Faculty Pedagogical Approach, Skill, and Motivation in Today's Distance Education Milieu

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Abstract

This literature review explores the pedagogical approach, skill and motivation factors that influence or are influenced by distance education instructors. Advancing distance education in today's technology-driven milieu requires a different pedagogical approach whereby distance education students acquire knowledge. While distance education students want unconstrained access to learning regardless of time and place, instructors value face-to-face interaction. One pedagogical approach that fulfills both stakeholders' objective is a collaborative, problem-based asynchronous course design whereby structure and dialog are optimally balanced. Asynchronous Learning Networks, or ALNs, afford students the flexibility they desire while a collaborative, problem-based technique sets the stage for an instructor-favored framework. In light of traditional course delivery, such a "compromise" has been shown to result in comparable quality of education and performance.

Student performance, however, is also contingent on instructor skill and level of effort or motivation. Specific instructor training and development is needed to keep pace with today's rapidly changing distance education milieu. Instructor-identified skills requiring improvement center on the efficient and effective use of technology and the application of a collaborative, problem-based ALN pedagogy. The acquisition of skills does not necessarily translate into being motivated to teach. Incentives, which improve motivation, have been repeatedly shown to be intrinsic while disincentives (obstacles), which include inadequate skills but primarily pertain to time-related issues, are extrinsic. Collectively, instructor motivation, skills and pedagogical approach are intricate instructor-based issues that form an essential part of a quality distance education program.

Introduction

Although computer and telecommunication technology is a relatively new phenomenon, distance education is not. Nevertheless, the use of telecommunications to establish and deliver distance education programs has led to a revision of distance education's formal definition. As defined by the United States Distance Learning Association (1998), distance education is "the acquisition of knowledge and skills through mediated information and instruction, encompassing all technologies and other forms of learning at a distance."

Beginning at the turn of the century with correspondence education, the advent of the radio brought about educational radio. It itself was antiquated soon after the introduction of the television as educational television, which remains a part of our culture today, became the prominent distance education media (Saba, 1999). So, too, are computer networks of today – a technological breakthrough that is on course to transform that which is presently understood to be distance education. According to Kevin Oakes, president of Click2Learn.com, as cited by O'Donoghue (2000) "… Education is the last great frontier to be revolutionized by technology." Such change inevitably requires a paradigm shift (Rockwell, Schauer, Fritz, & Marx, 2000) which, for distance education faculty, means a change in pedagogical approach. Such a significant transition is inevitably met with many opportunities and challenges.

Perhaps the greatest challenge involves the magnitude and rate at which change occurs. Rapidly evolving technological advances continue to transform distance education like no other innovation of the past century. As modern-day educational institutions scurry to establish and maintain their distance education program, few successful models have emerged. Until a proven model is developed, uncoordinated attempts at addressing the needs of the stakeholders – students, faculty and administrators – are the norm. Readily accepted by each stakeholder, however, is the use of Asynchronous Learning Networks to reach and instruct distance education students. Increasingly apparent is that the new instructional delivery has not only transformed the role of the student, but course instructors as well (Wegner, 1999). As has been the case with each progressive innovation,

course instructors must learn to apply their expertise to the new learning milieu. Instructor training and development continue to be integral parts of the transformation process.

Acquiring the necessary skills is only part of the equation, effort – an outward expression of one's motivation – is equally important. Like members of other professions, distance education instructor's level of effort, or motivation, is a function of effectual incentives, which increase motivation, and prevailing disincentives (obstacles), which decrease motivation. An organizational setting in which incentives are attainable, obstacles are mitigated, or both should elicit a higher level of effort which, in turn, could play a significant role in students receiving a higher quality of education. To this end, identifying instructor perceived incentives and obstacles is paramount.

This study explores characteristics relating to Hiltz's system contingency model, which is depicted in Figure 1 (Hiltz, Coppola, Rotter, Turoff, & Benbunan-Fich, 2000), that influence or are influenced by course instructors. Of particular interest are the instructor's pedagogical approach, skill, and level of effort, which, as discovered by Hiltz, et al. (2000), are necessary to producing favorable student outcomes in an Asynchronous Learning Network, ALN, environment.

