of individuals and families do also hire or contract the services of various professionals who serve individuals and families. The purpose of this exploratory study is to determine if individuals will or will not contract the services of professionals who completed their professional preparation fully online.

Introduction

The numbers of colleges and universities that are offering courses and even complete degree programs online in many disciplines and professional fields are growing every year. The numbers of students who are enrolling in online courses is also increasing and has not yet leveled off or reached a plateau. For example, according to Allen and Seaman (2010: 1), "Over 4.6 million students were taking at least one online course during the fall 2008 term; a 17 percent increase over the number reported the previous year." By comparison, during the same period the total population of students in institutions of higher education grew only by 1.2 percent (Allen and Seaman, 2010).

Purpose

Distance education is certainly a growing field, and all indications are that it will continue to grow at least for several more years into the future. However, some research studies have shown that those who are in a position to employ students who complete their education online have some concerns or biases towards candidates who were educated fully in online settings (Adams, DeFleur, and Heald, 2007; Adams & DeFleur, 2006; Carnevale, 2007; Flowers, 2007).

A few studies have been conducted to determine the acceptance of online graduates by potential employers in organizations, and these will be briefly reviewed in a following section of the paper. However, research about whether individuals will contract the services of various professionals who receive their training completely online is practically nonexistent.

The purpose of the study is to explore if the participants in the study will contract or hire the services of people in various occupations and professions, who completed their degree or earned their professional credentials completely online.

Background Information

Distance education is growing not only in the United States, but worldwide as well with large numbers of students being served across the world as well (Altbach, Reisberg, & Rumbley, 2009: xvi):

> "It is extremely difficult to calculate the numbers of students engaged in distance education worldwide but the existence of nearly 24 mega-universities, a number of which boast over one million students, speaks to a quantitatively significant phenomenon."

It is true that distance education is growing worldwide, and is likely to continue to grow for quite some time. Another indicator of the global growth of distance learning is the proliferation of journals devoted to the topic. The authors of this paper were able to identify without much effort journals focusing on distance education that are published in several countries such as Australia, Brazil, Britain, Canada, China, India, Italy, Malaysia, New Zealand, Spain, Turkey, and the United States. The list of countries publishing journals in the area of distance education is only likely to grow in the future.

A number of research studies that compared student performance in traditional face-to-face courses and distance education courses have been conducted and many of these, (for example Dell, Low, Wilker, 2010; Derwin, n.d.; Neuhauser, 2002; and Rivera, & Rice, 2002) tend to reinforce the notion of the "no significant difference phenomenon" identified by Russell (1999).

The cumulative results of such studies have also been summarized by other studies using meta-analysis, a technique that was originally developed by Glass (1976). Some of these meta-analyses (e.g. Bernard, Abrami, Lou, Borokhovski, Wade, Wozney Wallet, Fiest, & Huang, 2004; and Means et. al., 2009) have found that students who completed their coursework either fully or partially online performed better than those who completed their coursework only in face-to-face educational settings, thus raising skepticism regarding the once widely accepted "no significant difference phenomenon" (Russell, 1999).

However, skepticism and bias regarding the qualifications of graduates who earn their credentials completely online is still prevalent among potential employers (see for example Carnevale, 2005; Carnevale, 2007; and Huss, 2007) and among those who make graduate admissions decisions (DeFleur & Adams, 2004). Studies conducted by Adams and Defleur (2006), Adams, DeFleur & Heald (2007), Flowers (2007), Flowers & Baltzer (2006) also showed that potential employers were more likely to hire those who had earned their degrees or credentials after completing coursework in traditional face-to-face programs than those who had completed such degrees in completely online settings.

Such negative perceptions may be changing with time. For example, Guendoo (2009) found that, now, community colleges were more open to hiring applicants who had completed their doctoral education online if the candidates also had the other necessary qualifications and experiences that educational institutions expect job applicants to possess.

It is not only universities and corporations that hire people, including those who earned their degrees and credentials online. Individuals and families also contract the services of various professionals, such as attorneys, nurses, physical therapists, surgeons, tax-preparers and tutors. Studies of hiring preferences of individuals is either very hard to finds or do not exist at all. This study is an attempt to fill a big void in research on this topic.

Study Methods

Description of the Sample and Data Collection

The technique of convenience sampling was used to recruit 113 participants from undergraduate and graduate classes taught at a public, urban, research university located in a southeastern state in the United States. Seventy six of the study participants or 67.3% were females and 37 or 32.7% were males. More than two-thirds of the students were of Hispanic heritage. This should not be surprising because the city in which the university is located is home to immigrants from almost all countries in the Caribbean and the Latin American regions.

After obtaining approval from the university's Institutional Review Board (IRB), selected faculty members who taught graduate and undergraduate classes were approached and their permission was sought to administer the survey in their classes. Students enrolled in the courses taught by the instructors who gave such permission were asked to complete the survey. An IRB-approved verbal consent statement was read to each group of students before the students completed the surveys. No rewards, incentives, or compensation were provided to the students who participated in the survey.

A question in the survey was designed to determine if the participants would contract the services of different professionals if they knew that the professional earned their credentials completely online. A number of professions were listed in the survey and the study participants were asked to indicate if they would or would not contract their services.

A third option of 'maybe' was also included in the survey. Participants who chose the third option were also asked to provide a brief written response explaining why they chose this response. Very few of those who participated in the survey provided written responses to this question. However, the few written responses that were provided will be reproduced while discussing the results of the study.

Data Analysis and Findings of the Study

As the data in Table 1 shows, the majority of respondents indicated that they would contract the services of accountants who were educated completely online. This is surprising because the work of accountants, if not done well, has serious consequences for the pocket book and a person's financial well-being. For example, an incorrectly prepared personal or business tax document can have unforeseeable and long-term repercussions such as fines levied, back taxes collected, wages garnished, and properties seized.

In spite of such potential risks, larger proportions of survey participants stated that they would contract the services of accountants. Sixty-one or 54.0% of the respondents agreed that they would contract the services of accounts. Forty-three or 38.1% of the study participants indicated that they would not contract for the services of their accountants. Nine or 8.0% chose the option "maybe."

Table 1
Frequencies – Would you contract the services of an Accountant who completed his or her professional preparation fully online?

Response to Question	Frequency	Percent	Valid Percent	Cumulative Percent
1 – Yes, I would contract services	61	54.0	54.0	54.0
2 – No, I would not contract services	43	38.1	38.1	92.0
3 – Maybe	9	8.0	8.0	100.0
Total	N = 113	100.0	100.0	

The frequencies data in Table 2 through Table 8 show that overwhelming majorities of study participants indicated that they will not hire the services of several of the other professionals, whose services are generally contracted by individuals and families, if such professionals completed their professional preparation fully online. These professionals included "architects," "counselors / therapists," "dentists," "nurses," "physicians," "Physical therapists," and "surgeons."

Table 2
Frequencies – Would you contract the services of an Architect who completed his or her professional preparation fully online?

Response to Question	Frequency	Percent	Valid Percent	Cumulative Percent
1 – Yes, I would contract services	31	27.4	27.4	27.4
2 – No, I would not contract services	72	63.7	63.7	91.2
3 – Maybe	10	8.8	8.8	100.0
Total	N = 113	100.0	100.0	

Table 3
Frequencies – Would you contract the services of a Counselor/Therapist who completed his or her professional preparation fully online?

Response to Question	Frequency	Percent	Valid Percent	Cumulative Percent
1 – Yes, I would contract services	35	31.0	31.3	31.3
2 – No, I would not contract services	69	61.1	61.6	92.9
3 – Maybe	8	7.1	7.1	100.0
Sub-Total	112	99.1	100.0	
9 – Missing	1	0.9		
Total	N = 113			

Table 4
Frequencies – Would you contract the services of a Dentist who completed his or her professional preparation fully online?

Response to Question	Frequency	Percent	Valid Percent	Cumulative Percent
1 – Yes, I would contract services	7	6.2	6.3	6.3
2 – No, I would not contract services	96	85.0	86.5	92.8
3 – Maybe	8	7.1	7.2	100.0
Sub-Total	111	98.2	100.0	
9 – Missing	2	1.8		
Total	N = 113	100.0		

Table 5
Frequencies – Would you contract the services of a Nurse who completed his or her professional preparation fully online?

