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Non-Technology Issues: The Human-Side Factors in Online Education

Abstract

As much as the explosive growth of electronic communication, things have changed in business, education and our society. Many professionals are thinking about the training and skill base in the area of technologies. How can instructors translate their teaching skills in a successful teaching online (Addesso, 2000). Coldeway (1988) acknowledges that the focus of most distance education institutions is on the technology but suggests that the research is shifting to the more human side of distance learning as the programs age. Using the current research on the problems addressed, as well as philosophies and theories implemented in online environments, this paper is intended to present information related to a more human side of online education. While much of the research done to date has centered around the use of new technologies for teaching and distance education's effectiveness as a teaching medium, this paper will discuss the non-technology, more human side, issues in online education. The purpose of this paper is focus on three aspects: 1. How should teachers prepare themselves to adjust the online environment in terms of teachers' attitude, knowledge, role, skills needed? 2. How can learners be successful in online learning? The factors that need to be considered include the special needs of distance learners, and the issues of characteristics of distance learners, learning style and motivation. 3. How to design meaningful interaction in online learning environment? Though this paper might only scratch the surface of those related issues, it concludes that the non-technology factors can not be overlooked and are equally important for an effective online education. Hopefully, further research will be done by educators and researchers in the area of distance education.

Non-Technology Issues:
The Human-Side Factors in Online Education

A Graduate Research Review
Submitted to the
Division of Educational Technology
Department of Curriculum and Instruction
In Partial Fulfillment
Of the Requirements for the Degree
Master of Arts
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By
QingHua Yu
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Has been approved as meeting the research requirement for the
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June 21, 2002

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As much as the explosive growth of electronic communication, things have changed in business, education and our society. Many professionals are thinking about the training and skill base in the area of technologies. How can instructors translate their teaching skills in a successful teaching online (Addesso, 2000).

Coldeway (1988) acknowledges that the focus of most distance education institutions is on the technology but suggests that the research is shifting to the more human side of distance learning as the programs age. Using the current research on the problems addressed, as well as philosophies and theories implemented in online environments, this paper is intended to present information related to a more human side of online education. While much of the research done to date has centered around the use of new technologies for teaching and distance education's effectiveness as a teaching medium, this paper will discuss the non-technology, more human side, issues in online education.

The purpose of this paper is focus on three aspects:

1. How should teachers prepare themselves to adjust the online environment in terms of teachers' attitude, knowledge, role, skills needed?

2. How can learners be successful in online learning? The factors that need to be considered include the special needs of distance learners, and the issues of characteristics of distance learners, learning style and motivation.

3. How to design meaningful interaction in online learning environment?

Though this paper might only scratch the surface of those related issues, it concludes that the non-technology factors can not be overlooked and are equally important for an effective online education. Hopefully, further research will be done by educators and researchers in the area of distance education.

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Abstract

Chapter One

Introduction

Recent technological advances have changed teaching methodology and the pursuit of educational opportunities. With the advancements in telecommunications technologies, distance learning programs rapidly expanded so distance education is now defined as the technology used to mediate information and instruction for the learning of knowledge and skills at a distance (United States Distance Learning Association [USDLA], 1998). The use of computer-mediated communication in distance learning has become a popular means of distance learning. The shift from traditional classes to online learning throughout society has caused students to be more demanding and more knowledgeable about alternatives for their education (USDLA).

Statement of the Problem. According to the report from US National Center for Educational Statistics (2000), 91 percent of public two- and four-year institutions offered or planned to offer distance education courses by the year 2000-2001. The technologically enhanced learning environment has many different factors which can increase the pedagogical effectiveness of course content at a distance (Sherry, 1996). Today, online is part of a new educational culture with its own distinct characteristics. Online education offers an important alternative and many traditional educators are making the transition to the online medium. Unfortunately, these educators do not always have the necessary skills to perform online teaching responsibilities effectively (White & Weight, 2000). Many publications have reported a lot of examples about feelings of frustration and failure from both distance teachers and students (Sherry, 1996). These

feelings could be the result of overlooking some factors when educators moved from a traditional learning environment to one online. One can not simply try to apply the traditional pedagogical tools to technologically enhanced web environments in the design of online distance education.

Distance education technologies are expanding at an extremely rapid rate. Too often, distance educators and curriculum developers have become enthusiastic about the latest technologies without dealing with the important issues of leaner characteristics and their needs (Sherry). The teachers should consider how they prepare for teaching and the interactions between and among students in the distance learning process.