Figure 1. System Contingency Model (Hiltz, Coppola, Rotter, Turoff, & Benbunan-Fich, 2000)
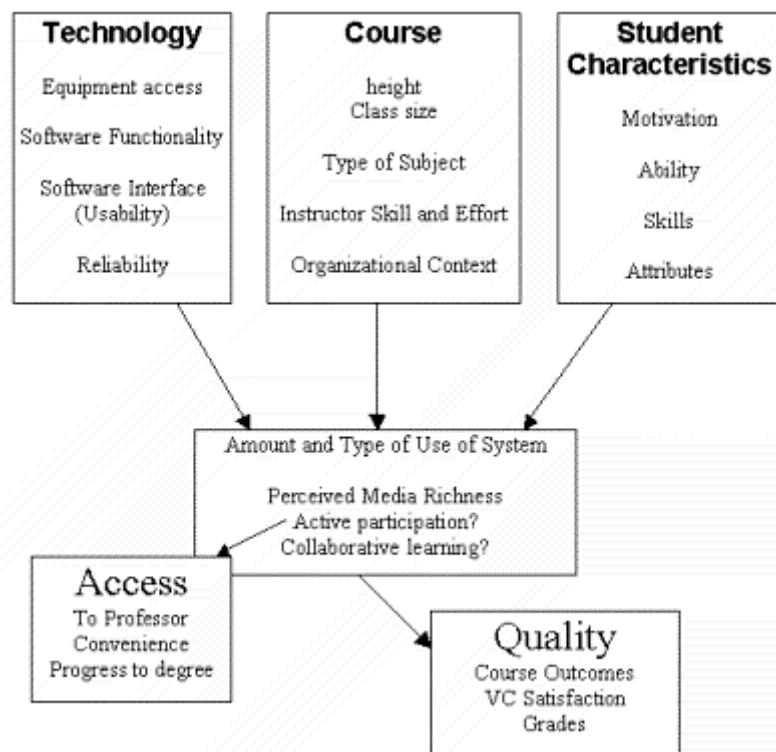
Background Literature

Asynchronous Learning Networks are but one of three modes by which students gain access to learning. The other two modes of delivery are local and synchronous. Each classification may be defined as (Bourne, McMaster, Rieger, & Campbell *as cited by Caviedes, 1998*):

> 1. Local: same place at the same time (e.g. traditional classroom)
> 2. Synchronous: different places at the same time
> 3. Asynchronous: different places at different times

The selected mode of delivery is contingent on that which best suits the needs and desires of the students, who are an educational institution's consumers. Gilbert as cited by O'Donoghue (2000) mentions that several consumer-based studies show that the growth in the number of distance education students is due to their desire to engage in learning that is flexible; that is, anytime, anywhere education (*Caviedes, 1998*). Therefore, to meet the demands of distance learners, asynchronous learning must be the primary mode by which distance education transpires.

Even though asynchronous on-line delivery via the internet or similar technology is the format preferred by students, in a study conducted by McKenzie (2000) faculty preferred a combination of face-to-face meeting and on-line instruction; moreover, 96.7% of faculty felt that face-to-face meetings were beneficial to their course. The

instructor's most frequently cited reason for their preference was that "…face-to-face meetings provided an opportunity for people to interact and get to know one another" (McKenzie, 2000). Inasmuch as on-line instructors consider interaction valuable to the learning process, on-line collaboration, if proven effective and attainable, might be a suitable compromise and, therefore, the preferred method of on-line instruction.

Although collaborative learning is just being introduced as a promising method of instructing ALN students, collaborative learning theory along with its history is well documented and often presented in a comparative framework with alternative learning theories. Hiltz, et al. (2000) state that ALN theory may be drawn, adapted, applied, and integrated from pedagogical theories (educational research), media effects theories (communications research), and group interaction/social influence theories (social psychology and sociology). From pedagogical theory emerges the theme of objectivist and constructivist approaches to teaching and learning (Glasser & Bassok as well as Leidner & Jarvenpaa as cited by Hiltz, et al., 2000).

