Chapter 84
New Perspectives of Andragogy in Relation to the Use of Technology

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ABSTRACT

This chapter examines technological factors that influence the conditions and processes of adult learning, and how adult educators can deal with those changes effectively. Technology can reinforce and enhance adult learning, providing a learning environment with tools and resources that the learner can explore and control, thus fostering more independent, adult-centered learning. Adult learning changes because of the need to learn how to use technology tools, the opportunity for expanded access to resources, the variations in designing and experiencing learning experiences, and the expanded opportunities to engage with these resources and with other learners. Several issues contextualize the realities and challenges of adult learning as impacted by technology: workplace learning and learning organizations, informal learning, distance education, globalization, the Digital Divide, and older adult learners. Emerging trends are also mentioned.

1 INTRODUCTION

Technology permeates today's world: in the workplace as well in daily life. In order to succeed in many societies, people need to learn to use technology. Because technology is ever-changing, the need for lifelong learning becomes even more apparent. Relative to these realities, how is adult education impacted? Has the nature of adult learning itself morphed because of technology? This chapter examines technological factors that influence the context and processes of adult learning, and how adult educators can deal with those changes effectively.

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2 TECHNOLOGY'S IMPACT ON SOCIETY

Technology has existed for thousands of years, from the invention of the wheel onward. Technology under girded the Industrial Revolution. Today's technology is marked by its electronic, digital nature. As such, digital technology permeates society at the daily level as well as on the governmental level. Indeed, technology has become so ubiquitous that it can be overlooked. Even in developing countries where the main issue is survival and life appears to be timeless, technology can impact them: technology-based research informs agricultural practices, local products reach remote distances because of technological logistics, and natural disasters are addressed more quickly because of technology-based communication and coordination. Global issues have the potential to be heard immediately because of telecommunications, and the financial world would shut down if it were to be cut off from technology for a week. Even if they are unaware of technology, adults have to cope with its impact.

Information and Communication Technology Literacy (http://www.ictliteracy.info/), a web portal developed by a consortium of business leaders, educators, and governmental policy-makers exemplifies the broad-based support for digital literacy. The consortium states: "Digital literacy is about education and workforce preparedness in a competitive global economy. It is also key to a full and successful life in the 21st century" (http://www.ictliteracy.info/About-us.htm, p. l).

2.1 Economic Issues

Both in terms of consumerism and production, the economics of technology impact adult learners. Products flow around the world via technology, online shopping has become a huge market: brick-and-mortar stores offer cyberspace "annexes," online stores enable adults with special needs to shop privately without embarrassment. The convergence of digital entertainment enables people to choose the format, time, and physical space in which to enjoy the arts conveniently. More than ever before, physical and virtual products depend on technology, and consumers' access to them.

Technology's role in production has certainly expanded with the advent of digital documents, from photography to music, from hobbies to governmental policies. Furthermore, globalization and post-industrialism has given rise to the Knowledge Society where intellectual capital has replaced material capital. Technology and service jobs now dominate. "Knowledge is innovation, innovation is quality, and quality is knowledge management" (Gilbert, 2007, p. 4). Medicine exemplifies this change as patient diagnosis and treatment often depend on digital data capture and analysis. The Human Genome Project demonstrates how distributed knowledge can lead to significant discoveries. Collaborative technology plays a central role in many economic realities, drawing upon a broad constituency's ability to connect.

As a result, the need for more technology specialists and engineers has gained crisis status in the United States. Technology industries are resorting to outsourcing of technology jobs to experts overseas and lobbying for immigration requirement waivers in order to recruit qualified employees. Even beyond the technological industry, the message is clear: employers expect their workers to use technology, to use information, and to communicate effectively. As early as the 1991 SCANS (Secretary's Commission on Achieving Necessary Skills) Report of the U.S. Department of Labor, the need for employees to use technology was mentioned. Even job notices and applications require Internet connectivity and the ability of the individual to handle digital documents and applications. With the advent of Web 2.0, the importance of social networks of consequence has grown. By using technology to share and advance knowledge, companies stay competitive (Nonaka & Takeuchi, 1995). As a result, adults who are bypassed by technology are