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ABSTRACT

Computer-mediated instruction is particularly well-suited to typical community college students because it offers an alternative to the time and place constraints of traditional classrooms. Key characteristics of computer-mediated learning are as follows: instructors and students are separated by distance; instruction is delivered via computer technologies; communication is interactive; and learning is done asynchronously. Computer-mediated distance learning allows students to practice and acquire the skills needed to compete in a technology-dependent knowledge society. Virtual classrooms allow higher levels of learner participation by allowing students to take the time required to give well-considered responses and by leaving permanent records of discussions to which students can refer. The following are some guidelines for practitioners designing computer-mediated learning environments for adult learners: (1) provide opportunities for learners to create scaffolds within which they can make sense of new information; (2) create a learning community that is based on a high degree of interaction and sense of cooperation; (3) ensure that any synchronous communication tools (for example, chat rooms) included within the computer-mediated learning system coincide with the content contained in particular assignments; (4) build feedback mechanisms into the course; (5) view the online instructor's role as that of a facilitator; and (6) provide adequate, accessible technical support. (Contains 12 references.) (MN)

The Adult Learner in the Computer Mediated Environment

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What does the future hold for computer mediated learning? Computer mediated learning holds a promise for many different applications especially for the adult learner. We are using technology to free learning from the limits of time or space, which makes education available to more people. Employees may find on line learning the only option for upgrading skills, finishing a degree, or pursuing another degree. Computer mediated learning helps many adult learners balance the demands of work and family with their pursuit of more education. Even the traditional college students find advantages in taking a course or two on line.

We must acknowledge the accomplishments of computer mediated learning. However, it is imperative to understand the responsibilities that accompany this type of non-conventional classroom setting. Adults have special needs and requirements as learners compared with children and adolescents, thus online educators should understand these requirements. An effective educator should create a safe environment for the adult learners to express themselves freely in appropriate ways, to share their ideas and ask questions (Porter, 1997). Further, instructional designing teams face a challenge to create an interactive community of learners where the instructor releases the overall control and facilitates an on line course rather than utilizing the traditional instructional approach.

This paper discusses some of the instructional issues and possible solutions for designing and implementing the computer mediated course.

Definition of Computer Mediated Learning

There are many synonyms used for Computer Mediated Learning, such as Distributed Learning, E-Learn, Distance Education, Web Teaching and Online Learning. For the purposes of this paper, Computer Mediated Learning will be defined by the following standards:

1. The instructor and students are separated by distance.
2. The instruction is delivered via computer technologies.
3. The communication is interactive. The teacher and student send and receive feedback. The feedback may be immediate or delayed.
4. The learning is done asynchronously. The delivery therefore does not take place simultaneously. The instructor delivers the content via a computer and the students respond at a later time.

Knowledge-based Learning

The traditional education model is based primarily on the concept of the school and teacher in a classroom, alone and not interconnected with the outside world or other educational institutions. This type of model does not generate competence in a knowledge society (Harasim et al., 1996). Curricular content and the approaches to twenty-first century culture are being forged through discussion and debates in the public, business, and academic sectors. It is therefore clear that the traditional education model and approaches are inadequate. Students need new and different information resources, skills, roles and relationships.

Education should be responsive to the demands of students and the world in which they work and live. As globalization and the rapid exchange of information required increase, the need for faculty, institutions and students to respond to that reality increase. Computer mediated distance-learning offers a means by which students can practice and acquire the skills needed to compete. In addition to acquiring knowledge, students learn about technology through its use. At the same time students learn about how to collaborate with others in geographically distributed teams. They also learn what it takes to pace themselves in order to get the job done. The student becomes confident in their abilities and feels empowered to work in a manner that is convenient. Further, they can seek out the information needed for the task at hand. These skills are then transferable to the world of work as they engage in an online learning environment.

Active Participation

If all goes well in a traditional class, students come in having already read the material and are ready to discuss it. In undergraduate classes this is rarely the reality. In graduate classes, perhaps half of the students will have seriously considered the readings. Of those, there may only be a few that are comfortable in expressing their opinions in class. These are not necessarily the students who are most capable of dealing with the material on a complex level. Have you had the experience of leading a disappointing classroom discussion only to have a couple of very bright students (who remained silent throughout the class discussion) stop after class and engage in exactly the sort of dialogue you tried so hard to pull from them earlier in the classroom? A reason for this may be simple. While the less-thoughtful students were talking, the more thoughtful ones were

still thinking about the question and formulating interesting and relevant responses. Their responses were ready long after the class discussion had moved on.