Significance of the Review. This paper is intended as a general review of the literature to explore those factors beyond technology that will influence the effectiveness of online education. These factors are the more human side and critical elements in online teaching and learning. This paper consists of four parts. The first part is the introduction, providing a limited background of information and related issues. The second part is the methodology, describing the method adopted for locating and identifying sources. The third part is the analysis and discussion, reviewing the pertinent literature. The ideas and evidence from the sources are presented to demonstrate those non-technology factors which are critical for shifting successfully from traditional classroom to online environments. The fourth part is the conclusions and recommendations revealed in the review of the literature.

Chapter Two

Methodology

To study the non-technology issues in online education, the search for literature focused on teacher preparation, designing effective educational experiences for distance learners, and how to structure effective interactions for teaching and learning. While the empirical research is useful for studying drop-out rates, learning about student preferences, and attempting to compare the variety of media used for delivery, but Coldeway (1988) has urged that qualitative research methods be used to study distance education as a whole.

This review of literature on non-technology issues focused on two types of reviews categorized by subjective and objective information. The subjective information includes the theoretical knowledge from experts in the area of education, personal opinion, and the narrative comments about the studies and reports. Another aspect is objective information from some of the educational practitioners. Theoretical foundations will be provided as a sound basis for understanding shifts in teaching. The research results demonstrate to us real world needs in the online education. The commonly used instruments in the research reviewed employed survey questionnaires, interviews, observations, and case study, while sometimes combined approaches have been adopted.

The methods adopted for identifying and locating the sources included the books, magazines, journals, and educational databases. Since online education has appeared recently with the development of current technology advancements, the sources located focus on study and research on the current issues. For example, the Journal of American Distance Education turned out to be an important source for information. The information regarding theories was located in other books and journals.

The approaches for locating the information sources were:

1. Find the journals in the area of distance education by name, e.g. <u>The American Journal of Distance Education</u> and <u>The Quarterly Review of Distance Education</u> from current and bound periodicals in the UNI library.

2. Search the books from UniStar by a key word search and locate the books form the stacks in the UNI library.

3. Electronic articles are searched from various websites, like ERIC and Yahoo sites, for information on distance education. Some key words used were "statistics in distance education", " research on distance education", and " issues on online education".

4. The references of some articles are also used to find more related information.

Chapter Three

Analysis and Discussion

This analysis and discussion provides a theoretical foundation and incorporates empirical research to help understand the factors beyond technology, which are critical for online education. In order to illustrate how the instruction and learning can be supported well, factors such as teacher preparation, distance learners' special needs, and the effective interactions designed for online learning are presented.

Teacher preparation. In order to transfer from traditional classroom teaching to online teaching smoothly, teachers need to get training in the knowledge of instructional design, improve their technology competency levels, and realize their new roles in an online environment. They need to learn how to develop the course template to design a more constructive course rather than an instructive one since online learning is a more learner-centered learning environment (Cyrs, 1997).

Moore (1997) indicates that it is impossible for administrators or faculty to believe that because faculty are able to teach their curriculum subject in traditional setting, they can also teach it at a distance. Cyrs (1997) pointed out a myth which is often repeated by poorly informed administrators who indicate that no additional training is necessary to go from a traditional classroom to a distance learning environment. They are often heard to say: just go in there and teach the way you have always taught. There is not any difference between traditional classroom teaching and teaching at distance. Anyone who says that teaching at a distance is the same as traditional teaching is wrong. Instructors need more planning time, more instructional support, and additional training to modify courses for delivery formats in distance learning (Cyrs,).

Teachers' attitudes. A key player in distance education should be the teacher since the use of telecommunications in higher education requires faculty's attitude of acceptance. But "negative faculty attitudes, ranging from apathy to open antagonism, remain a major barrier" to implementation of distance education programs (Brock, 1987, p. 40). Researchers blame faculty attitude on a resistance to required changes in familiar teaching patterns and the faculty having to relinquish a degree of control over the teaching-learning process (Jeffries, 2001).

A study by Clark (1993) attempted to measure faculty attitudes toward distance education and specific media used. Clark has concluded that the university faculty who were slightly positive about the concept of distance education were more negative about their personal use of distance education, while the faculty who were more familiar with distance education were more receptive.

Providing training is very critical in helping faculty to change their attitudes to online teaching, especially in helping the reluctant faculty member. The institution must determine what kind of training the faculty will be provided since the faculty are likely to be more confident and effective if they have the capabilities of using technology and relevant knowledge in distance education (University of Maryland, 1997). It will greatly benefit the teaching and learning process if faculty can effectively take the advantage of the online environment. The emergence of online education creates opportunities for positive education changes. Faculty need to get out in front of the change and play a much greater role rather than reacting to administrative initiatives (Lairson, 1999).