Response to Question	Frequency	Percent	Valid Percent	Cumulative Percent
1 – Yes, I would contract services	12	10.6	10.6	10.6
2 – No, I would not contract services	93	82.3	82.3	92.9
3 – Maybe	8	7.1	7.1	100.0
Total	N = 113	100.0	100.0	

Table 6
Frequencies – Would you contract the services of a Physician who completed his or her professional preparation fully online?

Response to Question	Frequency	Percent	Valid Percent	Cumulative Percent
1 – Yes, I would contract services	6	5.3	5.3	5.3
2 – No, I would not contract services	99	87.6	87.6	92.9
3 – Maybe	8	7.1	7.1	100.0
Total	N = 113	100.0	100.0	

Table 7
Frequencies – Would you contract the services of a Physical Therapist who completed his or her professional preparation fully online?

Response to Question	Frequency	Percent	Valid Percent	Cumulative Percent
1 – Yes, I would contract services	8	7.1	7.1	7.1
2 – No, I would not contract services	95	84.1	84.1	91.2
3 – Maybe	10	8.8	8.8	100.0
Total	N = 113	100.0	100.0	

Table 8
Frequencies – Would you contract the services of a Surgeon who completed his or her professional preparation fully online?

Response to Question	Frequency	Percent	Valid Percent	Cumulative Percent
1 – Yes, I would contract services	7	6.2	6.2	6.2
2 – No, I would not contract services	99	87.6	87.6	93.8
3 – Maybe	7	6.2	6.2	100.0
Total	N = 113	100.0	100.0	

Suggestions for Further Research

The sample of university students who participated in this study was predominantly of Hispanic heritage. Similar studies could be conducted using samples of students from other ethnic groups. To obtain a broader picture of what the society as a whole thinks of professionals who complete their training online, similar studies should be conducted with larger and more representative samples of participants drawn from society at large, and not just from one university. It would also be useful to know whether there are significant differences in the opinions of those who have earned their own degrees and credentials online as opposed to those who earned their degrees by attending face-to-face classes. Future studies could also look at differences between the two sexes and also study age-related differences. Larger lists of professionals could also be included future studies. The findings of this study tell us which professionals the participants will or will not contract the services of, but it does not tell us why. It would be interesting to find out why participants decide whether or not they would contract the services of various professionals who completed their professional preparations in fully online settings.

Conclusion

The findings of this study are significant because it is perhaps one of the first studies, if not the first study, to identify skepticism among individuals who are in a position to contract the services of professionals who ". . . completed their entire professional preparation on-line," as stated in the survey. Many of the professionals included in this study provide services to individuals and families. If individuals are skeptical about hiring professionals that were trained fully in online settings, then they are more likely not to hire such professionals. This has consequences for both the professionals and the institutions that graduate them. The professionals who earn their credentials by being fully educated in online settings will be less competitive in the job market. The universities that offer such credentials may also be looked upon as being inferior to other institutions.

The findings of this study suggest that there is still some distrust of online training when it comes to hiring professionals in some fields. Colleges, universities, and other institutions that train professionals online can respond to such distrust in at least two ways. One way is for universities

to stop offering online training and credentialing of professionals in these fields. This is not likely to happen because there is a lot of demand for distance and online education, and as a consequence, money to be made, by offering degrees online. Another option is to make concerted efforts to improve the quality where needed, and the credibility of online course and program offerings.

Colleges and universities could also use research, if such research exists, to show that professionals who earn their credentials by completing degrees online are as capable as those who complete their degrees the traditional way as far as on the job performance is concerned. Educational institutions that offer professional credentials online could also initiate longitudinal studies to find out how professional who are prepared completely online perform in their careers compared to their traditionally trained peers. Such studies will become necessary as the numbers of undergraduate and graduate degrees that are offered in fully online settings continue to grow.

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Editor's Note: As learning improves, it is also necessary to update the infrastructure to support teaching, learning, and business operations of the University. Intuitively we know that business operations are more accurate and less expensive using computers, but is this the right time to implement the computerized business plan? This research validates the change and discovers the driving forces behind the transition.

Usage of Self-Service Technologies (SSTs): A Case Study of e-Debit System at Bursary UiTM Shah Alam

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Malaysia

Abstract

This study examines the levels of intention to use the self-service technologies (SSTs), in particularly the ATMs and internet banking among the postgraduate students in the Universiti Teknologi Mara (UiTM), Shah Alam. Since 2006, the Bursary of UiTM has introduced the e-debit system to the students as a new way to settle the tuition fees. The objectives of the e-debit system are to reduce the human interaction between the bursary's staffs and students, and the use of paper. In essence, the e-debit system consists of automated teller machines (ATMs), internet banking and cash transaction, but this study focuses on the usage of ATMs and online banking other than the cash transaction. Therefore, the research model proposed six variables, which are (a) perceived usefulness, (b) perceived ease of use, (c) perceived enjoyment (d) need for interaction, (e) security and privacy, and (f) demographic characteristics (such as gender, age, level of education, mode of study and faculty enrollment) for measuring the behavioral and intention to use the SSTs. Only 299 questionnaires were collected and this represents an 85.4% response rate. This study showed that the majority of the postgraduate students' intention to use SSTs is at a moderate level. Statistical analysis revealed that perceived usefulness, perceived ease of use, perceived enjoyment, and security and privacy are the factors that affect students' intention to use the SSTs. Furthermore, the results from stepwise multiple regressions demonstrate that perceived enjoyment is the best variable to predict students' intention toward the usage of the SSTs.

Keywords: Self-service technologies, internet banking, e-debit system, perceived usefulness, perceived ease of use, perceived enjoyment, need for interaction, students' intention, security and privacy

Introduction

Our daily lives have changed dramatically due to the technology revolution and we are getting used to technology-based services such as the internet, telephones, mobile phones and computers (Chau & Lai, 2003). Self-service technology (SST) refers to doing things by ourselves using technological devices with no interpersonal contact required between customer and service providers (Meuter et al., 2000). The SST may allow users to save time and expense in performing transactions (Polasik & Wisniewski, 2009). Many government departments around the world have adopted the internet as the primary means to deliver services to their citizens due to advantages such as electronic government or e-government. The ultimate goal of the e-government is to provide efficient and effective services to its citizens. In enhancing service quality, the Malaysian government has given the opportunity and freedom to all government departments to use its own creativity in implementing e-government. For example, the Bursary of Universiti Teknologi Mara (hereafter known as the Bursary), has made a step forward by introducing electronic payment to students in paying their tuition fees. Thus, this study used the bursary as a main source in order to determine the reliability and usefulness of e-debit as perceived by students. The University Teknologi Mara (UiTM) is well known for having a lot of

campuses in Malaysia. Currently, the UiTM has 29 campuses and 124,117 students throughout Malaysia (Bursary, 2008). Thus, the Bursary is interested in adopting new technology in order to improve the tuition fee collection process. Consequently, the Bursary officially introduced ATMs and internet banking as an alternative mechanism for paying tuition fees since December, 2006.

Historically, prior to 1991, the method of payment was by cash to the bursary, money order, postal order or bank draft. The payment by cash created long queues in front of the Bursary's counters. In order to solve this issue, in 1992, the Bursary engaged several banks to receive tuition fees. These are the Bank Simpanan Nasional (BSN), the Bank Muamalat, the Bank Commerce Berhad (BCB) and the Affin Bank. By using this system of payment, the Bursary would only have to generate bills and the faculty would distribute those bills to the students. However, this method created another problem if a bill was lost or misplaced before it reached the student or if a student misplaced a bill. Hence, in 2006, the Bursary set up collaboration with the Bank Islam Malaysia Berhad (BIMB) to introduce an electronic debit (e-debit) system in order to solve the problems created by misplaced bills. On top of that, the Bursary's aim is to minimise human interaction and to reduce paper usage.

