Reexamining the Digital Divide: Aesthetic Choice and Tech-Nos

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INTRODUCTION

The concept of the "digital divide" refers to perceived differences in opportunity and achievement caused by economic and social disparities that limit access to technology. In general, the concept represents that as technology advances, some groups within society gain greater access to more efficient technology while other groups that are unable or unwilling to participate in the use of technology are left behind. This lack of participation in the digital world is considered to place these individuals or groups at a disadvantage relative to their more connected peers. The term "digital divide" also describes information technology disparities between nations and technical accessibility disparities within smaller societal groups. Although this issue has been researched for over a decade, both the concept and proposed solutions to problems related to technology access are controversial. As the concept of a digital divide moves beyond economic issues, conflicts between technology and aesthetics are emerging as potential factors in the debate over the adoption of new technologies.

BACKGROUND

The term digital divide developed in the early 1990s and was popularized in a series of studies by the National Telecommunications and Information Administration that examined telephone and computer usage (NTIA, 1995, 1998, 2000, 2002). The first of these studies "Falling Through the NET: A Survey of the 'Have Not's' in Rural and Urban America" (NTIA, 1995), described disparities in computer and telephone access by age, race, geographic location, and income. In general, it was found that individuals who lived in central cities or rural areas, were less educated, were members of a minority group, and had lower income levels were less likely to have access to technology resources than individuals who were Caucasian, were better educated, and who enjoyed higher incomes. This report influenced a series of studies that focused on identifying who had access to technology and who did not. Technology use was examined in terms of income, geographic location, gender, race, education, and age.

Income

Initially the cost of computer equipment and Internet access were significant barriers to the participation of lower income groups in the digital economy; however, the problem proved to be more complex than counting computers since computer ownership and computer use are not equivalent (NTIA, 2004). Although the cost of computers has decline in the last ten years, associated costs such as Internet subscription fees can still be a burdensome cost for low income families. Many individuals who access computers use resources available at schools, workplaces, and public access points such as libraries. For all ethnic groups, computer ownership is likely to increase as income increases (Hoffman & Novak, 1998).

Lower income individuals are more likely to use computer resources for seeking specific information and as an aid in seeking employment (NTIA, 1999). Individuals in the lower income levels are more likely to access technology at a public resource center such as a library or school (NTIA, 1999). Individuals who have access to computers in their homes are more likely to use computers as a recreational device. For all users, e-mail is the most common activity engaged in online (NTIA, 1999, 2000, 2004).

Computer access outside the home is an important resource for many users and school-based computer access is an important introduction to information technology. A little more than 8% of the population lacks Internet access at home and uses Internet services

at another location and 75% of these users access the Internet at least once a week (NITA, 2004). Although there were initial differences in computer access in certain geographic areas and in poverty areas, these differences have not existed since 1999 (Williams, 2000). According to Wells and Lewis (2006), by 2005, nearly 100% of public schools in the United States had Internet access and 97% of these schools had broadband connections. Ninety-four percent of this access was in instructional environments (Wells & Lewis, 2006).

Geographic Location

Geographic location affects the quality and cost of technology recourses. Historically rural individuals were less likely to use computer technology than urban individuals because supplying information technology to sparsely populated rural areas was not economical (Malecki, 2003; Parker, 2000). Rural residents still lag behind urban residents in Internet use. Rural residents have fewer choices for Internet connection types and were more likely to be older and to have lower incomes than urban Americans, characteristics that are common in late adopters of information technology (Bell, Reddy, & Raine, 2004; NTIA, 2004).

Social culture may play a part in the extent and rate of use of information technology. Bulik (2006) notes that rural users lack the social peer pressure that may motivate urban users to adapt new technologies. The relevance of the technology is an important participation factor for these users. Once rural users connect to the Internet they were found to be quicker than other groups to use the Internet daily (Bell, Reddy, & Raine, 2004).

Gender

Although there has been a significant number of studies examining the role of gender as a factor in computer ability, early impressions that females were at a disadvantage in the digital age has not been supported by more recent work. What gender differences exist appear to be attitudinal rather than skill based (Durnell & Haag, 2002). In a controlled study that tested the ability of users to effectively and efficiently use search engines to retrieve specific information, no gender differences were found (Hargittai, 2002). Women are less likely to discuss their computer activities than men and are less familiar with computer terminology than men

(Enochsson, 2005). Internet usage rates are similar for both men and women with women surpassing men in Internet use in August of 2000 (NITA, 2000).

It is clear that males and females use technology in different ways. According to Fallows (2005), men are more likely to use the Internet for recreation and are more confident in their computer abilities and are interested in technical advances. Women are more likely to use the Internet as a communication tool and to research topics of personal interests such as religion or health. Women between the ages of 18-29 are more likely to be online than their male peers, as are African-American women (Fallows, 2005).

Ethnic Groups

When controlled for household income level, Asians lead all ethnic groups in the percent of households online; they are followed by Hispanics, Caucasians, and African-Americans (Walsh, Gazala, & Ham, 2001). Income for all groups is highly related to computer and Internet access. In families that earn above $75,000 a year, computer use and Internet access is high for both African-American and Caucasians (NTIA, 2004). As income levels decline, differences between ethnic groups is significant even when income level effects are controlled. Currently 61.8% of all American households own computers and of these households 87.6% have Internet access (NTIA, 2004).

Although African-Americans lag behind other ethnic groups in using Internet technology, (NTIA, 2000), African-Americans who use the Internet are more highly educated than other user groups. Seventy-five percent of all African-American users are women. African-American users are also more likely to participate in chat rooms than other ethnic groups ("African-American Internet Users," 2001).

Age

Like all psychomotor and cognitive skills, the ability to successfully use computer technology is affected by age. Older users are slower to complete specific tasks and are less likely to be successful at specific tasks. The effects of age are progressive and increase with the age of the user (Hargittai, 2002). Twenty-two percent of Americans 65 years of age or older use the Internet regularly and these individuals are likely to use information technology on a regular basis (Fox, 2004). The

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