Philosophy. The beliefs of teaching will be shaped according to which philosophy a distance educator subscribes. Educators should be aware of their teaching philosophies

because these philosophies will guide the style of their teaching and evaluation practices (Vrasidas, 2000).

Most traditional teaching and learning approaches are based on the behaviorist and cognitivist theories. These theories share the fundamental philosophies in objectivism. According to Duffy and Jonassen (1991), the major assumption of objectivism is that a real world exists independent of the human mind and it is external to the knower. An educator who is an objectivist believes that there is one true and correct reality which can be known through the method of science.

Several instructional design models that are based on an objectivist paradigm emphasize a sequence of several steps in designing instruction (Dick & Carey, 1996). Before designing instruction, the teacher will identify the topic to be taught. Then prepare some behavioral objectives related to the learning topic. The learners will be evaluated to see how the objectives are met or met to what degree.

Constructivist believes that knowledge does not exist independent of the learner, knowledge is constructed. Constructivists argue that learners construct their knowledge of the world (Boyle, 1997). Vrasidas (2000) believes that objectivist approach is appropriate at times and constructivist approach is more appropriate at other times. It always depends on the learning context, content, and learners. A teacher should situate oneself on the continuum, avoiding the extreme ends. No matter which philosophy is used, teachers will need to consider how to design the learning activities and the assessment in the design of the course.

Skills in Instructional Systematical Design. According Smaldino (2000), instructional design is very critical to distance education. It is very important to consider

the elements of the content, the learner, the strategies for teaching and the ways of how to assess the learning experience. The instructional design process considers all aspects of the learning environment. The well-organized procedure can provide useful guidance to even novice distance instructors.

Moskal, Martin and Foshee (1997) conducted a survey to identify faculty competencies, capabilities, and perceptions about distance education in The Faculty Development Group of the Central Florida Consortium of High Education (CFCHE). Few of the CFCHE faculty members appear to have had formal training in instructional design, but most have practiced aspects of it to prepare their courses. The results indicate that the faculty would benefit from more training in instructional design, especially related to distance education. The number one recommendation for the development of successful distance education programs is that teacher should be given opportunities to learn the Instructional Systems Design process, either through workshops, texts, mentoring or some other arrangement.

Differences of online teaching. Online instruction can offer new challenges and opportunities to both students and instructors. Teaching has had to change to accommodate the shift from the traditional to an online teaching environment. Experiencing a large demand for college courses taught over the web and not falling behind competitors from the commercial sector, universities are usually pushing faculty to teach courses online. Many faculty members have never taught online and therefore do not know what they are getting themselves into it. What are the differences between teaching online and teaching face-to-face (Smith & Caris, 2000)?

Distance learning is not simply an extension of the traditional classroom. In most of the traditional classrooms, the instructor usually delivers all the presentations, displays all the visuals, runs all the equipment, and is basically in charge. Distance learning requires three things not always found in traditional classroom teaching: learner-centered design, learner-centered delivery skills, and direct learner participation (Ostendorf, 1997). According to Peters (1988), in distance education, the change of function is evident in the role of the lecturer.

Teachers' new role / facilitator. In an online course, due to the change in learning environment, the call for the instructor to engage in the role of facilitator is made. As Harasim (1996) argued, online education shifts the focus from knowledge transmission to knowledge building. Using computer networks, the role of the teacher shifts from knowledge transmitter to that of a facilitator who provides many opportunities for interaction and meaning-making to all learners.

The significant increases in distance learning enrollments within the next decade will have a profound impact on faculty members' instructional roles, according to Beaudoin (1990). Beaudoin envisions changes tied to distance education's more learner-centered approach and predicts that teachers who are accustomed to more conventional teaching modes will have to get new skills to meet expanded roles not only to teach distance learners, but also to make instructional resources suitable in content and format for independent study.

The skills needed to guide a student through a successful learning experience are as important for online instruction as they are for face-to face instruction. The successful online teacher will act as a facilitator, monitor, guide, lecturer, consultant, counselor,

moderator and manager. As a facilitator, the instructor will be responsible for creating and organizing the activities and discussions of the course to make sure that all the students are active participants (Schweizer, 1999).

