INTRODUCTION

In this article, we examine some of the issues surrounding the use of technology and how it may impact the future of university teaching and organizational training. We conclude that educators need to become proactive in the development and use of technology in the teaching process. To this end, and in an effort to address the concerns of learners and educators in the climate of online learning, we developed a framework - the Demand Driven Learning Model (DDLM) (MacDonald, Stodel, Farres, Breithaupt, & Gabriel, 2001). This framework is a timely response to rapid technological advances that may affect education and provides both support and guidance for educators in an effort to ensure the most serious challenges of e-learning are anticipated and met in practice. The development of a successful and comprehensive model provides a foundation for the design of future online courses and programs and will ultimately set the quality standard for e-learning.

THE FUTURE OF EDUCATION

Higher education has been shaped by debate among academics, industry experts, students, and politicians. It is undeniable that, in recent years, budget restrictions and changing student enrollments have forced universities and industry to become more efficient. This context requires academic institutions and training organizations to improve in specific areas, such as: quality of teaching; costs; marketing of programs; access and equality; and sensitivity to cultural preferences in topic and mode of study (Duderstadt, 1999; Wills & Alexander, 2000). The development of the World Wide Web (Web) as an expanding multimedia communication system has increased and diversified delivery mechanisms of quality education and is challenging common conceptions of the teaching-learning process (Bonk & Cummings, 1998).

Driven by the forces of our knowledge-based economy, the needs and characteristics of busy working adults are changing with regard to educational and training needs. There is an opportunity to develop and deliver courses and programs that will attract adult learners whose needs are not currently well served by post-secondary education and training programs (Moe & Gay, 1997).

Advocates for the use of new educational technologies have asserted that effective learning with technology must be driven by sound pedagogical principles, involve critical thinking, and provide a real community for the learners. These criteria can be, and have been, realized in an online environment (MacDonald & Thompson, 2004). With the advancement and increasing availability of technology, e-learning has become rapid, effective, flexible, and convenient. In addition, technology has provided the immediacy and range of interaction comparable to face-to-face learning. The conservative proponent may confidently describe online learning as a viable alternative to conventional teaching at universities (Haihuie, 2000).

Not surprisingly, some faculty members at traditional universities and trainers in organizations have been ardent defenders of their culture and traditions. Some claimed that certain barriers to change are significant and, as a result, have resisted implemen-
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Transition of new technologies (Garrison & Anderson, 2000). Others argue a misfit of technological rhetoric within the realities of educational settings. Still more have complained about a lack of professional development opportunities and support to learn and gain confidence with these educational technologies. Furthermore, questions have been raised regarding the pedagogical quality of educational technology (Duderstadt, 1999; Fox & Herrmann, 2000). Some educators suspect the online environment isolates the learner. Their concern is that online learning is neither personal nor interactive and is consequently less effective than face-to-face instruction. However, Thompson and MacDonald (2005) have found that by paying attention to detail in design, developing relevant exercises and assignments, and providing attention and support during delivery, online learning can be both interactive and personal. Moreover, some researchers are finding that with proper design, a community of learners can be established in both online university and training environments (MacDonald & Thompson, 2004, 2004b; Thompson, 2003). Conversely, it may be fair to ask if an environment where one professor lectures or presents slides to 100-1000 undergraduate students in an amphitheatre is, in fact, an example of personal or interactive instruction.

Our assertion that there is a need for a new learning model for adult learners began as follows: on-campus learning is generally the first choice of program delivery for the population of students aged 18-22 years. While on-campus programs do not necessarily provide richer learning experience, campus social life is a valuable life experience. Similarly, face-to-face training is preferred by many working adults if it is offered during work hours or if they are provided with release time or additional pay. However, with a sliding economy, time away from work and travel money to attend training has become less common. Conversely, the market targeted by e-learning has been variously defined to include the following university and training groups:

- working adults who do not have the desire or resources to attend on-campus programs or who want to complete their training while on the job or from home;
- adults in jobs where their employers (e.g., the high technology sector; healthcare) cannot afford to provide long leaves of absence;
- adults in third world countries or isolated or rural communities who do not otherwise have access to brick and mortar institutions;
- single parents or economically disadvantaged adults who have to work full-time;
- working adults who travel too frequently to attend regular programs;
- undergraduate learners who need or want an alternative to on-campus programs for economic, social, personal, or practical reasons.

For these individuals, higher education and training must be made more accessible, convenient, flexible, and effective. In order to deliver effective online programs, educators need to become proactive in the development and use of technology in the teaching process. Initially, educators must accept that the education enterprise, staff structure, and roles and responsibilities are changing. An active role is essential, whereby educators “dictate what should be developed for a particular instructional event, environment or tasks” (Jegede, 2000, p. 46). Duderstadt (1999) underlines the benefit of this stance: “Those institutions that can step up to the process of change will thrive” (p. 1). Garrison and Anderson (2000) argued that the real competitive threat for traditional universities is not emerging “virtual” universities, but other “credible, established universities that have learned to use technology to meet student (consumer) needs for meaningful learning opportunities” (p. 32).

WORKING ADULT LEARNERS DEMAND CHANGE

Online courses are evolving to meet and create new market demand. This expanded market allows educators to better serve working adults and those geographically isolated. The tension between improving employee skills and maintaining talented staff has led employers in many industries to endorse, fund, design, or deliver alternative educational and training programs. E-learning affords the high levels of interactivity, flexibility, information access, and communication needed for busy adults to learn (ASTD, 2002; Khan, 1997; Mann, 2000).

E-learning is beginning to hold a special appeal for busy adults working in understaffed organiza-
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