In the e-debit system, all transactions between students and the Bursary can be performed through internet connection. This transaction can be performed in four steps. First, the Bursary will generate the bills and upload them on the student portal. Second, students can access these bills online at any time, 24 hours a day for 7 days a week and at any place. Third, the BIMB will receive the students' information from the Bursary in seconds after the bills generated. Fourth, students can settle their bills by giving their document number to any of the BIMB's branches.

In Malaysia, there are very limited studies had done on the issues of the SSTs' acceptance and adoption, in particular using the ATMs and internet banking. This issue, in some ways, has provided an avenue to this study to research the effectiveness of the e-debit system using ATMs and internet banking among UiTM's students. Therefore the purposes of this study are to a) examine students' intention on the usage of the self-service technologies (SSTs) such as ATMs and internet banking offered by the Bursary, b) to examine factors affecting the intentional use of SSTs and c) to examine factors that support use of SSTs.

Literature Review

Factors Influencing and Hindering the Intentional Use of Self-Service Technology

Perceived Usefulness

Perceived usefulness (PU) is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). Ndubisi and Jantan (2003) defined perceived usefulness as the benefits derived from using a technology. It could be measured by increase in productivity, improvement in job performance, enhancement of job effectiveness as well as usefulness in the job. Previous studies in different countries showed that perceived usefulness was an important predictor of self-service technologies adoption (Wang et al., 2003; Pikkarainen et al.,2004; Curran & Meuter, 2005; Guriting & Ndubisi, 2006; Rigopoulus, 2007; Amin, 2007).

Perceived Ease of Use

Users are more likely to use a new technology if that technology is easy to use, user friendly and requires less effort to complete the tasks. Perceived ease of use (PEOU) was described as "the degree to which a person believes that using a particular system would be free of effort or freedom from difficulty" (Davis, 1989, p. 320). Meanwhile, Ndubisi and Jantan (2003) defined PEOU as a level of ease or difficulty in using a technology. A number of studies on the PEOU showed that PEOU was one of the determinant factors of system use particularly on the use of

internet banking and ATMs (Wang, et al., 2003; Curran & Meuter, 2005; Park & Chen, 2007; Rigopoulos, 2007; Amin, 2007).

Perceived Enjoyment

Customers tendency to use the SSTs is supported by intrinsic motivation such as fun and enjoyment in using the technologies (Dabholkar, 1994). Perceived enjoyment (PE) is about the feeling of joy and pleasure, which emerges immediately from using the technology especially the computer and internet (Teo, 2001). Igbaria et al. (1996) explained that perceived enjoyment was an intrinsic motivation and users might be motivated to use new technology if they were able to obtain intrinsic psychological rewards. In addition, Heijden (2004) defined intrinsic motivation as fun that emerges from using the system. In terms of internet usage, PE (perceived enjoyment) had a positive relationship with internet usage (Teo, 2001; Zhang, 2004).

Demographic Characteristics

Previous studies found that internet usage, as a medium of online banking, associates with demographic characteristics such as gender, age and level of education (Teo, 2001; Chang & Samuel, 2004).

Security and Privacy

There is still a group of users who are reluctant to accept the self-service technologies due to security and privacy issues. Security and privacy risk referred to a possibility of the migration of personal information to the third parties without customers' knowledge or permission (Sathye, 1999; Howcroft et al., 2002; Gerrard & Cunnigham, 2003; Zhao et al., 2008, Lee, 2009). The level of risk becomes high if there is no sufficient security and privacy guaranteed by the service providers especially banks. Hence, lack of security and privacy becomes a barrier in adopting internet banking.

Need for Interaction

Customers need to interact with bank employees in order to obtain sufficient information before making a decision. Thus, customers visit a branch bank to obtain sufficient information from the bank employees (Falvian, Guinaliu & Torres, 2006), users' overall satisfaction (Haytko & Simmers, 2009), and customers who were uncomfortable, worried and anxious while using SSTs (Walker et al. 2002).

Technology Illiterate

A study done by Mols, Bukh and Nielsen (1999) revealed that customers were unwilling to use self-service technologies because they needed to access the internet in order to utilize the services and it was a hectic problem for those who were illiterate in internet and computer usage.

Research Model

The research model is derived from combining various models in previous studies, which consist of perceived usefulness and perceived ease of use, perceived enjoyment, need for interaction, security and privacy, and demographic variables as independent variables, and behavioral intention to use SSTs is dependent variable (S.Wang, M.Wang, Ling & Tang, 2003; Shih & Fang, 2004; T.Pikkarainen et al.,2004; Curran & Meuter, 2005; Rigopolous, 2007).

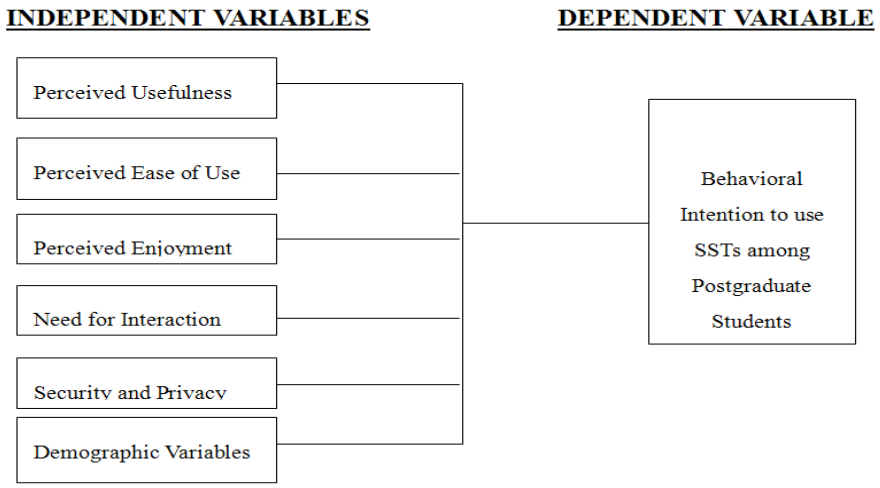

Figure 2.1: Research Model of Behavioral Intention to Use Self-Service Technologies

Methodology

This study employed a self- administered survey questionnaire as a method for collecting data. Prior to distribution of questionnaires, the number of questionnaires to be distributed for every faculty's areas, which are the Science and Technology, Social Science and Humanities, and Business and Management are determined based on proportionate stratified random sampling. The rationales of dividing 24 faculties into three (3) areas are to create clusters that have homogeneous groups and due to time constraint in collecting and distributing data. Currently, there are 24 faculty in UiTM and the total population of postgraduate students is 3,572 for the semester June/ December 2009.

Postgraduate students were selected as a sample due to their familiarity in using e-debit. A sample size is determined by using the Creative Research Software System. Three hundred and fifty students were selected from the population that based on 95% confidence level and 5% confidence interval. The questionnaires were divided into three-parts.

1. Part A has 25 questions about respondents' perception on the SSTs. It can be further divided into five (5) factors, which are: (a) perceived usefulness, (b) perceived ease of use, (c) perceived enjoyment, (d) need for interaction, and (e) security and privacy.
2. Part B is comprised of five questions related to the behavioral intention of SSTs.
3. Part C is about the respondent's background: (a) gender, (b) age, (c) level of education, (d) mode of study, and (f) faculty.

The questions were adapted from different sources based on previous research (S.Wang, M. Wang, Ling and Tang, 2003; Shih and Fang, 2004;T. Pikkarainen et al., 2004; Curran & Meuter, 2005; Rigopolous, 2007). From 350 questionnaires distributed to the respondents, 299 questionnaires were completed and returned. This is equivalent to an 85.43% response rate.

Data Analysis and Discussion

Descriptive statistics are employed in order to achieve thefirst research objective in which the respondents are asked five questions about the behavioral intention to use the SSTs. The total summed scores are calculated where the summed scores is used as an instrument rather than as a single-item score. Then, the total behavioral intention scores are separated into three categories

which are; (a) 5.00-10.99, as lowest; (b) 11.00 -15.99, moderate level; and (c) 16.00-20.00 as the highest level of intention. Table 1 demonstrates the level of students' intention to use self-service technologies.