A facilitator is someone who makes learning possible. Facilitating in the classroom refers to a partnership in which the instructor and student join together to meet the learning objectives. There is the common ground between traditional and online facilitation, thus many skills are transferable from traditional classroom to online environment (Addesso, 2000). Rogers (1969) laid out the basic guidelines for facilitation many years ago which provides a common ground to link traditional and online facilitation. The facilitation process is divided in three parts: first, breaking the ice in a positive way. Second, using all of the basic and advanced skills that you have available to you. Third, the knowledge that problems can be handled and solved. When the process is explained in this way, there is not a mystery about effective online facilitation. The main point is that the teacher uses his/her skills so that when asked to facilitate online, current skills can be transferred effectively.

As Addesso (2000) indicates, no one should be allowed to speak louder or take up all the space in an asynchronous online environment. The facilitator has to director the learning to provide more opportunities to concentrate on ideas and knowledge, as well as pay attention to the process.

Schweizer (1999) indicated that to be a facilitator, it is important to be able to communicate clearly, personalize the learning environment, and inspire thoughtful discussions. The written directions and instructions for all aspects of the course are very essential for learners to find out information and need to be easy to follow. For example,

clear outcomes from the instructor for the course become the foundation for providing online students with an explicit directions of what are they expected to do. Unambiguous directions for assignments and well-defined rubrics need to be available to all students either in hard copy or in an easily accessible website.

Management Skills for online courses. Managing an online course so as to maintain cohesiveness but, not over manage so as to impede discovery learning, presents challenges to online instructors. According to Schweizer (1999), the key components of a well-managed course are: (a) establish a record keeping system, (b) set and maintain timelines, and (c) enforce rules and guidelines. How to manage the large amounts of data depends on the number of students. Records can give the instructor a summary of how frequently students are participating and at what level. This can be used as a reference for grading at the end of the course.

Online learning is an independent, student-directed learning experience and when taken seriously, online learners extend their learning far beyond that found in the traditional classroom (Schweizer, 1999). Unfortunately, not everyone can take charge of one's own learning successfully. One of the obstacles for students is the temptation to postpone the assignment. It is important for the instructor to design an environment that is structured with a timeline, deadlines, and logical consequences if expectations are not met. Providing structure in a course will help reduce problems such as students who have not yet mastered the skill of self-descipline. There are various ways to structure a course, including providing students with deadlines for a project, discussion and assignments. One format is to set up a block time to complete each unit or chapter. At the same time, it

is important to inform students of the rules and the guidelines for the course at the very beginning of the course.

For the online discussion, the instructors need to provide a clear guidance to the online learners, as well as participate at a reasonable frequent level. Badger (2000) suggested that an online instructor needs to provide direct guidance for the discussion. It requires thoughtful attention to detail. Online communication and learning depend on the visibility of the students so that the instructor knows that the student is in attendance. On the other hand, it is also very important for an instructor to be invisible online. The students also need to know the instructor is there and is a participant in the class. In a traditional classroom, an instructor may use body language to motivate or communicate an idea to the class. Students even pick up the enthusiasm level of their discussion when the instructor is physically present in their group. In an asynchronous environment, if the instructor does not participate or provide input to the class, even though the instructor may have been reading the postings from students daily, students will get the feeling they are abandoned. Therefore, an instructor should do everything possible to make instructional input without interrupting the flow of the discussion. In this way, the instructors will need to be online to ask questions as well as participate and summarize discussions at a reasonable frequency.

Teacher Collaboration. According to Honey and Henriquez (1993), teachers report they have grown professionally by collaborating and communicating with their peers. Inter-institutional collaboration in higher education can have positive effects on teaching and learning (McIntosh and Shipman 1996). Inter-institutional collaboration and team teaching can enhance distance education. By combining efforts, faculty from

different institutions can expand course offerings and provide those courses to a greater number of students, thus becoming less dependent upon the limitations of on-campus registration. Team members benefit from the experience of working with peers and instruction is improved by capitalizing on the respective strengths of each member and by developing new knowledge and skills.

Teachers working collaboratively offer many advantages. Teachers share plans, creative ideas, experiences, materials, methods, and insight to the planning, delivery and evaluation of their courses (Hawkes 1996). According the study by Xu and Ma (1995), those teachers without enough experience found team teaching provided a more assuring start for them. They gained more confidence and more control over the situation with the team teachers' presence. If there are two people directing the class, a lot of the pressure will be reduced. A new teacher may feel quite tense and nervous and working with another teacher will help to reduce the tension. For the novice online faculty, team teaching can be an effective way for them to develop self-confidence and learn precious experience from others. Students also enjoy the benefits of team teaching. Students indicated that team teaching increased interaction with instructors and provided a safer, democratic, and inviting environment for learners to participate (Xu and Ma, 1995). One of the most appealing factors of inter-institutional team teaching is the opportunity for faculty from diverse backgrounds and environments to come together and be creative. Planning is an integral part of distance education, and it is critical when teaching collaboratively. Team members then need time not only for academic planning, but also to establish good lines of communication.