The objectivist approach is often considered a "passive" learning method to the extent that each student is responsible for independently learning information contained in the body of objective knowledge while the instructor is responsible for facilitating the transfer of knowledge via presentation and explanation (Hiltz, et al., 2000). Hiltz, et al. (2000) also explain that, unlike the objectivist approach, the constructivist approach is "active" in that each student is responsible for discovering, constructing, practicing, and validating acquired knowledge via active exploration and interactive social collaboration with others. In short, "… collaborative learning or group learning refers to instructional methods that encourage students to work together on academic tasks. … Collaborative learning pedagogy shifts the focus from the teacher-student interaction to the role of peer relationships in educational success" (Johnson as cited by Hiltz, et al., 2000). Table 1 summarizes the teaching/learning theories.

Table 1. Summary of Teaching/Learning Theories

Pedagogy Approach	Instructor Role	Student Role
Objectivist	Facilitating the transfer of knowledge to the student via presentation and explanation.	Passive. Independent of others, each student is responsible for learning information contained in the body of objective knowledge
Constructivist	Facilitating the transfer of knowledge to the student via creating a learning environment conducive to active and interactive participation in the learning process.	Active. Discovering, constructing, practicing, and validating acquired knowledge via active exploration and interactive social collaboration with others.

The research of Asynchronous Learning Networks, or ALNs, is often presented in a context of that which rivals traditional education. The question most frequently investigated was which mode of instruction, traditional or ALN, resulted in better student performance. The critics have been silenced as Hitlz, among other researchers, discovered that the mode of delivery did not result in any statistically significant differences in student performance success measures (Hiltz, et al., 2000). While the objective of this research is to compare the effectiveness of the two methods of instruction, an underlying theme is that each teaching technique requires a unique set of skills to deliver quality education.

Regardless of the mode of delivery, instructional quality remains the responsibility of distance education faculty (Olcott & Wright as cited by Rockwell, Schauer, Fritz, & Marx, 1999); however, the majority of faculty are unprepared to effectively teach in a technology-dominated milieu (O'Donoghue, 2000). Rockwell, Furgason & Marx (2000) assert the following regarding teacher preparedness, research and needs:

> Emphasis needs to be placed on identifying effective teacher competencies, along with the training needed to support faculty development. Identifying the amount and type of support or assistance teachers need, as well as resources required for various distance teaching approaches and course development, is important.

Fortunately, a study conducted by Husmann & Miller (2001) revealed that administrators perceive faculty performance as the key to instructional quality and, to achieve a high level of performance, Husmann & Miller (2001) propose that administrative support for faculty development is the logical next step.

Also of issue for administrators is motivating faculty to teach on-line, which necessitates assessing faculty-perceived incentives and obstacles, both of which have been explored in-depth by McKenzie (2000) as well as Rockwell, Schauer, et al. (2000). Although their research has shown that a number of issues influence faculty decision to teach on-line (McKenzie, 2000), most of the incentives are intrinsic while a majority of the obstacles pertain to time. Identified obstacles could be lessened by the institution's willingness to provide faculty with adequate education, assistance, or support (Rockwell, et al., 1999). Incentives too could augment motivation in the appropriate environment. An overview of the general framework and instructor-based issues is depicted in Figure 2.

Figure 2. General DE Framework and Instructor-based Issues
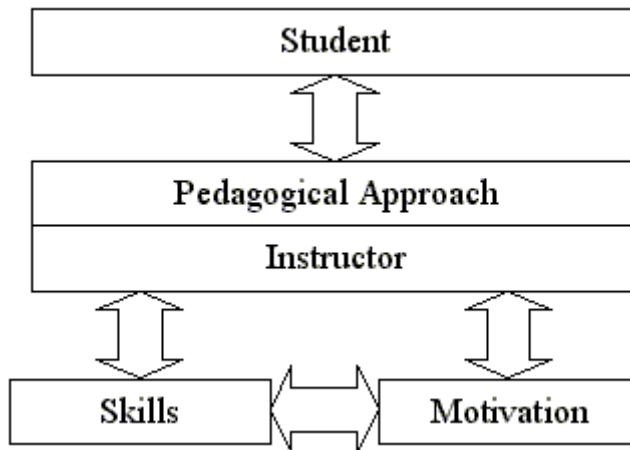
Discussion