Table 1
Scales of Score

Scores	Frequency	Percentage	Level of Intention
5.00 - 10.99	6	2.00%	High
11.00 – 15.99	189	63.21%	Moderate
16.00 – 20.00	104	34.78%	Low
	299	100.00%	

Most of the postgraduate students that represent 189 questionnaires (63.22%) have moderate intention to use SSTs. Thus, one could assume that the level of intention in using SSTs among majority of postgraduate students in the UiTM, are at the moderate level. This could be due to the proportion of gender among postgraduate students that is slightly different from each other. The proportion of female (204) students is higher than male (95). This can be evident from the information tabulated in the Table 2.

Table 2
Students' Intention to Use Self-Service Technologies by Gender

Gender	Mean	Frequency
Female	15.67	204
Male	16.02	59
Total	15.78	299

The mean scores for female students are 15.67 and male students are equal to 16.02. On top of that, this result is consistent with the works of Young (2000) and Nilsson (2007). Where, the authors revealed that males are more likely to use SSTs because they have a positive attitude toward the SSTs, high levels of confidence, greater computer skills and less anxiety compared to females.

In answering the second research objective, a T-test, One-way ANOVA and regression analysis are performed independently. The objective of these tests is to examine which independent variables (IV) are affecting students' intention in using SSTs, in particular ATMs and internet banking, that is offered by the Bursary of UiTM. Independent T-tests are performed in examining whether gender, education level and mode of study, may in some ways, have significant effect on students' intention to use SSTs. In addition, the One-way ANOVA was conducted to investigate the age categories. The rest of independent variables (IV) such as perceived usefulness, perceived ease of use, perceived enjoyment, need for interaction, and security and privacy are examined by a regression analysis.

As shown in Table 3, the result of T-test found that gender has no significant effect on the students' intention to use the SSTs ($p = .234$, $p > .05$).

Table 3
Independent sample T-test of Gender toward Intention to use SSTs

	T-test for Equality of Means		
	t	*df*	*p*
Equal Variances assumed	-1.191	297	.234

This result is consistent with previous studies that reported gender did not play an important role in adoption of technology (Gefen & Starub, 1997; Maldifassi & Canessa, 2009). Another probable reason might be because students in UiTM, regardless of whether they are female or male, are more technology literate due to extensive efforts by UiTM to provide more facilities related to information, technology and communication. These sophisticated technologies gradually enhance student skills, experiences and perceptions of technology.

Table 4 showed that educational level (Masters or Ph.D.) is not significant in measuring the students' intention to use the SSTs. This is evident in the *p*-value = 0.107 ($p > 0.05$). The possible explanations could be because both groups are categorized as possessing similar levels of education and SSTs such as ATMs and online banking are easy to use. Thus, differences in level of education are unimportant in determining their intention to use the SSTs.

Table 4
Independent sample T-test of Educational Level toward Intention to Use SSTs

	T-test for Equality of Means		
	t	*df*	*p*
Equal Variances assumed	-1.616	297	.107

As shown in Table 5, *p*-value is equal to 0.459 ($p > 0.05$) and it signifies that mode of study is not a significant factor in students' intention to use SSTs. One plausible explanation is that both groups (full-time and part-time) intend to use ATMs and online banking rather than cash in BIMB's counter service to settle financial matters related to the Bursary. SSTs are very useful to students due to benefits offered. Hence, the difference in mode of study is not important.

Table 5
Independent sample T-test of Mode of Study toward Intention to Use SSTs

	T-test for Equality of Means		
	t	*df*	*p*
Equal Variances assumed	.741	297	.459

Age is categorized into four categories (a) 20-29, (b) 30-39, (c) 40-49, and (d) above 50 years old. However, Czaja et al. (2006) categorized age into three main categories (a) 18-39, younger adult; (b) 40-49, as the middle adult; and (c) 60-91, older adult. Table 6 demonstrates that the *p*-value is 0.316 ($p > 0.05$). Thus, the result reveals that age is insignificant and not an integral factor that affecting students' intention to use SSTs. The probable reasons are that most of the postgraduate students have intentions to use ATMs and internet banking in paying their fees and other financial matters is due to easy access and reduced processing time. In addition, facilities such as wireless

internet and ATMs' kiosk across the state campuses and Shah Alam also contributed to students' intention to use SSTs. The result is consistent with the study done by Anandarajan, Simmers and Igbaria (2000) that age does not have any significant associations with the internet usage among postgraduate students at the university in the North-Eastern United States.

Table 6
ANOVA

	Sum of Squares	*df*	Mean square	*F*	*P*
Between groups	20.363	3	6.788	1.184	.316
Within groups	1691.069	295	5.732		
Total	1711.431	298			

As shown in Table 7, perceived usefulness, perceived ease of use, perceived enjoyment, and security and privacy are significant due to *p*-values smaller than 0.05 and become the factors that affecting students' intention to use the SSTs. One plausible reason is that most postgraduate students tend to use ATMs and internet banking if these SSTs enhance their job performance, are user-friendly, are less effort to use, and they feel joy and pleasure while using it. Also, there is minimal risk of third parties gaining access to their personal data without their permission. This is aligned with other previous studies (Wang et al., 2003; Pikkarainen et al., 2004; Curran & Meuter, 2005; Eriksson et al., 2005; Guriting & Ndubisi, 2006; Rigopolous, 2007; Amin, 2007) and contradicts the study by Ndubisi and Jantan (2003) that revealed the perceived ease of use did not have any significance in internet banking. In contrast, need for interaction is not significant as evidenced by the *p*-value equal to .994 ($p > .05$). The probable explanation is that the need for interaction with bank employees at the BIMB's counter service is unimportant and it is considered as conducting cash payment method and involves a lot of time. This finding is consistent with the result of Curran and Meuter (2005), where they found that need for interaction has no significant effect on ATMs and online banking.

Table 7
Coefficients

Variables	Standard Coefficients	*t*	*p*
	Beta		
Perceived usefulness	.322	6.241	.000
Perceived ease of use	.117	2.180	.030
Perceived enjoyment	.283	5.167	.000
Need for interaction	.000	-.008	.994
Security and privacy	.195	4.265	.000

A stepwise multiple regression analysis was conducted in order to achieve the third research objective. Under this regression, only the significant results are shown, while insignificant variables are excluded. As shown in Table 8, four independent variables: perceived enjoyment, perceived usefulness, security and privacy, and perceived ease of use are the predictors that significantly predict the students' intentions toward the use of SSTs, $F_{(4,289)} = 71.752$, $p = .000$.

Table 8
Summary of Regression Analysis for Independent Variables

	Sum of Squares	*df*	Mean Squares	*F*	*p*
Regression	842.940	4	210.735	71.752	.000
Residual	848.792	289	2.937		
Total	1691.731	293			

Predictors: Perceived enjoyment, perceived usefulness, security and privacy, perceived ease of use

Dependent variable: Behavioral intention to use SSTs.

Meanwhile, in determining the best variable to predict students' intentions to use SSTs, the columns of R square change and significant F change in Table 9 are noted. From the column of R square change, the highest percentage is considered as the best predictor. In addition, the column Sig. F change determines whether the variables are significant ($p < 0.05$).The results disclose that the behavioral intention to use SSTs is supported by perceived enjoyment at 34.5%, followed by perceived usefulness at 10.9%, security and privacy at 3.6% and perceived ease of use that less than 1%. Thus, it indicates that the perceived enjoyment is the best predictor to predict students' intentions toward the use of SSTs. This might be due to the majority of the postgraduate students being in the age range between 20 and 39 years old. As the younger users, they are more exposed and enjoy using computer and internet. Thus, it can be easier for them to create a positive attitude on the system usage and eventually encourage them to adopt SSTs. The result is in line with the study of Heijden (2004) and Zhang (2004) that perceived enjoyment as a stronger predictor of behavioral intention than perceived usefulness.