The virtual classroom is asynchronous. Students log on and read the discussion question. They go away and, over the course of the next few hours or the next couple of days, they think about the question and formulate a response. When they log back in, they are ready to give a well-considered response. The virtual classroom permits a higher level of participation by the whole class. Student interaction is not whatever rolls off the tip of your tongue but rather the product of more deliberate reflection.

Lohman (1984) suggests, "the largest constraint on the use of discussion (in the college classroom) is time" (p. 131). Too often, the end of a class period terminates an intuitive discussion. The asynchronous nature of the Web-based course avoids this circumstance. This means that a class discussion can go on ad infinitum, or as long as two individuals are willing to devote the time to continuing a dialogue. The Web-based discussion differs from the conventional face-to-face discussion in that more time may be spent reflecting on potential responses (Fetterman, 1996). In the face-to-face discussion the response is, by necessity, immediate. The Web-based format leaves a permanent record and may be referred back to at appropriate points in a semester.

Characteristics of a Community College Student

The average age of a community college student is 29 years old (National Profile of Community Colleges: Trends and Statistics, 2000). They are commonly referred to as a non-traditional student or adult learner. They may be students who have been out of school for some time and have decided to return to school. Many adult learners are

homemakers, single parents, retirees, or people making mid-life career changes. These students have many responsibilities outside of the classroom, such as jobs, children, and/or homes that must be maintained. They are working adults who want to develop professionally and grow through lifelong learning. They choose computer mediated instruction as an alternative to the time and place constraints of the traditional classroom. Adults recognize the importance of lifelong learning and are using computer mediated instruction to pursue their learning goals.

Effective Approaches to Learning for the Adult Learner

Adult students enrolled in community colleges bring far more experience and practical information than younger students. They are interested in knowing how new knowledge relates to what they already know so that they can create a scaffold within which they can make sense of the new information (Brookfield, 1986; Knox, 1977). Adult students benefit from being able to associate new learning with their previous experiences and accomplishments. Brookfield (1986) defines this as a connectedness to learning. Therefore, effective approaches to helping adults learn include contributions from the students and their involvement in what is being taught and how it is being taught. In keeping with the mission of community colleges to encourage lifelong learning it is important to encourage and support adult students' involvement in their own learning.

Involvement in the Learning Process

In his book, Schools That Learn, Senge (2000) discusses the importance of creating within the culture a learning community that is cooperative. Interactivity and a

positive culture create a sense of cooperation where group learning and productivity becomes greater than the total sum of individual students' learning and productivity (Covey, 1989). It is therefore important that this atmosphere is created in the online learning environment. A number of courses delivered in a computer mediated environment may be delivered in an asynchronous manner that is associated with the traditional independent study and correspondence work. While this format serves the purpose of meeting the needs of the non-traditional learner regarding time and distance, it leaves something missing in the learning curve for students since they lack the opportunity to benefit from the experience of structured dialogue, interaction with faculty and peers, and the sense of community that can be created in a traditional face to face classroom (Roberson & Klotz, 2001). Kearsley & Lynch (1994) assert that computer mediated courses must adopt a pedagogical framework closely aligned with social learning theory for students to maximize the benefits of computer mediated instruction.

Course cultures with a high degree of interaction benefit from the concept of team learning, which Senge (2000) defines as

> "...a discipline of group interaction. Through such techniques as dialogue and skillful discussion, small groups of people transform their collective thinking, learning to mobilize their energies and actions to achieve common goals and drawing forth an intelligence and ability greater than the sum of individual members' talents."(p. 7-8)

Suggested Activities for Interaction

Many computer mediated course systems include a synchronous communication tool, such as the chat room, as well as interactive asynchronous tools such as e-mail, threaded discussions and a bulletin board. When these tools are used it should coincide with the content contained in the particular assignment. For example, a case study or a topical statement, question, or problem can be posted. Each student can then be directed to respond based on their knowledge, experience, readings, and interactions with other students. Part of the requirement to these postings would be requiring the student to respond or comment on at least one posting made by their classmate. Unlike a chat room, the threaded discussion affords the student a period of time to frame ideas and respond to the original posting and to subsequent student postings. Students are able to further develop their thinking and writing skills. The instructor can monitor the discussions by posting intermittent feedback.