Faculty Pedagogical Approach

Of the instructor-based influences, pedagogical approach (i.e. course delivery), which invariably encompasses the instructor's skill and motivation, is the most transparent to the students. Unlike traditional courses in which instruction is simultaneous to a group of students via one mode of delivery, according to Husmann & Miller (2001) in order to address the pedagogical differences among distance students, a change in delivery schemes, which necessarily affects course design, is required. Moreover, instructors need to transform their teaching style, i.e. method, to better suit the new milieu (Rockwell, Schauer, et al., 2000). While there are numerous approaches to instruction via distance, two themes at the forefront of distance education delivery are Asynchronous Learning Networks, which addresses the primary mode of delivery, and collaboration, which is being shown to be one of the best methods of learning via the distance.

Though a collaborative learning pedagogy in an ALN environment can be enhanced by further integration of technologies, such a construct is possible using existing technology via the collaborative learning pedagogy known as problem-based learning (*Caviedes, 1998*). Barrows & Tamblyn as cited by Wegner (1999) have defined problem-based as:

> ...learning that results from the process of working toward the understanding or resolution of a problem. The problem is encountered first in the learning process and serves as the focus for application of problem solving or reasoning skills, as well as the search for or study of information or knowledge needed to understand the mechanisms responsible for the problem and how it might be resolved.

> In a study conducted by Hiltz, et al. (2000), quality learning via ALN is shown to be more likely when the student actively participates in on-line learning and the instructor uses collaborative, problem-based pedagogical strategies. While quality of learning is the primary goal, a problem-based learning experience does not emerge by happenstance. Research conducted by Wegner (1999) revealed that successful problem-based learning is designed such that:

1. The starting point of the learning is a problem [Bridges & Hallinger].
2. The problem should be one that students are apt to face in the future [Bridges & Hallinger].
3. Subject matter is organized around the problem rather than by discipline [Bridges].
4. The teacher best supports the lesson through problem formulation.

The fourth design point of Wegner's problem-based approach to learning suggests that student collaboration in an ALN environment in no way exonerates the instructor from remaining an integral part of the learning process. While the instructor continues to play a key role, the role of the student and instructor are redefined as "student as worker" and "teacher as coach," respectively (Wegner, 1999). As such, instruction is fundamentally learner-centered and the instructor becomes more of a Socratic questioner, eliciting thought, providing resources, motivating, and guiding student development (Wegner, 1999). For the student to excel, course structure as established by the instructor and dialog are critically important as they define the milieu in which learning transpires.

Saba (1999) offers operational definitions for structure, "the extent to which the instructor is responsive to the learner," and dialog, "the extent to which students could influence and control the course of instruction by interacting with the instructor." Distance decreases with an optimum balance of structure and dialog (Saba, 1999). A similar point publicized on Distance-Educator.com (2000) is that distance decreases when teaching is structured such that students have the opportunity to engage in responsible, creative and meaningful dialog with educators. That is, structure and dialog (not geographic separation) help to define transactional distance (Distance-Educator.com, 2000), which may be narrowed by a structure that is conducive to effective communication between the student and instructor. Notwithstanding extrinsic student-dependant factors such as student background, ability, knowledge, motivation and readiness as well as subject-matter considerations including discipline, curriculum and course; collaborative, problem-based ALN course design is a key component to learning success.