Table 9
Variation Explained by Independent Variables

Step	*R*	*R* Square	Adjusted *R* Square	*R* square Change	Sig. *F* Change
1	.587[a]	.345	.343	.345	.000
2	.674[b]	.454	.450	.109	.000
3	.700[c]	.490	.485	.036	.000
4	.706[d]	.498	.492	.008	.029

a. Predictors: (Constant), Perceived enjoyment
Predictors: (Constant), Perceived enjoyment, Perceived usefulness

b. Predictors: (Constant), Perceived enjoyment, Perceived usefulness, Security and Privacy

c. Predictors: (Constant), Perceived enjoyment, Perceived usefulness, Security and Privacy, Perceived ease of use

Conclusion

Overall, it can be concluded that postgraduate students are at the moderate level of intention in using SSTs. Most of postgraduate students are willing to use SSTs particularly ATMs and online banking because these technologies facilitate them in settling tuition fees and other financial matters. Perceived usefulness, perceived ease of use and perceived enjoyment become the factors to predict students' intention in using SSTs and perceived enjoyment or the feel of pleasure and joy emerged from using ATMs and internet banking becomes the best predictor to predict students' intention in using SSTs. From this result, we can see that the Bursary has to play an important role in encouraging students to use ATMs and internet banking in order to increase the highest level of students' intention to use SSTs. One of the best solutions is by upgrading the e-debit system to become more user-friendly. This will encourage the non-adopters to use ATMs and internet banking rather than cash payment method, which need a lot of time queuing in bank. Additionally, campaigns on the advantages of using ATMs and internet banking should be carried out more frequently from one faculty to faculty or through the UiTM's web site. Furthermore, during orientation week, a session on e-debit system can be organized to provide an overview about this system and its advantages. Most importantly, the clarification on the usage of ATMs and internet banking as an effective and convenient channel for settling fees and any financial matters should be taken as a priority. It hoped that with this extensive efforts and campaigns, students would prefer to use ATMs and online banking. Due to several advantages embedded in these technologies such as convenience, speed its transaction process and easy to use, students would not have to spend hours in the Bank and Bursary's counter. Consequently, the Bursary's aims to lessen human interaction will be achieved.

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Editor's Note: Many universities require public service as one of the criteria for retention, promotion, and tenure. (Other criteria are based on teaching and research). It is not surprising, therefore, that students are also encouraged to participate service programs. One way to increase awareness with first-hand information is through guest speakers. Where face-to-face meeting is not possible, web technologies can be substituted with success as described in this paper.

Promoting Student Service Learning through Web Guest Speakers in Distance Education

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Keywords: virtual guest speaker, web guest speaker, service learning, distance education, online education, teaching technology

Introduction

Both service learning and guest speakers are important techniques that increase student engagement and learning. Many professors and colleges are attempting to use service learning and web guest speakers as effective learning tools for their students. How to effectively integrate such learning into distance learning presents unique challenges. This paper addresses the benefits and challenges of using student service learning and web guest speakers in distance education. A case example is presented to illustrate the application of these two techniques as they are combined to produce an effective online course that greatly improved students' engagement in both learning and service.

Background

The number of online students in the United States continued to expand at a rate far in excess of the growth of overall higher education enrollments. For example, Fall 2008 showed an increase of 17 percent over Fall 2007 to a total of 4.6 million online students (Allen and Seaman, 2009). But the rapid growth of online education raised several critical issues about the quality of student learning and student course engagement. In particular, there is concern that distance students usually have little or no face-to-face contact with their classmates and instructors. Such contact is important because studies have shown that student engagement for retention and success in distance learning settings is dependent on such contact.

Incorporating student service learning and bringing in guest speakers have been found to increase student engagement in traditional classrooms. However, distance learning settings present unique challenges when incorporating either student learning or bringing in web guest speakers. The geographical dispersion and time constrains of distance students require instructors to be creative in designing appropriate service learning projects. Bringing in web guest speakers not only relies on the willingness of potential guest speakers but on to the available technology knowledge and support on both ends.

Service learning is also an important way to improve student engagement whether students are in a face-to-face situation, or on-line. Service learning is "a process of integrating volunteer community service combined with active guided reflection into the curriculum to enhance and enrich student learning of course material" (Johnson, 1995. p. 1). Appropriate student service learning exercises typically assist the students in making the transition from theoretical understanding to practical application of course concepts. Service learning presents students the opportunity to first learn by doing, and then develop a critical understanding of course content through classroom discussions.

A well-designed service learning component of a course can benefit the students, and participating agencies (Jackowski & Gullion, 1998). Students benefit through the opportunity to practice newly learned knowledge and skills in a real world environment (Johnson, 1995). Through service learning, students could also improve social interaction skills, enhance critical thinking and problem-solving skills, increase awareness of career choices, enhance awareness of the real world, and are exposed to opportunities for growth through interaction with people from diverse cultures (Johnson, 1995; Mattson & Shea, 1997; Sutton, 1989). Designing student learning projects for an online education setting requires thoughtful and careful preparation and planning by the course instructor. Instructors need to take into consideration the geographical dispersion of the students as well as time constrains of most online students due to work and family obligations. However, it is possible to come up with creative student learning projects that could greatly enhance students' participation and learning experiences.

Bringing in guest speakers is another effective tool to improve student engagement and learning in distance education. Guest speakers can add interest, bring in new perspectives, experiences and communication styles, and provide expertise in specific content areas. Studies have found that student involvement and critical thinking skills in the classroom can be greatly enhanced by bringing in guest speakers (Rowe, 2004; Kumari, 2001). In a study by Kumari (2001), student participation peaked during the guest speakers visits. The virtual guests' presence and presentations encouraged a wide range of critical thinking responses from the students, as well as extensive communication among the students. However, guest speakers could be hard to arrange due to the restraint of either budget and/or distance. Nowadays, the use of the right technology in the classroom could enable us to go beyond the boundary of time and space to bring in guest speakers from anywhere in the world at very little cost. Virtual guest speakers can be as effective as traditional face-to-face classroom speakers with the use of the right technology and supporting activities.

Case Example

In spring 2009, I taught two sessions of Sociology 354 Interethnic Contacts which include 24 on-campus students and 48 online students in California State University, Chico. Lectures were delivered to the two sessions of students simultaneously. The class used Vista black board and a web-casting software called Wimba. All lectures were broadcast live through Wimba. Distance students attended either the live lectures or watched the archived lectures within 24 hours. I successfully used two web guest lecturers to spark students' interest and enthusiasm before assigning a service learning project.

One of the learning objectives of the course was to illustrate the theoretical understanding of race, ethnicity, and nationalism with examples from around the world. Students learned about basic theories at the beginning of the semester and then moved on to read three memoirs as supplemental readings. One of the memoirs is N*ot My Turn to Die: Memoirs of a Broken Childhood in Bosnia* by Savo Heleta. *Not My Turn to Die* is a very powerful memoir about the experience of the Heleta family during the Yugoslavia war in the 1990s. In the memoir the author articulately shares his family's traumatic experiences and their subsequent struggle to forgive those who hurt them. Savo Helata, the author, is today a 29-year-old studying towards his Ph.D degree in Conflict Transformation and Management at the Nelson Mandela Metropolitan University in Port Elizabeth, South Africa. Students strongly relate to the book and the author. After my students finished reading the memoir, I invited two guest speakers to the talk to the class about the war in Yugoslavia

The first guest speaker was Dr. Kate Transchel who is a professor of History Department at Chico State who has published about the former Yugoslavia. Although Dr. Transchel is local, there was a time conflict because she taught the same time as I did. To solve this problem we used web-

casting technology, so that Dr. Transchel's could simultaneously speak to both classes. Dr. Transchel's students were able to ask questions and interact with students in my class through a web camera and a microphone. Dr. Transchel told my class to put the responsibility for change on themselves because they are some of the most blessed people in the world, as well as educated and with so many resources at their disposal. Students' response to Dr. Transchel's lecture was overwhelming. Although I had 72 students, there were close to 200 spontaneous discussion messages on the class discussion board following the event. My students were deeply inspired by Dr. Transchel. Many students indicated that they watched the archived lecture more than once. Many of them were motivated to become involved in Dr. Transchel's "STOP" student organization to help stop human trafficking and to make a difference to the world.

