

Chapter XXX

Wireless Technologies and Multimedia Literacies

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ABSTRACT

In this chapter, the author analyses advances in wireless technologies and the associated pedagogical shift from traditional to multimedia literacies in K-12 education internationally. The premise is that multimedia, made more accessible with mobile devices, gives students and teachers greater access to the Internet and interactive software for research, communication, and presentations. In particular, the planner, voice, color, graphics, video and text messaging features of smart phones and ultramobile computers, which have been used socially by students of the “Net Generation,” are now being used educationally by administrators and teachers to create media rich schools. With multimedia literacies, the focus is on inquiry, collaboration and project based learning. However, effective integration of wireless technologies in the literacy-based curriculum is dependent on adequate resources and appropriate professional development opportunities for teachers in both economically developed and developing nations.

OVERVIEW

In 2006, Garland asserted that “Language acquisition and mathematics skills are the core elements of traditional views of literacy. In the new millennium, technology has become another basic skill for K-12 students across the globe” (p 308). The use of information and communication technologies in learning is commonly referred to as **digital literacy**. The European Union e-

Learning Program is evaluated by Uzunboylu (2006), Chair of the Department of Computer Education and Instructional Technologies at Near East University in Cyprus, who further defines **digital literacy** as “the knowledge and skill that all persons need for professional development and for active participation in a technological-based society” (205-206). Changes in social uses of technology, such as the proliferation of hand held wireless devices in both economically advanced

and developing nations, are preceding the use of these tools for instructional purposes. In 2008, the concept of **digital literacies** were further defined by the co-editors of the *Journal of Adolescent & Adult Literacy* (JAAL) as "...digital media, new technologies, new literacies, or New Literacy Studies (popularly abbreviated to NLS); or things that digitally literate people produce (blogs, wikis, podcasts); or activities that digitally literate people can engage in such as digital storytelling, social networking, and webpage creation." (O'Brien and Scharber, p 66-67). However, the achievement of **digital literacy** skills may be more problematic than the attainment of linguistic or mathematical literacies because of the need for access to multimodal applications specific to the newer **wireless technologies**.

Teachers and school administrators are beginning to use emerging **wireless technologies** in ways that the author of this chapter defines as **multimedia literacies**. Educators in the United States have been using digital data to measure student achievement in standardized tests for a number of years. With the inception of **digital portfolios**, teachers are becoming skilled in using the latest hardware and educational software to facilitate student learning on levels beyond traditional ideas of paper and pencil tools for literacy (Garland, 2006). In 2007, the editors of Education Week reported in "A Digital Decade" that American schools are engaged in this shift from digital to **multimedia literacies**, "Today, nearly all schools can get online, and the percentage of instructional computers with high-speed access hovers around 95 percent...Interactive software applications such as blogs, podcasts, and social-networking sites are letting students and teachers easily post their own writings and multimedia presentations on the web" (p 8). Virtual education is expanding to include not only online courses for students, but also professional development opportunities for teachers and administrators in the more technologically advanced schools.

Until about 2004, people across the globe were accessing the Internet mainly through desktop personal computers and early laptop and Personal Digital Assistant (PDA) models. The mobile Internet access devices (MIADs) which have proliferated the public market since then have given rise to other **multimedia literacies** in educational institutions. According to the University of Barcelona's Gos (2007), today's youth is comfortable in the "virtual world" of **wireless technologies**, and their interactions with new MIADs are changing ways of socializing and learning. Educators, especially those in Europe, are designing learning environments with user-centered, interactive multimedias in order to improve learning for the "**Net Generation**" (Skiba and Barton, 2007).

ADVANCES IN WIRELESS TECHNOLOGIES

In 2006, Garland stated that PCs were vital to the educational market, especially the Compaq Tablet PC TC from Hewlett Packard and the Acer TravelMate c110 convertible Tablet PC. This is no longer the case because of the increase in Apple's more user friendly laptops and the surge in **smart phones** with PC, PDA, and Internet capabilities. Until the 1990s, Apples were the main computers used in United States schools, until they were surpassed by the cheaper Dell computers. By March, 2008, Fisher-Cox reported that Apple exceeded Dell as the biggest supplier of portables to educational institutions in 2007, possibly because of its more "user-friendly," interactive capabilities and professional training opportunities for teachers. Apple's iPod, iPod Touch and iPhones are popular wireless devices in K-12 schools with educational applications central to this discussion.

Hardware

There are still two types of **wireless technology**: "RF" and "Bluetooth." "Radio frequency (RF) is

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