Computer mediated applications also include e-mail within the course for communication between students and students and instructor. Sometimes the online student needs to know the instructor is there if needed. This function allows a personal connection or bond that further enhances the idea that the instructor is available as a constant support to the students. If students are working on a project they can use the e-mail as a way of working together. Another possibility would be using the chat room to meet and discuss the project assigned by the instructor.

Instructor's Competencies

Developing or participating in an effective computer mediated course involves certain competencies that may not be possessed by instructors. The instructor must question what is important in the virtual classroom – the learner, of course. How is the student going to be learning this material? Students have various learning styles and as an instructor you will not be face to face with the student to observe the nonverbal feedback of questioning on a student's face. It is therefore important to build in feedback mechanisms into the course. How can an interactive environment be created with the tools provided? Instructors can provide the content; however, a team-based approach to designing the course is more effective. The tech designer in cooperation with the instructor can share areas of expertise and create the ultimate online environment conducive to a positive learning experience. It is a learning centered environment that makes the student the number one priority.

Student's Competencies

Your team has developed a truly effective computer mediated course; everything is in place including your attitude as an online instructor. Remember, your role as an instructor has changed to course developer and facilitator (Weitzenkamp, et al, 2001). Now you are ready to login to start your computer mediated course. No, not yet. Does your non-traditional student lack technology skills? Does this student feel comfortable to participate in the course? Although the instructor may be enthusiastic about delivery of the online course, is the student ready?

Since the educational institutions are moving toward increasing the number of computer mediated course offerings, it is important that these same institutions begin to develop training for first time participants. This can be accomplished through required online tutorials that must be completed before entering the course. The student takes a final quiz after navigating around the sample course. The quiz is then forwarded to the instructor that has developed the course. If he or she feels the student has the competencies to enter this new environment, the student can move forward.

In addition to the initial tutorial there should be a student support center. This center can be part of the computer mediated learning department. It should consist of a Coordinator that lays out the plan of how the student will be served. There should be workshops throughout the semester instructing students how to navigate around the online application. A workshop could substitute for the online tutorial. There should be a telephone help area for student support and possibly an online email address where students can ask questions with a feedback response of no more than twenty-four hours.

Technical support is crucial for the adult learner who has registered for the computer mediated course due to time, financial and personal constraints. The student may have invested in a home computer to allow for freedom in completing assignments; however, this may be the students' initial experience in an on line environment. Perhaps the students are unfamiliar with the application used for the course. There may be problems such as copying and pasting, attaching a document, knowing how to upload or download a document. Having a technical person on a help desk at the institution will minimize some of these frustrations.

Conclusion

In essence, computer mediated learning should be a learning-centered environment. The process of engaging students to participate while hearing, appreciating other students ideas, being able to explain their own ideas in a safe environment and allowing time to reflect on the input from all of the participants should be considered when designing an on line course. Technology opportunities should not be wasted by packaging instruction in a non-interactive one-way format and then delivering it to a waiting student. Let's face it; that is a correspondence course.

Student support systems need to be in place and functioning effectively to help students' deal with the frustrations associated with computer mediated learning. These occur in both the technical as well as the interpersonal communication realm. It is important for the instructor to realize as students leave a common isolated learning environment for the computer mediated environment the instructor is the key to this success. He or she must evaluate if the student is prepared for such environment. If the student is a non-traditional learner this problem is compounded since other personal issues are brought into the picture. It is therefore the responsibility of the institution offering computer mediated courses to develop the appropriate support center for these students. Those students that do not feel they are in a positive learning environment will quickly drop. This will only compound outstanding retention problems that may already exist at the institution.

The 21st century workplace is the knowledge changeable workplace. Employees, the non-traditional learner, must continuously update their skills. Computer mediated

learning fits into their already busy schedule. Without the infrastructure and appropriate support many adult students that would have taken the choice of on line learning will give up the opportunity of taking a course in this environment. The institution that offers computer mediated learning without the proper design and support must ask itself if they are selling a product rather than serving the learner.

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