More complicated was participation of the second speaker, the author of *Not My Turn to Die,* Savo Heleta. Mr. Heleta was living in Saint Elizabeth, South Africa at that time. On a sunny morning in March 2009, Mr. Heleta appeared to my class through Wimba classroom from a different continent where it was already late at night. During the one hour and fifteen minute talk, both my on-campus students and distance students saw, talked, and interacted with Mr. Heleta just like in a normal classroom. Students asked questions about his book and his life. The students also suggested that the author have his book turned into a movie! Without the technology, it would have been impossible to have the book author talk to the students and answer their questions directly without a big budget for airplane fares and hotels. It was truly an amazing experience for everyone who took part through the wonder of technology that day.

The talk by the textbook author, Mr. Savo Heleta, has brought the story in the book and the conflicts in Yugoslavia much closer and made them all alive for the class. In fact, many of the students told me that Mr. Heleta's talk through Wimba was one of the most unforgettable moments of their whole college education. As one of the students said in her email, "this gave me a great respect for Savo Heleta. He literally gave us an experience that most will never forget. And he did it out of the goodness of his heart, charging us nothing to give us perspective on what a firsthand account of genocide was like. After the author's web appearance, my students were greatly touched and inspired by the author's personal transformation and devotion to world peace. Many of them went on to read all the other articles by the author on his website. Many cited the author's articles and talk in their final papers. The book and the author's amazing transformation invoked students to consider what the United States could do to help resolve ethnic conflicts around the world and, more importantly, what the students can do as individuals to help to make a difference.

Following the two guest lectures, I assigned students to write a short taking-action proposal on the Blackboard discussion board to address the ethnic struggles we learned about in class and propose something they can do to help solve the problem. In the assignment, I asked the students to take their teachings with them and be the change they wanted to see in the world. I did not require students carry out what they proposed because most students in the class were distance students who worked full time or had young children at home. To my great surprise and delight, most students in the class not only wrote heartwarming taking action proposals but also choose to take actions on their own.

At the beginning, several of them updated their actions on the discussion board with the rest of the class. It started a snow ball effect. One distance student wanted to donate a tent to Tents of Hope for refugees in Sudan. She was going to purchase a tent for $500 at a military supply store. After the owner learned about the purpose of the tent, he gave her three for free. She asked students at her children's school to decorate the tents. Administrators and teachers not only said "yes" but also agreed to pay the shipping fees. Another student organized a campaign in her church to donate children's clothes. She gathered 100 pounds of clothes and the following week connected with a man who was leaving for Africa and an orphanage his mother runs. The man

purchased children's books and paid to have them shipped. The results motivated her church peers to send clothing throughout the coming year (Figure 1).

Figure 1. Clothes and books for an orphanage in Africa.

Another student, who is a mother of three teens and works as a trauma nurse in Sacramento, chose to build a presentation board for her workplace. She wanted to involve her children and other nurses in sharing information that she was learning in class. The presentation board was to promote social tolerance with the theme "Acceptance and Respect for All." A fourth student started "Changing the World" blog: http://stoplooklistenlearn.blogspot.com/2009_03_01_archive.html.
In her blog, she stated, "I found it to be a very complex assignment in that it would be a very easy thing to simply write a check for a charity and call it a day. The author does not in any way see that as a bad option, for some that is all they can do and it is better than not doing anything at all. For me it didn't feel like enough. So my goal is to call myself to action every month. I have three children and I really want to set a good example for them as citizens of the world. So we as a family every month are going to make a donation to a charity."

There are many other heartwarming taking action proposals from the students. The class of 72 students posted all total 440 discussion messages on the class discussion board in response to the taking action proposal, which far exceeded the required three messages per student for this assignment. Besides the individual taking action service learning project, the class also voluntarily did one joint project together. After students learned that the author had to borrow a laptop for our class appearance, they decided to gather donations among themselves for a laptop with a built-in Web camera. Before the end of the semester, students wired the donations to South Africa so that the author could buy a laptop that was compatible with the voltage and other local standards.

In spring 2010, Mr. Savo Heleta did another guest lecture to my class. Once again, students were greatly touched and motivated after talking to the author through the web. One student responded to the author's request to collect books towards the first public library in Southern Sudan. She did the research and immediately started an internship with the Sudan-American Foundation for Education, Inc, (SAFE) to help collect donated books. Another student who is an artist decided to auction off a painting for a different cause once a season. In his proposal, he wrote, "My hope is

that when people own a piece of art it will resonate as a conversation piece to talk about why they donated money in the first place. I hope that people who want the painting will also feel a responsibility to be informed about who and what their money is doing. I will supplement this by mailing something with my artwork that informs them of whom they supported with their money and how it has helped." Within a week, the same student updated the class with his first auction which generated $160 for Haiti earthquake relief efforts. These are just a few of the actions taken by my students that not only inspired me, but each other and their families and communities as well.

Discussion

The two web guest speakers have greatly enhanced student engagement and students' enthusiasm in service learning. Many students told me that taking this course has been a life changing experience because it expanded their world view. As one student put on the class discussion board, "The world in my eyes has grown in dimension more in this semester than it has in my whole life. I want to learn more, see more and do more…" I still receive emails from students in that course giving me update on their taking action proposal.

To summarize, successful incorporation of student service learning projects into online teaching requires designing appropriate service learning projects that take into account students' intellectual readiness, willingness, and time constraints. To prepare students for the upcoming taking action service learning project, I used two guest speakers through the web to engage and inspire students to a new level. The success of the taking action service learning project would not have been possible without the two web guest lectures. Finally, bringing guest speakers through the web requires abundant technology preparation and assistance. Sometimes a plan B is essential to prepare for technology failure. The success of bringing in the two guest lecturers would not have been made possible without the assistance from the technology support staff members here at Chico State. And most importantly it would not have been possible without the willingness of the two guest lecturers to share their expertise and experiences with the students. Before Mr. Heleta's web appearance in spring 2009, our technology support staff and I tested the computer system with Mr. Heleta three times to make sure everything ran smoothly. In spring 2010, we tested the system again before the talk. However, nothing prepared us for the severe storm that hit Port Elizabeth, South Africa as soon as the talk started. The internet connection became so bad that we had to postpone the date.

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Editor's Note: ***The Faculty*** is not a homogenous group of scholars, pedagogs, or educators. It is composed of individuals in many disciplines with unique experience and personalities, and with contrasting goals and philosophical positions. Departmentalization is an attempt to organize faculty who share common needs and interests by virtue of their discipline. Technology and distance learning do not necessarily focus common needs or close collaboration. This study looked at peer support and shared resources for online instruction.

Faculty Mentoring and Support Among Online Instructors

Lydia Kyei-Blankson
USA

Abstract

Past research has shown that peer support helps improve several areas of faculty activities such as research, teaching, and technology competencies. Using a mixed method design, this research study investigated resources available to faculty as they teach or prepare to teach online at a large midwestern university. In addition, the study explored the nature of peer interactions that exists between faculty who taught or planned to teach online. The determinants of such interactions as well as the benefits and challenges involved in initiating and maintaining the interactions were examined. Findings from this study have implications for the development and implementation of training and support programs intended for faculty as they learn to teach online.

Background to the Study

Efforts to meet the demands of the 21st century learner have resulted in dramatic increases in the number of online courses offered by institutions of higher learning today. A large number of colleges and universities across the United States are now transitioning traditional face-to-face classes into fully online, blended, or web-facilitated courses in order to maintain a competitive edge and make classes accessible to a growing student population. The most current statistics suggest that almost 64 percent of all institutions offer at least one online course and 5 percent of all institutions offer at least one blended course (Allen, Seaman, & Garret, 2007). As a result, at some point in their teaching career, university instructors are asked to consider teaching their classes either partially or fully online (Clark-Ibanez & Scott, 2008).

The pathway of course migration to online environments often begins with the assumption that instructional designs, grading procedures, and other methods that typically work in the traditional classroom would remain the same in online settings. When faculty come to terms with the reality that these two environments are entirely different, they suddenly become frustrated (Franklin & Blankson, 2001) and realize the need for professional development activities and support programs that will help them teach successfully online.

Although these training programs have been useful, most of them have been offered in a similar manner with faculty attending one-time expert-led workshops which hardly include any follow-up activities (Crawford, 2003; Thompson, 2006). In addition, faculty participation in these one-time "one-size-fits-all" workshops does not necessarily ensure mastery of the desired skills required for effective online teaching (Bentley & Mumma, 1999).

