Web–Based Learning

James O. Danenberg
Western Michigan University, USA

Kuanchin Chen
Western Michigan University, USA

INTRODUCTION

Web-based learning (a major subcomponent of the broader term "distance learning") is one of the tools with which education is delivered at a distance electronically. There seems to be many definitions, as well as terms, for distance learning, such as "distance education," "distributed learning," "remote education," "online learning" and "Web-based learning," which all may refer to the similar education deliverables. In the mid-1990s, the U.S. Department of Education defined distance education as "education or training courses delivered to remote off-campus location(s) via audio, video or computer technologies" (Lewis, Farris & Levin, 1999). Later in the 1990s, 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).

Today, a more accurate definition of distance learning might 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 used to bridge that gap. There are three common defining components of Web-based or distance learning:

1. The barrier of place and/or time.
2. The goal of education that is being undertaken.
3. The educational tools to overcome the barriers and accomplish the goals.

Web-based learning also implies that the learning is delivered via modern Internet technology. The objective could be of sharing scarce resources with many geographically dispersed learners, or of providing resources to non-traditional learners, those that would not typically attend a traditional campus. The distinction is important when considering the different requirements of the two groups. Besides overcoming the barriers of place and time, Web-based learning allows for a potential cost savings with specialized courses not typically available on a traditional campus. Students can get training according to their particular learning styles and in a format and time frame suited to their needs and schedule.

THE HISTORY OF WEB-BASED LEARNING

Not so long a go, Web-based learning was non-existent and distance learning was of limited interest to only a relatively few. Recently, however, due to advances in technology, Web-based learning has become an indispensable resource for educators, students, policymakers and even the corporate world. Although distance learning has been around for 250 years in a variety of formats (including mail, telephone, television, 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.

THE ROLE FOR WEB-BASED LEARNING

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. Even when tools such as real-time video monitors are in place, the cues from the students are filtered and reaction time altered. It can be difficult to carry on a discussion when spontaneity is distorted by such technical requirements.

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

1. Reach a broader student audience.
2. Handle shortages of certain skilled personnel.
3. Meet the needs of students 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.
6. Cope with a rapidly expanding population.

THE DELIVERY OF WEB-BASED LEARNING

Faculty in Web-based 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 evaluating results. Often, Web-based learning requires a small component of actual face-to-face interaction, so the personal side of education can be preserved and increased.

The pace at which material is delivered is sometimes broken up into modules so students can approach each one differently. The use of modules allows for the best form of communication for a given situation: synchronous or asynchronous. Synchronous communication in Web-based learning utilizes a simultaneous group learning environment, whether on a two-way video feed, on the telephone or face-to-face. Asynchronous communication might be represented in a Web-based learning setting as when teacher and student are communicating by e-mail or by letter. As communication technologies have evolved, Web-based learning teachers and students have found more ways to communicate in a synchronous fashion (Connick, 1999).

WEB-BASED LEARNING TECHNOLOGIES

Technology adoption and effects of technology on the participants are two critical factors that greatly impact the success of a Web-based learning system. This section focuses on three aspects of Web-based 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 Web-based 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 implementing Web-based 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 Web-based learning.

A study by Gibbs, Graves and Bernas (2001) offers a list of evaluation criteria of multimedia instructional courseware for when pre-packaged courseware is the preferred option for Web-based learning. 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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