

DRAFT

**BRIEFING MEMO:
THE DIGITAL DIVIDE**

**ADVISORY COMMITTEE ON
STUDENT FINANCIAL ASSISTANCE**

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INTRODUCTION

The digital divide refers to inequities that exist in access to technology (Education Week, 2004). There are many different aspects to the concept of the digital divide. For instance, it can represent access to computer usage, Internet usage, location of usage, or type of connection speed to the Internet. This memo explores the status of the digital divide in the United States, noting areas where gaps exist between obtaining access and not obtaining access. It begins with a broad overview of the use of technology in America. The memo then identifies indicators that impact the likelihood of a person accessing a computer and the Internet. It also discusses how home, school, and public libraries impact access. Lastly, the memo concludes with a brief analysis of how this information relates to the Advisory Committee on Student Financial Assistance's study on simplifying need analysis and application for Title IV funds.

OVERVIEW OF TECHNOLOGY USAGE IN THE UNITED STATES

According to a 2001 study, 174 million Americans, or about two-thirds of the U.S. population, had access to computers. The same study reported that 90 percent of children between the ages of 5-17 used computers (DOC, 2002). A different study on Internet access published in 2003 estimated that 126 million Americans, or 63 percent of the U.S. population, utilized the Internet (Madden, 2003). In addition, this study revealed that the most common method for accessing the Internet was through a dial-up connection. The study also showed, however, that one-third of all people who access the Internet at home have some type of high-speed Internet access and this figure is expected to grow rapidly in the next few years (Madden, 2003). For example, in a 13-month period from 2000 to 2001, usage of high speed-Internet access in homes increased by 116 percent (DOC, 2002). A home is the most common place for a person to use the Internet: over 43 percent of the U.S. population accesses the Internet from a home. Other common locations to access the Internet include work (19.6 percent), school (11.9 percent), and the public library (5.4 percent) (DOC, 2002).

INDICATORS OF THE DIGITAL DIVIDE

INCOME

There are several strong variables that impact whether or not a person uses a computer or the Internet. One indicator is income. Individuals from high-income households are more likely to have access to a computer and the Internet than people from low-income households. In 2001, only 37.5 percent of the population from the lowest-income households used computers and only 25 percent utilized the Internet. In contrast, 88 percent of individuals from the highest-income households used computers and 78.9 percent had access to the Internet. Although there is a large gap among computer and Internet access based on income, this gap continues to narrow. For example, the Department of Commerce (2002) reports that the fastest growth rate for Internet use is among low-income families. Between 1997 and 2001 the use of the Internet for people from the lowest-income households increased at an annual rate of 25 percent. In comparison, individuals from the highest-income families increased their Internet use at an annual rate of only 11 percent.

RACE

A person's race also influences a person's likelihood of accessing a computer and the Internet in the United States. Whites access computers and the Internet at higher rates than blacks and Hispanics. During 2001, the computer and Internet usage rates for whites was 70 percent and in 2003 the Internet usage rate was 64 percent. In comparison, 55.7 percent of all blacks had access to a computer in 2001 and 51 percent used the Internet in 2003. Hispanics had a computer usage rate of 48.8 percent in 2001 and an Internet usage rate at 62 percent in 2003 (DOC, 2002 and Madden, 2003). Although the gap between whites versus blacks and Hispanics is significant, it continues to decrease over time. Between 1998 and 2001 the annual growth rates of Internet usage for blacks and Hispanics were 31 percent and 26 percent, respectively. Whites and Asian Americans had smaller overall annual growth rates of 19 percent and 21 percent, respectively (DOC, 2002).

EDUCATION

Educational attainment is another factor that impacts the digital divide in the United States. The higher a person's level of education, the more likely he or she is to use a computer and the Internet. In 2001, 86.9 percent of the population who possessed some education beyond a bachelor's degree used a computer and 83.7 percent utilized the Internet. On the other hand, 47.3 percent of those who only had a high school diploma used a computer and only 39.8 percent had access to the Internet (DOC, 2002). Just as the influence of income on Internet access is getting smaller, the influence of education level on the digital divide also appears to be decreasing. Between 1998 and 2001 the use of the Internet for individuals with some education beyond a bachelor's degree increased annually at a rate of 9 percent. Meanwhile, the growth rate for persons with only a high school diploma increased annually at a rate of 30 percent (DOC, 2002).

DIGITAL DIVIDE MEASURED BY LOCATION OF ACCESS

HOME

A digital divide exists in homes throughout America. While 77 percent of whites use a computer at home, only 41 percent of blacks and Hispanics have access to a computer at home. Eighty percent of children from families with annual earnings of more than \$75,000 use computers at home. In comparison, 31 percent of children from families earning less than \$20,000 have access to a computer at home (DeBell and Chapman, 2003). Twenty-eight percent of fourth graders and 24 percent of eighth graders who receive free or reduced-price lunches do not have computers in their homes. On the other extreme, 7 percent of fourth graders and 5 percent of eighth graders who do not receive subsidized lunches lack access to a computer at home (NAEP, 2003). Similarly, children from high-income families are more than twice as likely to have home Internet access than children from low-income families. However, the greatest gains in home Internet access from 2000 to 2002 were among African-American families (314 percent growth rate) and low-income families (123 percent growth rate) (The Corporation for Public Broadcasting, 2003).