In order to make courses 'work' online and to fully realize the promise of online teaching, Lan, Sheridan, Nelson, and Christensen (2002) suggest the need to encourage and cultivate interactions among groups of dedicated educators who are not only instructional leaders in their respective disciplines, but are also confident and self-sustaining technology users. Sorcinelli and Yun (2007) also encourage the building of networks of "multiple partners in nonhierarchical, collaborative, cross-cultural partnerships" (p. 58). Past research has shown that these interactions or support

systems provide faculty with opportunities to draw on each others' experiences and strategies which help improve several areas of faculty activities such as research, teaching, and technology competencies.

Statement of Need

With increases in the number of students enrolled in distance education courses, many instructors in U.S. institutions of higher education are being encouraged to teach online. In an effort to support faculty as they learn to teach online, college and universities are providing faculty with a variety of resources in the form of software and hardware, and training programs and activities. Another important resource for faculty is faculty-faculty interactions or support.

In general, considerable attention has been focused on studying the benefits and challenges of teaching online. Very few studies exist that have attempted to examine the extent to which resources are made available to faculty and the impact that these resources have had on online teaching. Hewett and Powers (2007) argue for the need to focus attention on the issue of training programs and activities that support faculty as they learn to teach online. Specifically, not much has been written on faculty-faculty interactions or support. Hewett and Powers suggest the need to gain an understanding of the interactions that occur among faculty who teach or intend to teach in online environments. The questions of interest here are to what extent do faculty who teach or prepare to teach online interact with each other and what is the effect of such interactions? The findings gathered from such a study will provide valuable information on how to structure professional development programs and support activities that ensure success as faculty teach and learn how to teach online.

Research Purpose and Questions

The purpose of this study was to examine the resources available to faculty who teach or plan to teach in online environments at a large Midwestern university and to explore the nature of faculty-faculty interactions that occur among instructors. The study also examined the determinants of faculty-faculty interactions and describes how these interactions are initiated and maintained.

The specific research questions this study seeks to address include the following:

1. What resources are available and considered useful to faculty as they prepare to teach or teach online at the Midwestern university?
2. To what extent do faculty-faculty interactions exist among instructors who teach or prepare to teach online and what is the nature of such interactions?
3. How are such faculty-faculty interactions initiated and maintained among instructors who teach or prepare to teach online?
4. What are faculty perceptions towards the impact of the faculty-faculty interactions on online teaching and what are the perceived benefits and challenges of such interactions?

What does it mean to teach Online?

Over the last couple of years the number of students enrolled in online courses has exploded. According to Allen & Seaman (2006), about one million more students were enrolled in at least one fully online course between 2005 and 2006. The benefits cited for online learning include increased opportunities for and access to learning, flexibility of scheduling for instructors and students, improved faculty-student interaction, and intense student participation (Clark-Ibanez, 2008).

Hewett and Powers (2004) conceptualize online teaching as the formal and informal delivery of pedagogic content via electronic formats such as the Internet, CD-ROM, videotape, and DVD. Kearsley (2000) also describes online teaching as any form of teaching that takes place via a computer network such as a local bulletin board system, the global internet, World Wide Web, local area network, or an intranet within a particular organization.

With online teaching gradually becoming commonplace in education, most institutions are investing in orientation and training to ensure faculty preparation to teach in this environment (Hewett & Powers, 2007). This is important even for courses that are offered partly online. According to Barker (2003), developing faculty to teach online is a complex challenge. Challenges identified include time spent learning to use new technologies, frustration with the malfunctioning of technology (Smith, 2001) and lack of institutional and peer support (Perreault, Waldman, Alexander, and Zhao, 2002). Other challenges include an underestimation of the time it takes to teach online and an overestimation of students' technological skills and readiness for online courses.

What do instructors need to successfully teach in online environments?

Hewett and Powers (2007) argue for an increase in the assessment of what works in various online settings via theoretical and empirical research. Training faculty to teach in online environments necessitates investigation and reflection into the online training processes and experiences. Few discussions have been directed at the issues of preparing educators for online instruction directly.

In order for instructors to successfully teach in the online paradigm, a variety of support is required. Covington, Petherbridge, and Warren (2005) suggest the need for a triangulated approach which involves professional development opportunities, administrative support, and peer reassurance. Faculty motivation and commitment to teaching online were found to be higher in institutions where these support systems were well-provided (Kratz, 2003, Lee, 2001). Often instructional support is provided in the form of training in the use and application of distance education technologies, training in teaching methods, and media and technical support and course design support offered by instructional designers, editors, technicians, graphic designers, radio and/or television producers, teaching assistants, and librarians.

Method

A total of 117 faculty members (71% tenured and tenure-track, 21% non-tenure track, and 8% faculty) participated in the study. Faculty who teach fully or partly online or who are in the process of adopting online courses were contacted using recruitment letters which were distributed by way of campus email. Included in the email was a link to an online survey designed for the study. The survey consisted of both closed and open-ended items. Data collected by way of the closed-ended items were analyzed using descriptive statistics. The qualitative data collected were analyzed for themes, insights, commonalities, and differences (Patton, 2002).

Result and Discussions

The majority of the participants (76%) indicated that their commitment to teaching online was moderate to very strong (See figure 1). Some of the factors that influenced faculty's decision to teach in an online environment included the following:

- Convenience - faculty can teach and students can take classes from any location
- Financial incentives
- Time- and cost-efficiency - Limited travel time involved for students and faculty.

- Opportunity for expanding in-class learning - Materials not covered during face-to-face class session can be delivered online
- Satisfaction of professional requirements for students
- Ease of course delivery - Subject being taught naturally lends itself and is more appropriate for online teaching
- Increased student interest in and demand for online learning- Students easily adapt to the Online system
- Encouragement from Campus Workshops and College Initiatives
- Positive learning experience for students - promotes collaboration among students, ensures more openness and honesty, and provides time for student reflection.
- Positive teaching experience- Instructors enjoy autonomy

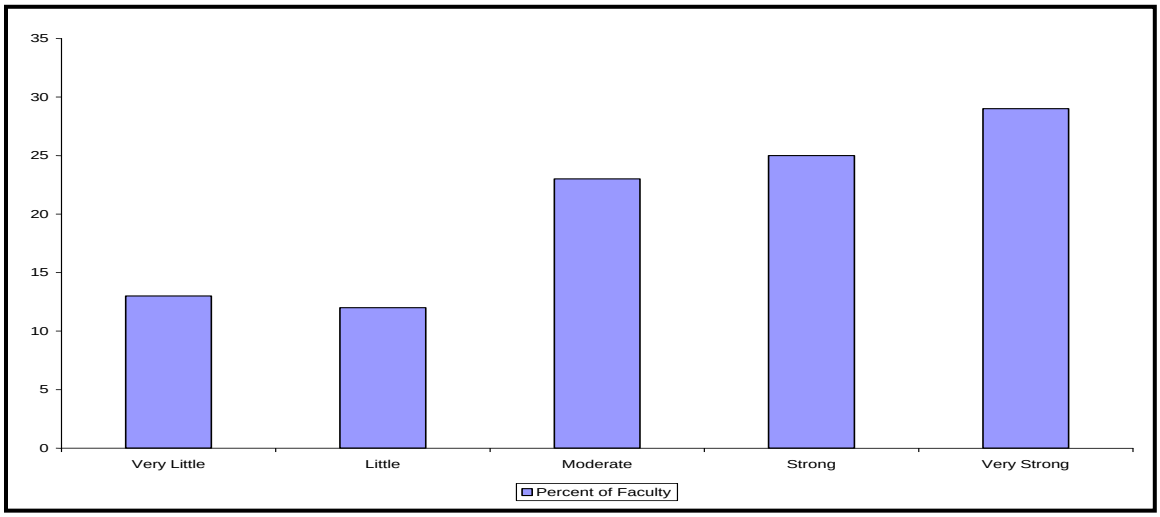

Figure 1: Faculty commitment to teach in an online environment

Regarding the issue of availability of faculty resources, the majority of the faculty members (80%) stated that they were likely/very likely to seek assistance from their peers, colleagues, or other faculty when they taught or prepared to teach in online environments (see figure 2). In addition, 74% of instructors said they were likely/very likely to use the on-campus Center for Teaching, Learning, and Technology as a resource. On the other hand, only 35% and 39% indicated that they were likely/more likely to enroll in face-to-face professional development courses offered off-campus and in professional development courses offered online, respectively.