On the whole, using modern-day technology to build a collaborative, problem-based ALN learning milieu whereby structure and dialog are optimized, can produce comparable results to those earned in the traditional milieu. In a study conducted by Hiltz, et al. (2000), students felt that the quality of learning can be improved by taking the course on-line and using ALNs. A similar finding was made by Wegner (1999) in which students taking a course via the internet had more positive feelings about their experience than did the students taking the same course delivered via traditional means. Interestingly, most instructors who effectively employed collaborative learning techniques in their ALN course felt that the degree of learning by ALN students was comparable to those in their traditional classroom courses (Hiltz, et al., 2000). By contrast, the learning experience of ALN students in an unstructured setting in which the instructor did not provide motive and encourage student collaboration was perceived by their instructor to be inferior to the learning experience of students in the traditional classroom (Hiltz, et al., 2000).

While subjective impressions of students and faculty are encouraging, Hiltz, et al. (2000) confirmed the views via statistical analysis of various learning success measures:

> ALNs can improve quality of learning as measured by grades or similar assessments of quality of student mastery of course material. In the field study, there were no significant differences between modes of delivery for overall course grades, once student grade point average was used as a co-variate. In the quasi-experimental study, on-line students produced significantly better reports (the measure of learning used) than students working in the traditional classroom.

Wegner reached a similar conclusion. In a comparative study involving two groups of students – one instructed by the traditional mode, the other internet-based employing a collaborative, problem-based learning approach – taught by the same instructor, Wegner (1999) found the two groups performed equally well. The difference in final exam scores, the measure by which learning was assessed, were not statistically significant even though the internet-based group never attended an on-campus lecture.

Scholastic success measures aside, research has also shown that computer-based instruction helps the participants to learn "how-to-learn skills" such as collaboration, problem solving, information retrieval and communication skills (Eastmond as cited by Wegner, 1999). Consequently, collaborative, problem-based ALN learning may be more practical from a functional standpoint as students learn and improve upon everyday skills. So, too, must instructors hone their skills, the second instructor-based characteristic.

Faculty Skills

Daniel as cited by O'Donoghue (2000) views faculty training and development as "… key to successful deployment of new technology in teaching." Rockwell, Furgason, et al. (2000) assert the following regarding

instructor-preparedness research and evaluation of needs:

> Emphasis needs to be placed on identifying effective teacher competencies, along with the training needed to support faculty development. Identifying the amount and type of support or assistance teachers need, as well as resources required for various distance teaching approaches and course development, is important.

Not surprisingly, faculty already foresee the need to further develop their technological ability as well as teaching skills so as to perform well in the new learning environment.

Faculty-identified issues that require additional education, support, or both include (Rockwell, Schauer, et al., 2000):

1. developing interaction
2. developing instructional materials
3. applying selected technologies
4. marketing the course

The self-identified faculty needs parallel the findings of Miller & Carr as cited by Rockwell, Schauer, et al. (2000), who, in a study involving faculty of 1862 land-grant universities, identified the five top faculty information and training needs:

1. teaching techniques for distance education

2. enhancing interaction in distance education

3. learner-centered teaching techniques

4. designing instruction for credit courses

5. models of effective distance teaching

Interestingly, the skills described by faculty and identified in the research are the very skills required for a successful collaborative, problem-based ALN program. Accordingly, to implement the pedagogical approach found to provide a high quality of learning, instructor training in its techniques and delivery is warranted. Faculty training, however, is not prevalent in many universities due, in part, to an inappropriate reward system for encouraging faculty to embrace modern distance education pedagogy (Mason as cited by O'Donoghue, 2000) which, in turn, could affect an instructor's level of effort, the third instructor-based characteristic.

Faculty Level of Effort

An instructor's level of effort, or motivation, is affected by perceived incentives, which generally increase motivation, and obstacles, which usually decrease motivation. Many studies have been conducted that sought to uncover the perceptions of faculty regarding incentives and obstacles to teaching at a distance. Inquiring of distance education instructors as to that which motivated them to deliver on-line courses, McKenzie (2000) uncovered seven reasons. The three reasons cited by more than 50% of the respondents are:

1. Desire to get students more involved with technology (58%)
2. Opportunity to use technology more innovatively to enhance course quality (58%)
3. Opportunity to meet needs of students at a distance (55%)

In another study, Rockwell, et al. (1999) found that most of the incentives that encourage distance education instructors to participate in a distance education program are intrinsic; specifically, six of nine faculty-specified incentives are intrinsic:

1. Providing innovative instruction
2. Applying new teaching techniques
3. Self-gratification
4. Fulfilling a personal desire to teach
5. Recognition of work
6. Peer recognition

Two of the remaining three incentives, access to place-bound students and reduction of student travel time, relate to expanding educational opportunities. The last incentive, which is related to four of the five perceived obstacles, is release time.

