Technology In The Classrooms: New Designs for Learning
Dr. Gerald W. Burgess - Educational Technology Training Center
Albany State University

Introduction

New learning technology implies a "new" way of learning. Yet, the reality is that much of what is taught using computers and multimedia is being done in the same "old" way. Making a paradigm shift regarding learning processes is not easy (Kahn, 1993). Conventional classroom instruction may require teachers and training developers to rethink their approach to instruction. Kahn believes there is a learning crisis in society today that is a result of how society thinks about learning. Society thinks that the stereotypic model classroom is where students sit quietly in rows listening to a teacher. Such a classroom model is proving to be wrong as well as dysfunctional. Learning, at all ages, should follow a model that more resembles real life (Kahn, 1993). In Kahn's "Seven Principles of Learning" he says that "Knowledge does not exist in an abstract, pure form, nor is it stored in the human mind in such a form. Cognitive and social processes are neither separate nor separable. Rather, people glean knowledge from observations of, and participation in, myriad situations and activities" (p.3).

Learners learn by experiences in a real world, problem-oriented approach and it is on that premise that a design for functional learning for staff, faculty, and students should become reality. Schools using technology, especially those teaching technology, should lead the way in their design and implementation as a model for other schools. The design should have more to do with how students learn, and less with hardware.

What is suggested here is that student-centered learning is favored over teacher-directed learning. This does not mean the teacher is excluded from the learning process. The teacher can act as tutor, coach, or mentor. The teacher directs the individualization and metacognitive skills to help the learner through the learning process (Atkins, 1993). Further, when students are actively engaged in the learning they are more motivated and remain engaged longer than when in a teacher-directed approach. Establishing activities through the use of technology that allow for the learner to be self-directing and problem-centered increases the likelihood of the effectiveness of the learning.

Confronting the Issues

Teachers report little or no use of computers for instruction. Despite the growing numbers of computers in the classroom and the increase in available training, teachers are still finding it difficult to use the computer as part of their classroom delivery of content. Teachers have found their time to be very valuable and scarce (Mollison, 2001). What time is not spent on lesson planning, is spent on grading, and that time not spent grading is administrative time. It is small wonder teachers can't find time to develop new or different instructional materials using technology they either don't have access to or don't know.

However, technology as a resource can help teachers cope with a growing paperwork load. Schools, businesses, and organizations have recognized that if they spend less time on record keeping and preparing materials, they can spend

more time on productive endeavor (Roblyer, et. Al. 1996). Teachers can become more productive as they are trained in the use of technology and can gain quick access to information to help them and their students by meeting individual needs. Areas such as, word-processing, spreadsheets, databases, grade books, graphics, desktop publishing, online-communication, and test generation and scoring are just some of the few technology-based outcomes used to increase productivity.

Using technology can change the way teachers teach. Students need mentors with whom they can have effective dialogue. Approaches to constructive knowledge are full of alternatives. At any one time an individual may not be aware of all the alternatives. A negotiated discourse can enhance the student's capability to be a divergent thinker and more creative in nature. The teacher can play this role of a mentor and manager of this dialogue. The teacher directs the individualization and metacognitive skills to help the learner through the learning process (Atkins, 1993).

Increased communications is one of the biggest changes technology offers classroom teachers. On-line communication between teacher and student, teacher and parent, teacher and teacher, and teacher and information expands the dialog necessary to be effective. Let us not forget that teaching is still a human activity. Technology can offer considerable data, considerable of bits of information, considerable of interesting ideas, but if that information cannot be shared, discussed and used, it is lost. It is through this human interaction that ideas become creative thought and creative thought becomes a new product or service for humanity.

Helping teachers use technology effectively. Instructional Technology is a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication and employing a combination of human and nonhuman resources to bring about more effective instruction. Having said that what contributions has technology made to teaching and learning?

One factor is that i*nstruction can be more standardized.* One section or one class taught by several teachers can have the same thread of knowledge by using technology.

Because of the various elements of color and motion, learning can be *more interesting*. We can go places with video that would be too costly or too dangerous for our students. Yet, they can have the same vicarious experience as being there.

Though the use of computers l*earning becomes interactive*. Students can make choices and respond to those choices.

Learning time can be reduced. Much research has been done in this area. Although there still remains some questions as to specifically why time is reduced, student learn faster when using technology...and perhaps as a result the over all *quality of learning improves*. We find, for example, that teachers take care to develop high quality overhead transparencies and other materials for student use that has been fully integrated into the learning process.

Students have positive attitude toward technology. They simply like using technology. There doesn't seem to be an age restriction on these learners at all levels like using the various types of technology.

Finally, the r*ole of the instructor changes* from the possessor of knowledge to the facilitator of the learning environment. Teachers are free to develop instruction and to spend time with students in small groups, helping the ones who need help and enriching the ones who can absorb more.

A Conceptual Plan

According to John Hortin (1988), technology should be seen as a convenient instructional and informational delivery system for adult education. 'Technology is indefatigable, patient and objective; technology allows for individualization; and it is self-directive and interactive' (p. 217). A teacher's time is more efficiently applied through the use of technology. Technology can address the variability of learners and deliver selective, up-to-date, specialized topics. Technology today has made us reconsider instruction and identified the teacher's new role. One solution toward improving the quality of interactive courseware is to involve teachers in the development process. The solution to the confusion over which strategy to use is to develop courseware that parallels the way teachers teach. Educators need to rethink approaches that have more to do with getting students actively engaged in the learning, like simulations, where the learning grows as the students reasons through and solve each step of the puzzle.

Summary

As teachers apply technology, new ideas will develop and student's use of the technology grows. As students within both traditional and virtual 'classrooms' make greater use of the interactive power of computers (e.g. computer mediated communications the boundaries between traditional education and technology enhanced education are becoming blurred. We can see that technology continues to advance while what we are calling "traditional" instruction has yet to follow. Many classroom presentations are still in the lecture format and have not taken advantage of the available technologies. The gap will be bridged as teachers use the technology to create a student centered learning environment.

Reference

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