Adult Education and Adult Learning Processes with ICT

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INTRODUCTION

"Adult education"—involving planned and intentional learning opportunities that enable adults to acquire skills and knowledge they need to participate fully in the economic and social life of their community—takes place in both formal and informal settings, and provides clear pathways for learners to achieve their goals and objectives (Recommendation for action, 2004). Adults would like to learn in order to improve their qualifications and to bring their skills up to date for a new line of work. Adults would also like to learn because of the rapidity and constancy of change in society and because of life-long learning dealing with changes in lifestyles or value systems.

Brookfield (1995) has identified four areas as representing unique and exclusive adult learning processes: (1) *self-directed learning* (which focuses on the process by which adults take control of their own learning—in particular, how they set their own learning goals); (2) *critical reflection* (which is the idea of the decade for many adult educators who have long been searching for a form and process of learning that could be claimed to be distinctively adult); (3) *experiential learning* (which is based on the notion that "experience" is the adult's continuing process of evaluating experiences); and (4) *learning to learn* (which is the ability of adults to learn how to learn to become skilled at learning in a range of different situations). Brookfield has further noted that one of the trends in the study of adult learning that emerged during the 1990's, and that promises to exercise influences into the 21st century, might be the ways in which adults learn within the systems of education (distance education, computer assisted instruction, and open learning systems, for instance) that are linked to technological advances.

BACKGROUND

The "new economy" implies a society in which information communication technology (ICT) is changing the nature of the workplace and contributing to more efficient and productive practices geared toward enhancing the equality of both products and services (Brown, 2003). As the new economy increasingly requires people to learn new knowledge and skills in a timely and effective manner, the advancement of computer and networking technologies are providing a diverse means to support human learning and cognition in a more *personalized*, *flexible*, *portable*, and *on-demand* manner (Zhang, Zhao, Zhou, & Nunamaker, 2004). The new economy—which is an increasingly "global" economy—"is a term that was coined in late 1990s to describe the evolution of the United States from an industrial/manufacturing-based economy into a high technology-based economy, arising largely from new developments in the Internet, telecommunications, and computer sectors" (Wikipedia, 2006, ¶1).

Adult education has emerged as an increasingly important component in education policy and planning; the 1980s and the 1990s were a period of rapid development in adult vocational education and as a result of the structural change in industry and the labor market, "life-long learning" has become an important principle underpinning education policy (Ministry of Education Finland, 1999). Open and online education is a growing force in life-long learning. Due to the rapid development of Web-based technologies, increasing bandwidth, decreasing costs, and widening access, online programs of distance education are becoming increasingly popular teaching strategies for higher education to adopt (Townsend & Wheeler, 2004).

Adults learn in many ways—both in academia and in the workplace—through repetition and reward (behaviorism), through the help of mentors (social learning theory), through building upon previous experiences (cognitive theory), and through meaningful

and relevant experiences (andragogy and humanistic theory): "Adults, for whom life-long learning is a fact of life, are commonplace in college classrooms…often bring a wealth of real-life experiences with them to the classroom, experiences that need to be recognized and integrated in the learning process" (Brown, 2001, p. 3). ICT, especially the Internet, is an indispensable *tool* or *environment* to enable adult education to face its new practices and challenges. The interrelationship between knowledge and skills and its impact on what adult learners bring to the classroom and then what is added to that and taken away is what lies at the root of higher education (Motteram, 2005).

NEW PRACTICES OF ADULT EDUCATION AND ADULT LEARNING PROCESSES WITH ICT

A paradigm shift is taking hold in American higher education, which includes the shift from "institutions of instruction" to "institutions of learning," creating powerful learning environments, improving the quality of the exiting students, and viewing faculty as primarily designers of learning methods and environments (Goetz, 2004). The current shift towards computer-mediated teaching and learning does place college and university professors under enormous pressure to gain expertise not only in emerging new media, but also in the innovative pedagogical approaches (Creanor, 2002): "The acquisition of empathic and pedagogically appropriate skills for the online environment must now come high on the list of teaching competencies" (p. 57).

Adult Learning Processes and ICT

As previously stated, self-directed learning, reflective learning, experiential learning, and learning to learn are major areas representing the post-war preoccupations of adult learning researchers; each area has its own internal debates, yet the concern and interest of those working within each of them overlap significantly with those of the other three (Brookfield, 1995).

Self-directed learning. There are many synonyms used for computer-mediated learning (such as distributed learning, e-learning, distance education, and online learning). Online learning has obvious disadvantages (e.g., the impersonal nature of learning, and technical problems including breakdown in multimedia software and insufficient processor speed) but has advantages (e.g., flexibility in length and time of study, automated assessment and feedback, and discussion between remote users, which facilitate *self-directed learning*) (Medford, 2004).

Based on the notion that e-learning can empower adult students' ownership and self-directed learning, Lim (2004) defines five stages of the inquiry-based learning process: (1) Ask (learners articulate their own problems or questions); (2) Plan (learners design their problem-solving strategies within a certain time frame); (3) Explore (learners explore resources for solving problems using their background knowledge); (4) Construct (learners synthesize resources and provide solutions); and (5) Reflect (learners discuss the implications for further refinement). An important principle of life-long learning is the ability for *self-direction* (Flores & Flores, 2003).

Reflective learning. One critical element in the transformation of experience into learning is the process of reflection; the development of a "portfolio," due to its very nature, requires adult students to reflect critically on the *what's*, *how's*, and *why's* of their professional and personal learning so that they may describe and explain it to faculty evaluators (Brown, 2001). As Brown further describes, the portfolio can promote holistic learning by serving as a reflective bridge between the learner, the workplace, and the academy (see Figure 1). Learning and knowledge acquisition occur neither solely in the classroom nor exclusively in the world of life experiences or the workplace : "Holistic learning requires the integration of knowledge from multiple settings, and belief that knowledge is forever changing and ongoing throughout one's life. Learning from experience requires both reflection and reflexivity" (Brown, 2001, p. 10).

Electronic portfolios (e-portfolios) are increasingly popular now; and, an important direction for e-portfolios is that created with software tools found on computers or Web-based storage systems generally accompanied by data management systems that allow assessment of portfolio data (Gibson & Barrett, 2003). Web-based assessment systems support consistent, secure storage and aggregate reporting of assessment information. E-portfolios enable a powerful means for using it as a platform for linking with future learning; and additional pages can be added (e.g., additional artifacts can be