Obstacles cited by distance education instructors are largely attributed to its time-demanding nature. Rockwell, et al. (1999) uncovered five instructor-specified obstacles to teaching at a distance:

1. time requirement
2. time taken from research
3. training requirements
4. developing effective technology skills
5. assistance or support needs (with on-line course design and delivery)

The time requirement findings are reinforced by (McKenzie, 2000) who found that 76% of faculty felt that more time was devoted to preparing and on-line course using WebCT, the institution's distance course delivery technology, than traditional courses. McKenzie (2000) also discovered that the number of hours per week that faculty interacted with on-line students was often considerable, though quite variable, ranging from an average of 1-3 hours to 13-15 hours. Of note, yearly evaluation process and promotion/tenure, two categories generally considered as important, were generally found to be neither an incentive nor obstacle. However, both categories were found to be subjective as some instructors view either or both categories as incentives that made teaching via distance more appealing while others view them as issues that do not entice them to engage in distance education instruction (Rockwell, et al., 1999).

Summary

There are many factors that contribute to learning at a distance. Hiltz's system contingency model, presented in the introduction, depicts the primary components. Three instructor-influenced variables, referred to by Hiltz, are the instructor's pedagogical approach, skill, and level of effort.

Pedagogical approach in the current distance learning milieu requires a change in course design, delivery and teaching style so as to meet the needs of distance learners. Founded on the principle of learner-centered education, collaborative, problem-based learning, in conjunction with Asynchronous Learning Networks (ALNs), is the premier pedagogical approach shown to promote quality education at a distance. Regardless of the changes taking place, the instructor continues to play a pivotal function in the learning process; however, the role of the instructor becomes one of coach, one who facilitates learning by establishing and maintaining a backdrop that is conducive to active and interactive participation in the learning process. The student's role also changes to one of active participant, one who discovers, constructs, practices, and validates acquired knowledge via active exploration and interactive social collaboration with others. A unique challenge and opportunity for both instructors and students, modern distance education requires new skills, training and development.

Faculty training and development is critical to the success of any distance education program. Unfortunately, most faculty – the stakeholder most responsible for instructional quality – are not equipped with the necessary technological and pedagogical tools to effectively deliver distance education courses. To attain the level of performance required by administrators and distance learning students, a new paradigm is emerging as administrators realize that instructor skills must grow and change in conjunction with the evolution of distance education. Faculty-identified developmental needs parallel the skills required to implement and advance a collaborative, problem-based ALN learning program. Success of the program as well as its students hinge on instructors being able to efficiently and effectively employ the techniques, technology and delivery of this promising pedagogical approach; consequently, instructor training is imperative to their acquiring the essential skills needed to advance distance education.

While possessing the necessary skills is important, an instructor's level of effort, or motivation, is equally significant. An institutional setting in which incentives are attainable, obstacles are negligible, or both should elicit a higher level of effort that could play a meaningful role in students receiving a higher quality of education. To this end, identifying instructor-perceived incentives and obstacles is paramount. While most of the incentives are intrinsic, identified obstacles, most of which relate to time constraints, are extrinsic. Regardless of its source, the level of effort (or lack thereof) to perform is inevitably and ultimately reflected in the quality of education.

From correspondence education to educational radio and television, distance education has evolved along with the advent of new technologies. As with the technology used to advance its cause, distance education institutions and faculty must also transform. Pedagogical approach, skills and motivational framework must change and grow to

meet the demands of distance education students in the twenty-first century milieu. In doing so, distance education will continue to fulfill its design purpose of providing quality education at a distance.

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