Chapter 19
The Dragon in the School’s Backyard:
A Review of Literature on the Uses of Technology in Urban Schools

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ABSTRACT

The introduction of technology into classrooms during the 1980s was heralded by many as the dawn of a new era in American education. Proponents argued that technology had the potential to fundamentally transform the nature of teaching and learning. However, over time, this dream became a nightmarish reality. Likewise, educators concerned about the chronic underachievement of urban learners often fell prey to the allure of technology as a tool for reversing the historical influences of poverty, discrimination, inequity, chronic underachievement, and lack of opportunity. However, twenty-five years after the introduction of the computer into the classroom, many of the expectations associated with technology in education remain unrealized. This chapter hopes to discuss some of the issues and trends associated with technology adoption and usage at urban schools.

INTRODUCTION

The introduction of microcomputers into classrooms during the 1980s was heralded by many as the dawn of a new era in American education. Proponents argued that technology had the potential to fundamentally transform the nature of teaching and learning (Papert, 1980; U.S. Congress, Office of Technology Assessment, 1988). However, over time, it has become apparent that it is far easier to acquire hardware, software, and Internet access (Vonderwell & Peterman, 2008; Bailie, 2007; Javeri, 2007; Techehaimanot 2006; Becker, 1991; Dividing lines, 2001;) than it is to
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capture the potential of technology in significantly meaningful outcomes (Cuban, 2001). Likewise, educators concerned about the chronic underachievement of urban learners often fall prey to the allure of technology as a tool for reversing the historical influences of poverty, discrimination, inequity, chronic underachievement, and lack of opportunity. However, twenty five years after the introduction of the computer into the classroom, many of the expectations associated with technology in education remain unrealized. In this chapter, we discuss new technological horizons for urban learners and highlight issues relating to the trends of technology in urban schools. Like the sleeping dragon of mythology, the power of technology lies dormant until provoked, then once provoked, one becomes witness to its awesome power and capabilities.

The Socioeconomics of Technology in the Urban Environment

Over the past 15 years a considerable amount of research has been devoted to socio-cultural disparity in technology availability and use in the mathematics (Becker, 2001; Garofalo, 1999; Javeri, 2007; Means, 2001; National Center for Educational Statistics, 1995; Manoucherhri, 1999; Owens and Waxman, 1993, 1994; U.S. Department of Education, 1995). Studies conducted by Vonderwell & Peterman (2008), Bailie, (2007), Javeri, (2007), Teclehaimanot, (2006), Colombo, Stigler Bales, Atkins, & Carroll, (2005), Becker (2001) and Coley, Cradler & Engel (1997) found students from higher income families have been found to use computers in school and in their homes more frequently than students from lower-income families. Students of color from urban schools have also been found to have less access to computers compared to Anglo-suburban students (Bailie, 2007; Javeri, 2007; Teclehaimanot, 2006; Brantley-Dias, & Calandra, 2005). More recently, lower SES schools are only half as likely to have high speed internet compared to high SES schools (Advanced Telecommunications, 1997). Consistent with this idea of access are the issues within the digital divide itself. Within the past decade, a growing body of evidence supports the ever-widening technological gap among members of society, in particular children and the elderly (NTIA 2004), with a important emphasis on urban schools with the inner cities. The groups identified who lack access to information and technological resources include people of color, specifically African American and Hispanic Americans, those who are poor and of the working class, individuals of low-income, those who possess less than a high school level of education, children of single parents, and residents of inner-cities (NTIA, 2004). Quality access is key in this issue.

Within the past decade, a growing body of evidence supports the ever-widening technological gap among members of society, in particular children and the elderly (NTIA 2004), in particularly urban school environments with the inner cities. This “Digital Divide” has become a leading economic and civil rights issue. The Digital Divide is referred to as a social/political issue encompassing the socio-economic gap between communities that have access to computers, the Internet, and other information technology related services and those who do not. The term also refers to gaps that exist between groups regarding their ability to use ICT’s (Information and Communications Technologies) effectively and the gap between those groups in urban environments that have access to quality, useful digital content and those that do not. Disparities in computer and information technology use can be found among individuals in rural and urban locations, with the division drawn upon socio-economic lines. This trend indicates that those who have the means only become more information-rich, while those who are poor and of the working class, mostly those in the inner city/urban environments are lagging even further behind. The groups identified who lack access to information and technological resources include: minorities specifically African American and His-
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