Moran (1990) indicated some conditions which are necessary for effective collaboration: (a) Mutual trust and esteem among partners, (b) effective communication systems and commitment, and (c) control over the project by relevant individuals and groups. In order to get effective learning outcomes, teachers must understand and commit to important factors that lead to success.

Get to know online learners. Distance learners are in need of as much attention as their instructors. There are some areas to consider in supporting their learning. According to Simonson, Smaldino, Albright and Zvacek (2000), taking time to learn about the learners in the class helps to create a more productive learning environment. Knowledge of the general and specific learner characteristics can help an instructor overcome the geographic separation of instructor and students. The unique characteristics and needs of students are the very critical factors to be considering in the process of instructional development. Instructors need to know some of the necessary characteristics of the effective online learner and provide. The characteristics include high motivation, independence, active learning, good organizational and management skills, self-discipline, and adaptability.

The needs of distance learners. Priest (2000) introduced the topic of online student's needs and how those needs can be best met. Some of the needs of online learners and the strategies of how to help students are shared in the article.

Since not everyone will experience success overcoming the obstacles found in online learning, the needs of online learners should be identified. Priest (2000) indicated that the online student needs support services first of all. When students start an online course, they need to understand how the university functions and how it relates to

students. One way of helping students is to provide a counselor in the support position handling questions and problems throughout the course. Second, the online learner needs a social context for learning. In doing so, cooperative learning strategy might be a good way to help students in sharing information and resources. Through sharing information and resources in groups or teams, online students can achieve academically and increase their capacity for self-assessment. In addition, online students need an effective online communication and instruction. Online instructors do not have to know all about the hardware and software, but they need to possess the necessary computer skills for communicating and teaching. Online instructors must also give the students an alternative way to contact them beyond online communication in case the system is down. Finally, online students need clear guidance for the course content. Occasionally an online student may need extra motivation from the instructor (Priest, 2000).

Besides the above suggestions, it is important to let distance learners know what they are expected to do to be successful online learners. The characteristics of typical successful online learners are high motivation, self-discipline, independence, active learning, good organization and management skills, and adaptability (Priest). Providing the knowledge of how to be successful to distance learners would help them to get ready during the transfer from the traditional class to an online environment.

Student Support. In a distance education setting, student support is one of the critical components, but it is often overlooked. Student support refers to the assistance and guidance that students are offered besides the learning materials. As Moore (1997) points out good distance education is impossible without good learner support. For a

successful distance program, it is very important to get to know distance learners' special needs and provide the pertinent support to learner.

A study by Visser and Visser (2000) was focused on two points. First was to seek information about the expectations of distance students on aspects of academic, affective, and administrative support. Then they compared actual expectations of distance education students with the instructors' perceptions of these expectations. The results from the study demonstrated divergence between teacher perception and actual student expectations in several areas, especially in the area of academic support.

The implication of the findings indicates that adequate instructor support is one of most important factors to the success of the learners. Students highly ranked the instructor as the most important source of support in the distance education system. This means the importance of instructor function is a core component in the student support system. Secondly, administrative and motivational support are ranked almost equally in importance by students. A sound student support mechanism should have the component of cognitive support along with motivational and administrative support to meet·the diverse needs of learners. Thirdly, training for instructors and experience will help to better meet the support needs of students. Fourthly, a well-designed support system will help to reduce the dropout rate and the sense of isolation. Finally, the students explained that their needs of cognitive support needs result from the providing feedback on assignments and monitoring the progress of course (Visser and Visser).

The study points out those areas where there is divergence between the instructor's perspectives and learner expectations, and suggests the use of the evaluative instruments, used precourse and in-course (Visser and Visser). During the course, the

learners should be asked how the student support provided meets their needs and expectations. This formative evaluation process will give the tools to adjust the student support mechanism so that it would better meet the needs of learners. The finding from this research emphasize that distance learning institutions will have to find ways to help learners learn the way they learn best.

The challenge of creating online learning environment is to determine what learners truly need and how to reasonably accommodate their needs. Chute, Sayers and Gardner (1997) addressed the learners' support needs in an online learning environment where human and technology infrastructures represented two different dimensions in the online learning environment. Human infrastructure is like the customer services operation in a business enterprise that provides support services to the learners. The technology infrastructure is like what kind of technology capability available to use. Both have equal value in an online environment.

