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ABSTRACT

New learning technologies present many challenges for adult educators. They have great potential for achieving many underlying goals of adult education; however, like any tool, they must be used reflectively and viewed through a critical lens. The challenge is to use learning technologies in ways that support learning and respond to the needs of the learners. In considering and choosing learning technologies, the emphasis should always be on learning, with technology playing a supporting role. Learning technologies are not neutral. Not all learners may have access to a technology and technologies are shaped by the society that produced them, with underlying assumptions related to gender, social class, and culture. As to whether new learning technologies contribute to marginalization, those who are most technologically savvy may have the most successful learning encounters, but technology also affects participation in ways that cannot be fully predicted or understood. Learning that is constructivist in nature is not dependent on information/communication technologies or even necessarily made more obtainable by them. (Contains 17 references.) (YLB)

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Learning Technologies in Adult Education

by Susan Imel

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Any tool "designed to extend a learner's capacity for effective action and that requires skill and certain strategies to use efficiently" is a learning technology (Burge 2001, p. 146). A well-structured face-to-face group discussion, a pencil, and print materials fit this definition as do newer tools such as web-based conferencing (ibid.). One of the greatest myths surrounding learning technologies is related to what they are. Because of the term *technology*, it is frequently believed that learning technologies are instructional devices that make use of computers, the Internet, or some other type of electronic technology such as video and television.

Newer learning technologies are changing the shape of the landscape in adult education, however. Distance education is burgeoning and web-based training opportunities abound. In many circles, learning technologies have been adopted uncritically. This *Myths and Realities* explores beliefs about the newer learning technologies that are being used to extend and enhance adult learning and education.

Learning or Technology?

For many, the term *technology* "invites a tools-first emphasis" (Olgren 2000, p. 7) when in fact the real issue is how to choose and use any technology in a way that will enhance learning (Ginsburg 1999; Wagner 2001). The question should not be whether to use technology simply because it is available but rather whether it can be used to create learning opportunities that were impossible or impractical without it; a related question is how new learning technologies can be used appropriately in conjunction with traditional teaching and learning tools (Ginsburg 1999; Phillips and Kelly 2000). New technologies have an immediacy about them that is seductive and that may make asking questions about their uses as teaching and learning tools secondary (Cavanaugh et al. 2001).

Although frequently thought of as merely a delivery system, the role of technology should be to create an environment that facilitates learning (Olgren 2000). No amount of hardware and software can substitute for a poorly designed learning experience (Wagner 2001). In considering and choosing learning technologies, the emphasis should always be on learning, with technology playing a supporting role. Furthermore, no single technology is the answer to all teaching and learning needs. "Current pressures to put all the course materials on the web, for example, is too simplistic an answer to very complex questions about learning style differences, the kinds and levels of learning objectives and outcomes, the learning resources best suited to those objectives, the communications infrastructure in place or needed, and limits to the money and staff skills available" (Burge 1999, p. 2).

Learning Technologies Are Neutral?

Another myth surrounding learning technologies is that they are neutral, that is, they are separate from the social structures in which they are designed and they have no influence on the teaching and learning environment (Miller 2001). Although questions about which technologies to choose to accomplish "pedagogical and intellectual purposes" are important, "the larger question of the imperatives of the technology itself and how these shape what we do, how we think about ourselves, and what we do" should not be ignored (Cavanaugh et al. 2001, p. 68). In many instances, the introduction of new technologies has tended to reinforce rather than displace existing power relationships. Although information technologies have the potential to create democratic teaching and learning situations, the logic used to design many is hierarchal and linear. The experts who structured the technology may drive the teaching and learning experience rather than the adult learners and the technology may reshape the learning environment in invisible ways (ibid.; Kasworm and Londoner 2000). Every learning technology has biases that shape how it conveys information and supports interaction; print, for example, is linear and can support a well-structured argument whereas video may convey emotions or movement (Burge 1999). Understanding these inherent biases is an essential part of using learning technologies effectively.

