Issue and Practices of Electronic Learning

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INTRODUCTION

E-learning (a major subcomponent of the broader term "distance learning") is one of the tools with which education can be delivered at a distance, electronically. However, today e-learning is not just reserved for geographically-dispersed learners, but instead is now widely used on campuses all over the world with students who do meet regularly. There are many definitions and terms used which are often substituted for e-learning, such as "distance education," "distributed learning," "remote education," but those terms today have little in common. For instance, in the 1990's the American Association of University Professors (AAUP) defined distance learning as education in which "the teacher and the student are separated geographically so that face-to-face communication is absent; communication is accomplished instead by one or more technological media, most often electronic" (AAUP, 1999). Although we often thought of e-learning and distance education to be synonymous, they are no more.

A more accurate and contemporary definition of e-learning would allow for the occasional face-to-face encounter between teacher and student, both physically and electronically, along with the requirements of the teacher and student(s) separated at a distance, where technology is needed to bridge that gap. An elegant definition of e-learning might therefore be that posed by Holmes and Gardner (2006): "online access to learning resources, anywhere and anytime".

E-learning implies that the learning is delivered via Internet technology to overcome the barriers of place and time. Today, however, e-learning offers many other important opportunities for the enrichment of teaching and learning through virtual environments for the delivery, exploration, and application of new knowledge. E-learning allows for such things as cost saving, specialization not typically available on a traditional campus, and a platform where students can get training according to their particular learning styles and in a format and time frame suited to their needs.

THE HISTORY OF E-LEARNING

Not so long ago, e-learning was non-existent, and distance learning was of limited interest to only a relatively few. Recently, however, due to advances in technology, e-learning has become an indispensable resource for educators, students, policymakers, and even the corporate world through employee training online. Although distance learning has been around for decades in a variety of formats including mail, telephone, TV, audiotape, and videotape, the Internet has made this non-traditional format of education very popular. As the multifaceted environment of the Internet continues to evolve, new forms of electronic multimedia, along with new telecommunications technologies, have reduced the constraints imposed by geographic location and have made it possible to share information and to learn from such information.

THE ROLE FOR E-LEARNING

There are many categories of students, such as the traditional on-campus student, off-campus student, corporate trainee, and the lifelong learner, and each category is benefiting from the relatively new capabilities of e-learning. Disadvantaged learners and those with special disabilities are a growing part of the group labeled e-learners. A center in New Delhi, for instance, has brought e-learning to more than 2 million blind children (Erdelen, 2003). The European Union estimates that by 2050, 37% of the population in Europe will be over 60, and that a large portion of those people will have failing eyesight and will also benefit greatly from e-learning technologies (EU, 2006).

Knowledge attainment is the ultimate goal for all learners, and it is the role of e-learning to better facilitate that goal. Increasingly, it has become apparent that there are few limits on the subjects to be studied and knowledge to be attained via the Internet. With more than 11.5 billion pages on the Web in 2005 and more then 2.2 million terms in 75 separate languages (Gulli & Signorini, 2005), the resources for e-learners are becoming seemingly limitless. There are, however, many challenges with e-learning. For instance, classroom teachers have traditionally relied on many visual cues from their students to enhance the delivery of educational material. The attentive teacher consciously and subconsciously receives and analyzes these visual cues and adjusts the course delivery to meet the needs of the class during any particular lesson. In contrast, the Web-based teacher has few, if any, visual cues from the students, and the interaction between teacher and student can be very limited compared to a physical face-to-face contact.

Many administrators and policy-makers feel that the opportunities offered by e-learning outweigh the obstacles. The challenges posed by e-learning are countered by prospects to:

1. Reach a broader student audience and contribute to new theories of learning;
2. Enrich the learning experience while taking advantage of the World Wide Web;
3. Meet the needs of students who are unable to attend on-campus classes;
4. Involve outside speakers who would otherwise be unavailable;
5. Link students from different social, cultural, and economic backgrounds; and
6. Cope with a rapidly-expanding and aging population.

THE DELIVERY OF E-LEARNING

Faculty in e-learning environments serve as mentors to their students by assisting with independent learning, including answering questions, directing group activities, providing emotional support, pointing to additional resources, and evaluation of results. The pace at which material is delivered is sometimes broken up into modules so that the students can approach them each differently. The use of modules allows for

the best form of communication for a given situation: synchronous or asynchronous. Synchronous communication in e-learning utilizes a simultaneous group learning environment, whether on a two-way video feed, by instant messaging, or even via voice over Internet protocol (VoIP). Asynchronous communication might be represented in an e-learning setting as when teacher and student are communicating by e-mail where the communication is not immediate. As communication technologies evolve, however, teachers and students will find more ways to communicate in a synchronous fashion (Connick, 1999).

E-LEARNING TECHNOLOGIES

Technology adoption and the effects of technology on the participants are two critical factors that greatly impact the success of an e-learning system. This section focuses on three aspects of e-learning technologies: strategies for technology adoption, issues involved with technology use, and empirical findings.

Technology Adoption Strategies

The most important aspect to consider when determining which of the various instructional technologies to use for e-learning has to do with the desired results, and the potential of a particular technology to reach those instructional goals and outcomes. The key is to focus on the needs of the learners, the requirements of the content, and the constraints faced by the teacher and student. This approach may result in a mix of media, each serving specific needs and fulfilling certain requirements. Reisman, Dear, and Edge (2001) suggested a five-strategy model for the implementation of e-learning systems (see Table 1). The applicability of the five strategies largely depends on the goals of teaching pedagogy, technical capabilities of instructors and students, and the overall institution commitment to e-learning.

When prepackaged courseware is the preferred option for e-learning, Gibbs, Graves, and Bernas's (2001) study offers a list of evaluation criteria of multimedia instructional courseware. Their list includes information content, information reliability, instructional adequacy, feedback and interactivity, clear and concise language, evidence of effectiveness, instruction planning, support, and interface design.

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