Learners expect to get accurate, efficient instructions in all aspects of course registration, course access and evaluation (Chute, Sayers and Gardner). If learners have trouble in accessing or using technology, they expect that help is available to them. If learners spent more time struggling with a problem, they will devote less time on the subject content. The course itself must be well designed, including the expected learning outcomes and address the learners' concerns. The support services will provide responses to learners' concerns and ensure that learners would not become frustrated with a single problem and give up the course.

Learning strategies. As we know, not all online learners use effective learning strategies. Hempill (2000) developed a learning profile instrument prototype. The profile

generated the learners' strategies for increasing their metacognitive and cognitive skills, academic motivation, and self-efficiency. The prototype was tested at three colleges. Results showed a significant difference between the achievement gains in the subjects who followed the suggested strategies and those subjects who did not use the strategies. Identifing learning preferences and the needs of learners prior to instruction are very necessary for effective learning. Based on the information, instructors can suggest learning strategies that match with the learners' needs and with the characteristics of the specific instruction.

Learning style. Studies by Sims (1995) agree that constructs such as learning styles are important considerations when developing effective learning environments. Few studies have even investigated the direct impact that learning style has on student performance in an online learning environment.

Recently, Steven and Dringns (1999-2000) conducted a study to investigate the effect of learning style on student retention in a graduate level program delivered online. The study shows that the majority of students can succeed in an online environment no matter what their learning style is. In this study, the author adopted Kolb's (1984) learning theory to divide the students' learning styles into four categories of diverger, converger, assimilator and accommodator. According to Kolb (1984), persons in the Accommodator category like to influence people and effect change, as well as value doing instead of observing. Accommodators have high scores on the concrete experience scale, indicating a preference for feeling rather than thinking. They usually rely on other people for information.

The results showed that 78 of the 98 students graduated from the program, while 20 students dropped out of the program for various reasons. As the data was collected, a majority of students fell into the categories of either converger or assimilator while 25 of the students fell into either the accommodator or diverger categories. The graduation frequency is apparent when observing the low graduation rate. The students falling into accommodator category show a graduation rate of 60% which is far less than the students in the other categories with graduation rate over 80% (Steven and Dringns, 1999-2000).

The research results also showed that levels of internal causality are highly correlated with levels of academic intrinsic motivation. If students in this study were intrinsically motivated to complete the degree, they would work hard to overcome the difficulties arose from their learning style preference (Steven and Dringns).

Motivation. Coldeway (1991) pointed out that motivation tends to change through instruction. When learners do not have proper motivation to participate, they will not participate or become nonstarters.

Wilkes and Burnham (1991) indicated that the reasons for participation may be different from those for dropping out and continuation. Learners like the learning itself because they have intrinsic motivation. It is needed to consider the issues of how to motivate learners. Therefore, the areas of research to be considered relate to how to motivate learners in the design of online learning. Topics that should be considered include what influences students' motivation to initiate study? How to deal with nonstarters? How to measure and increase motivation for students to persist in their study? What motivational strategies should be used for the types of interaction? What type of learning styles are more appropriate to online learning? How to measure and

increase motivation to continue? What is the model to describe in how to integrate motivational design model to the instructional system design model? These issues are important for the design of a successful online instructional environent.

Although the importance of learner's motivation for successful web-based instruction has been addressed in many studies, there is need for guidance in instructional design to develop motivating web-based instruction. According to Wilkes & Burnham, motivation to learning can be defined in terms of attention, relevance, confidence, and satisfaction. Motivation that influences the learning process can be defined as motivation to initiate, motivation to persist, and motivation to continue during the process. The learners will first need to decide if they will take the course online or not. Once they have started online course, they need to decide whether they will persist in the instruction. When they finish the online course, they need to decide whether to continue studying in a similar course online (Wilkes & Burnham).

Dille and Mezack (1991) studied locus of control and learning style as predictors of high risk among community telecourse students. The information of students' internal-external locus of control and learning style was assessed. The data indicated that successful distance education students have internal locus of control and are more abstract learners while individual learning style was not found to be a significant predictor of success.

Based on the research literature, Simonson, et al. (2000) conclude that distance learners generally have a more favorable attitude toward distance education and feel they can get the same learning outcomes as when they are in a traditional classroom. Distance

learners usually tend to be abstract learners who possess internal locus of control and are motivated intrinsically.