Because the term *technology* is often used to refer to hardware and software, it is not seen as problematic. This narrow definition of technology, however, ignores the social, political, and economic realities associated with technology, including the fact that new technologies are viewed as a key feature of a learning society in which all learners may study what they want when they want (Miller 2001). This perspective ignores the fact that not all learners may have access to or be able to get a technology and that technologies are shaped by the society that produced them, with underlying assumptions related to gender, social class, and culture (Cavanaugh et al. 2001; Miller 2001).

New Learning Technologies Contribute to Marginalization?

Closely related to questions about the neutrality of learning technologies is that of their impact on access and equity issues in adult learning. Do all learners, for example, have equal opportunity for access to new learning technologies, including computers and the Internet? Are they being used in ways that contribute to learning environments in which power is shared by all? Does the use of new learning technologies disadvantage certain groups based on gender, social class, and culture? According to Miller (2001), a polarity exists in the academic literature on technology and learning, with some viewing it optimistically and others maintaining that increased use of technology will contribute to further inequalities in education.

Evidence in the literature suggests that neither the optimistic nor pessimistic perspective has been borne out. Lauzon (1999) maintains that in face-to-face learning situations, "those who exist on the margins may have their ideas appropriated by those from the centre which is in itself disempowering" (online, n.p.), but in written, online discussions a record exists of who said what when. In addition, multiple perspectives are often lost in face-to-face discussions (ibid.). In a study (Davis and Ralph 2001) of an online learning activity, one student found speaking out electronically to be much easier than speaking out in face-to-face encounters with the same group but another seldom participated because he wanted to be able to control the message. For some participants in online work, the technology itself inhibits or gets in the way of learning (ibid.; Daley et al. 2001). These experiences suggest that those who are most technologically savvy may have the most successful learning encounters but that a technology also affects participation in ways that cannot be fully predicted or understood.

New Learning Technologies Promote Constructivist Learning?

One of the prevailing myths about information/communication technologies, those tools that constitute the bulk of the new learning technologies, is that they promote constructivist learning. Constructivist learning theory, in which individuals actively construct mean-

ing by interacting with their environment and incorporating new information into their existing knowledge, is congruent with much of adult learning, including self-direction, transformative learning, and situated cognition (Merriam and Caffarella 1999; Wonacott 2000).

Learning that is constructivist in nature is a desirable goal, but it is not dependent on information/communication technologies or even necessarily made more obtainable by them (Wessel 2000). "Meaning construction is not reserved for high-tech, multimedia, project- or problem-based experiences. It happens all the time as people try to make sense of their environments, and of information presented to them" (Wilson and Lowry 2000, p. 81).

Although information/communication technologies can promote learning that is constructivist in nature, like any other strategy, they can result in ineffective learning (Wilson and Lowry 2000; Wonacott 2000), and both teachers and learners can affect the outcome. In a study of online collective adult learning built upon a constructivist design, participant learning was strongly influenced by technology, including individual attitudes and perceptions of technology (Daley et al. 2001). The researchers concluded that students' attitudes and perceptions were of paramount importance and will affect their learning; they recommended that instructors spend time and energy developing the learning climate. Another study of teacher beliefs about the role of computer technology and its role in promoting classroom learning found that teachers used technology in ways that were consistent with their underlying beliefs about educational aims, teaching, and learning (Dirkx and Taylor 2001). None of the teachers in this study used computers to promote constructivist learning because they all had beliefs and practices that were consistent with the transmission and reproduction views of teaching and learning (ibid.).

Conclusion

New learning technologies present many challenges for adult educators. They have great potential for achieving many of the underlying goals of adult education; however, like any tool, they must be used reflectively and viewed through a critical lens. The challenge is to use any learning technology in a way that supports learning and responds to the needs of the learners.

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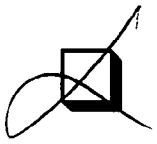

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