When asked about the usefulness of the resources available to them, 68% thought peers and other colleagues were useful/very useful resources while 72% thought the departmental instructional technology consultants were useful/very useful. On the other hand, only 33.3% thought that courses offered online were useful/very useful (see figure 3).

Focusing on the subject of interaction among faculty who taught or prepared to teach in online environments, most of the interactions were informal in nature; that is, they took place spontaneously in departmental hallways, during friendly office visits, by email correspondence, and by phone. On the other hand, some were formally initiated mostly during on-campus technology workshops and during departmental meetings arranged by the chair of the department. Faculty members who needed assistance were often the ones who sought out such interactions;

yet surprisingly, at times, instructors who considered themselves experts in online environments initiated the contact and willingly offered to help. On other occasions, the head of department approached more experienced faculty and asked them to act as mentors to a "newer" faculty member. In some departments, the heads acted as tutors or consultants themselves.

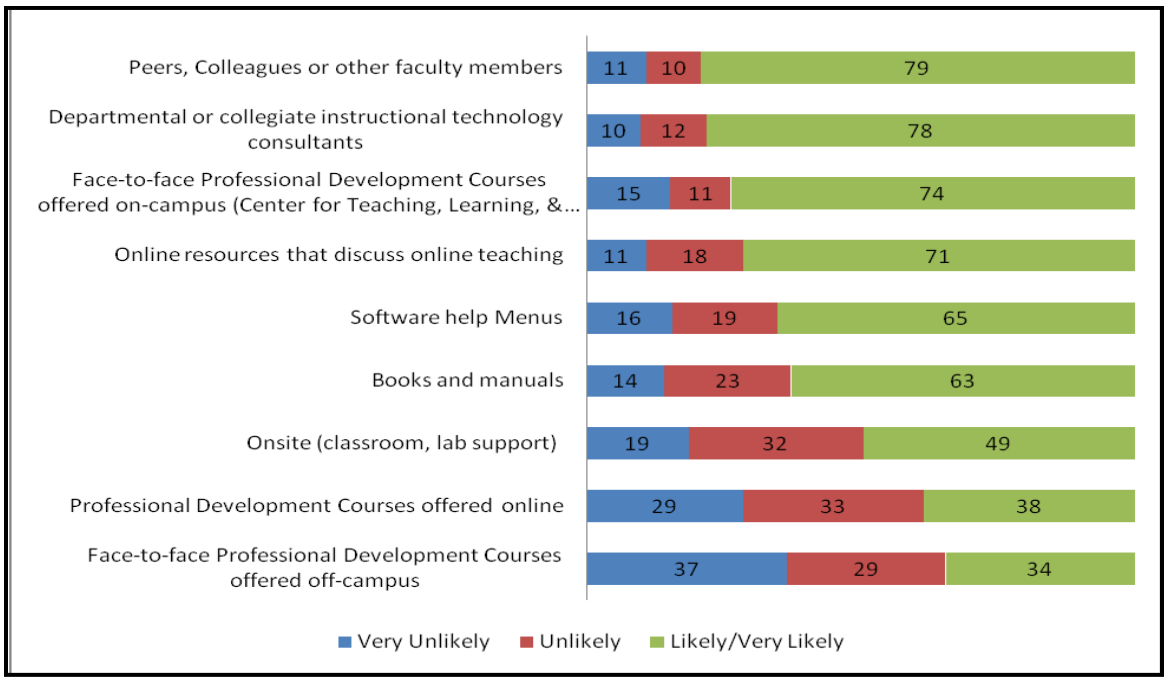

Figure 2: Perceived likelihood of seeking assistance from this resource

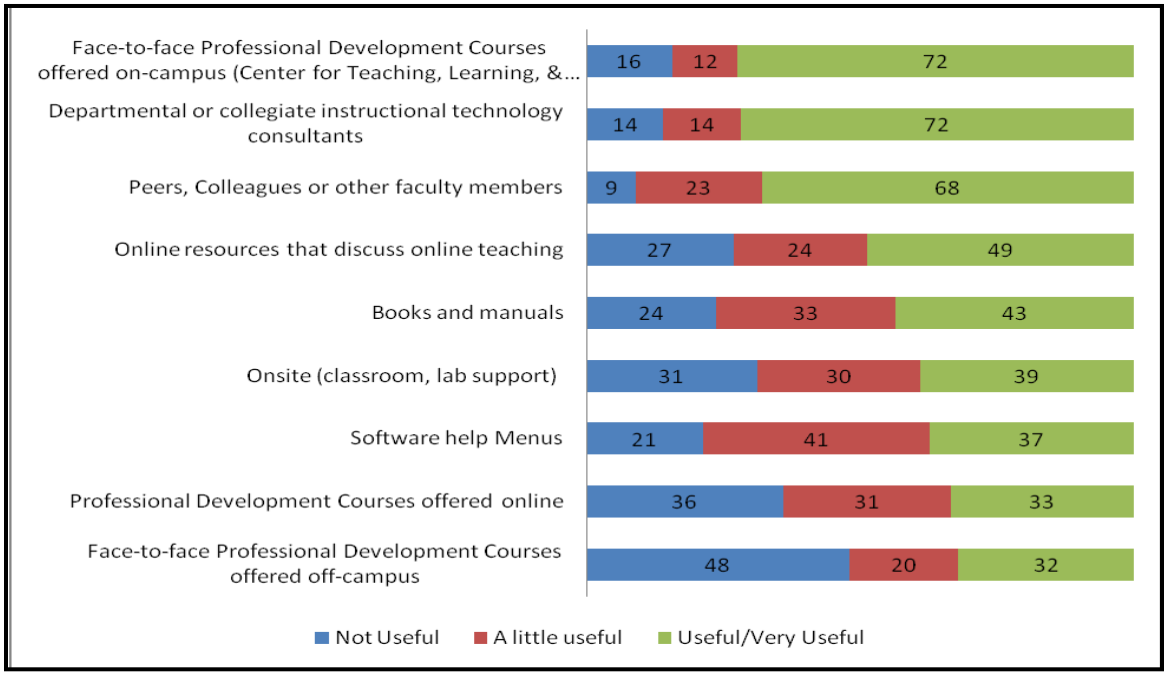

Figure 3: Perceived faculty usefulness of resources

Faculty members considered peer interactions beneficial because they helped "build consistency within course offerings and coordination across the curriculum". The interactions also ensured an easier and smoother transition of face-to-face classes online. Faculty learned new ideas during such dealings. Other faculty asserted that the interactions helped confirm things they were doing correctly in their courses and the meetings provided a space for airing their frustration and seeking moral support from others who were facing similar problems or issues. One faculty member summed it all up by saying:

> "*I think it helps build a community of learners (professional learning community). If we can't learn from one another, who can we learn from? I think the benefits of tying social interactions, fun, and learning together are wonderful. I get so emotionally and intellectually reinvigorated."*

Faculty stated, though, that peer interactions often times came with various challenges. These included the fact that faculty were always so busy it became so difficult to schedule time to meet regularly either formally or informally to discuss their needs. Also, at times some faculty found it difficult to relate to their peers because of the differences in teaching styles and levels (undergraduate to graduate). In addition, *"some faculty like to work alone and are very defensive and exhibit proprietary behaviors when it comes to their work"* making it difficult to learn from them. One instructor described her experience as follows: *"I had a faculty member say to me in an open meeting that she wasn't about to give me access to her course that she had worked so hard on so I could "steal" her work".*

The need for faculty support to create a successful teaching experience in online environments is clearly evident. Irrespective of these challenges, the data collected suggest that faculty perceive peer support, collaboration, and interactions to be very essential; so essential that as one faculty put it: *"I would have liked the school to more actively arrange for the various online instructors to meet."*

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