Learners' needs from survey. While many programs train faculty for distance teaching, how should learners be prepared for distance learning besides the technology preparation? Hardy and Boaz (1997) conducted a survey to see if students felt their needs as distance-learning students were understood by the course provider. The survey consisted of sections of student profile, administrative issues, technical issues, access, and course content. Nearly 200 surveys were returned from across the United States and Australia. The results indicate that not enough is being done to ensure success in a distance course. The most common negative responses are not technology-related issues but focused on the issues such as material distribution, overall communication, financial considerations, and knowledge of the institutions' policies and procedures. For example, many students are unaware of the financial aid options available to them. Prospective students need to know more about what is expected of them in a distance course. Students need to know that the attributes of successful distance learners require self-discipline, self-motivation, the ability to work independently, and perseverance.

As the result of the survey, Hardy and Boaz (1997) suggested that the education provider's responsibility is to provide the following minimum amount of information to distance learners, thus to get one step closer meeting the needs of a growing population of distance learners. These include:

- Information on fee structures and policies for students studying at a distance.

- A brief description of technology utilized, administrative information, personnel contact list for main campus and remote sites, listing of support services, and the sequence of courses leading to a degree if applicable.

- An expanded course syllabus, grading policies and deadlines for students.

- Suggested characteristics for distance learners: assertive, independent, self-disciplined and motivated (Hardy and Boaz, 1997, p.76).

Interaction.

Interaction refers to the pattern and natural of communication among and between people of the teaching and learning experience. Interaction is one of the most important components of any learning experience and has been identified as one of the major constructs in distance education research (Mclsaac & Gunawardena, 1996). Distance education has the potential to create a variety of highly interactive learning experiences.

Forms of interaction. Moore (1989) identified three forms of instructional interactions and made the distinction between three interaction frameworks in distance education.

- The interactions that occur between the learner and the instructor.

- The interactions that occur among learners.

- The interactions that occur between the learner and the subject content (Moore, 1989, p.2).

It is essential to know the three forms of interations and how they work with different functions.

Wagner (1997) pointed that Moore's interaction forms imply the purpose, intent, and intended outcome of an interaction by indicating what is involved in a transaction. The

conception of types of interaction provides a direction of the transactions that are involved in distance education and will benefit the designers, implementers, and administrators of distance learning programs. The learner-teacher interaction can take place when teachers deliver courses and lectures, provide feedback, and encourage the learners. Learners might be interacting with teachers by asking questions, submitting homework, and discussing problems with their teachers. Learner-content is a very import form of interaction and all education is based on this form of interaction. Learning occurs when learners interact with some content that can be found in books, abstract ideas, websites, and other sources.

Moore (1997) suggested learner-learner interaction is a challenge to an educator's thinking and practice in the current technology infusion age. Learners collaborate with each other on projects, exchange ideas, and conduct discussions related to the course. In distance education, all interaction is mediated through technology. Hillman, Willis, and Gunawardena (1994) proposed the fourth type of interaction, the learner-interface interaction. The media is employed as the means to deliver message. Therefore, they concluded that the learner's skill level in using the technology will influence the success in distance education.

Interactions constructed by objectivists and constructivists. Vrasidas (2000) indicates that a distance educator with an objectivist philosophy does not really value the interaction of learner-learner. Learner-teacher and learner-content are the two interactions which are most valued by the objectivists. Therefore, the courses will be constructed with an emphasis on organization and sequencing, with a lot of learner-teacher and learner-content interaction to meet the prespecified learning outcomes. The usual formats of

learner-content are reading assignment, literature reviews, reaction papers, and similar types of assignments. The learner-teacher interaction could be question-answer, real time chat, and discussions related to the course. The teacher with an objectivism philosophy usually is the transmitter of information and in control of the learning situation, even if collaborative work is assigned.

Constructivist teaching places major importance on interaction with the environment and peers in real-life context. The approaches are based on the ideas of situated cognition, anchored instruction, and cooperative learning (Vrasidas, 2000). In a constructivist learning environment, knowledge can only be understood in the context where the knowledge is used.

The constructivist approach promotes the construction of multiple perspectives in various domains. There is not one correct understanding and there is not one correct way for solving a problem. Students are encouraged to utilize multiple ways of solving problems. Cooperative learning strategies encourage learners to work together to discuss different points of view and to negotiate the positions. Therefore, the interactions constructed throught the objectivisits or constructivists will featured with objectivist or constuctivist approaches respectively.

Types of interaction. Interactions are critical to the learning experience, but interactions should not be added without real purpose. Focusing on building collaboration and group interaction would be more important than focusing on individual participation (Simonson, et al., 2000).

According to Wagner (1997), there are major types of interactions that should be considered in building interactions in learning. These are including:

- Interaction to increase participation,

- Interaction to develop communication,

- Interaction to receive feedback,

- Interaction to enhance retention,

- Interaction to support learner control,

- Interaction to increase motivation,

- Interaction for negotiation of understanding,

- Interaction for exploration,

- Interaction for clarification of understanding,

- Interaction for team building, and

- Interaction for closure (Wagner, 1997, p.20).

Before building a specific interaction into learning, it is necessary to know the approaches

to make them work and the functions of these interactions. For example, interaction to

increase participation may mean letting the learners meet the others in the cohort group for

the first time and providing learners with a means of engagement so that a human

relationship is established. For the interaction to develop communication, it can be

providing learners with the opportunities of personal expression and exchanging

information without fear of being judged or punished for improving communications.

Knowing the categories of interactions is helpful for designing a quality learning

experience. However, the rule of thumb for designing an effective interaction is to first

consider the goals and objectives of a specific learning experience.

Factors influencing interaction. The meaningful interactions that occur among

students and between teachers and students are the key components of good online

teaching that stimulate the exchange ideas intellectually. What are the factors that

influence the interactions in a well-designed learning environment? The study by

Vrasidas & Mclsaac (1999) demonstrated that four major factors that influence online

interaction include the structure of course, class size, feedback and prior experience with

computer mediated communication (CMC). Some elements of structure led to more

interaction while other aspects of structure led to fewer interactions. The size of a class

also influenced interaction. It is apparent that an appropriate number of student enrolled

in the course would create inappropriate amount of interactions. If the class size is too

small or too big, the interaction rate will be not enough or too much. Therefore, the issue

related to feedback is about the how many input and how is the quality of the input that

the students should receive. Students' experience will also influence the participation.

Students who were new to CMC were not comfortable with the online discussion.

However, these factors do not stand alone. They must be viewed in the overall context of

interaction.

Chapter Four

<u>Conclusion</u>

Online education has developed at a rapid rate and is becoming an important teaching and learning resource with the technology advancements available. While most of the research places emphasis on the importance of how to train teachers and learners to be technology competent for successful online education, there are many other factors beyond technology that need to be considered in an online education environment.

Teachers, learners, and communication/interaction modes are the three common elements of every teaching-learning situation. Especially when the learning context is changed from traditional to online, many adjustments are needed for the new environment. Teachers simply applying traditional teaching methods on to online technology will find an inappropriate and ineffective learning environment (Miller & Padgett, 1998). Besides technology elements, there are some important knowledge and skills that are required for teachers to prepare for an online teaching. With a positive attitude to online learning, teachers need to possess necessary knowledge and skills in the area of instructional design, be aware their own teaching philosophies, perform new roles, and provide support to learners. Teachers should always be aware of their philosophical assumptions because those assumptions will guide their teaching practice. However, it is not necessary to be on either of the extreme ends in terms of a constructivist or an objectivist since a specific philosophical approach would be suitable under a certain learning context (Varsidas, 2000).

The distance learning experience should be designed effectively for learning goals to be achieved. The knowledge of learner's individual differences, motivation, and learning styles can be used in the instructional design to help learners achieve the learning goals. The learning materials and methods of delivery will be responsive to the learner and how he or she will learn best (Kaufman, 2000). Knowing the attribute of online learners is critical for educators while constructing online interaction for better learning outcomes.

Online education is a technology mediated learning environment and technology plays a very important role in online education. However, the human side factors are as important as technology issues in an online environment. Technology can only be used as a tool to assist the teaching and learning process. The knowledge cannot be transferred until the human factors, like teachers and learners, have been addressed. Online education is relatively new compared to the other forms of distance education. There are still many questions besides technology that should continue to be addressed.

The recommendations that can be made from this paper are as following:

- Set up hands-on workshops for training faculty in technology competency, and the new skills and knowledge related to online education, like the knowledge of instructional design and the skills related to the teachers' new roles.

- Set up training for new online learners, so that the learners will be knowledgeable about what kind of expectations they are and other related knowledge for online learners. This might be a way in helping to reduce drop

out rates. The training for learners could be provided through the introduction to courses.

There are still a lot of issues that are need to be further researched with regard to the relationships among design elements, instructors, and learners in terms of learning outcomes influence online learning. The direction that the research moves is beyond the technology and onto the human issues.

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