One of the most significant reasons why some households never connect to the Internet is cost. In a 2001 survey, the largest specific response to why households do not have Internet in their homes was “too expensive.” A quarter of all households who fell under this category volunteered this response. Not surprisingly, a person’s likelihood of citing cost as a factor is correlated to income. Lowest-income households who do not have Internet access listed cost as a factor 34.7 percent of the time. The response for the highest-income group was 6 percent (DOC, 2002). The dawning shift to high-speed Internet poses an additional problem for the digital divide, as broadband and DSL Internet access can cost up to five times more than a dial-up connection¹. Currently, the average annual income of broadband families is \$72,000 and the average income of families who plan to get broadband is \$65,000 (The Corporation for Public Broadcasting, 2003).

SCHOOL

Access to computers and the Internet in schools has partially narrowed the digital divide gap for children. Market Data Retrieval (2003) reported that national student-to-computer ratios dropped from 125-to-1 in 1984 to 4-to-1 in 2003 and the ratio of students to instructional computers with Internet access in public schools decreased from 12.1 to 1 in 1998 to 4.8 to 1 in 2002. In 2001, 80.7 percent of children ages 10-17 from the lowest-income families used computers at school. This figure was relatively comparable to the 88.7 percent of children ages 10-17 from the highest-income category that used computers at school. Unfortunately, the gap for Internet access in public schools is much larger between the lowest- and highest-income groups. In 2001, 34.3 percent of children ages 10-17 from the lowest-income group accessed the Internet at school. Almost 63 percent of children ages 10-17 from the highest-income families could utilize the Internet at school (DOC, 2002).

The extent of the digital divide enumerated above is further exacerbated by the limited capacity of high poverty schools to use both computers and the Internet. A 2002 study revealed that 33 percent of high-poverty schools classified a majority of their teachers as beginners in using technology. For low-poverty schools, the percentage was much lower, at 18 percent (Market Data Retrieval, 2002)². Teachers in schools classified as “needing improvement,” according to the No Child Left Behind Act of 2001 (NCLB), are less likely to use computers or the Internet than teachers at other schools.³ Sixty-one percent of schools needing improvement report that more than a majority of their teachers use the Internet for instruction and 79 percent report a majority of their teachers use a computer. For all schools, however, these percentages are much higher: 74 percent of all schools report that a majority of teachers use the Internet for instruction and 84 percent report that a majority of teachers use a computer (Market Data Retrieval, 2003).

¹ Broadband and DSL are commonly referred to as high-speed Internet connections because they enable users to connect to the Internet at speeds 10 to 20 and 50 times faster, respectively, than a dial-up connection.

² The U. S. Department of Education defines poverty status of a school by the percentage of enrolled students eligible for free or reduced-price lunches. A high-poverty school is where 50 percent or more of the student body is eligible for free or reduced-price lunches. A low-poverty school is where less than 25 percent of the student body is eligible for free or reduced-price lunches.

³ Under the No Child Left Behind Act of 2001 all states must set annual Academic Yearly Progress Standards (AYP), or goals for all their schools and students. Schools that do not meet a state’s AYP two years in a row are identified as needing improvement.

Additionally, limited access to computers outside of school hours also contributes to the digital divide. During 2002, only 53 percent of public schools with access to the Internet made computers available to students outside of regular school day hours. Almost all (96 percent) of public schools that did offer Internet access outside of the regular school day offered hours after school, and 74 percent offered hours before school (Kleiner and Lewis, 2003). At the same time less than half (43 percent) of all K-12 schools own laptop computers (Market Data Retrieval, 2003). In the case of schools that do own laptops, very few lend them out to students. During 2002, 8 percent of public schools lent laptop computers to students. The median number of laptops these schools had available to lend was 7 computers, or 1 per 16 students (Kleiner and Lewis, 2003).

LIBRARY

Ninety-five percent of public libraries in the United States offer free access to computers and the Internet. This has contributed to overall library visits increasing by more than 17 percent between 1996 and 2001. Despite gains in federal, state, and private funding in recent years, the quality of access varies substantially between poorer libraries and well-funded ones. Inequities exist in regards to hardware, software, number of computer terminals, and connectivity speed (Gates Foundation, 2004). The likelihood that a person will use the library as a location to gain access to the Internet is also related to a person's race and income level. In 2001, 19 percent of all black Internet users and 13.8 percent of all Hispanic Internet users utilized public libraries to gain access. Meanwhile, 11.6 percent of all Asian American Internet users and 8.6 percent of all white Internet users gained access through public libraries. Low-income individuals are also seeking out opportunities at public libraries in greater numbers than upper-income individuals. Approximately 20 percent of all individuals from the lowest-income group who use the Internet accessed it at public libraries. This is compared to 7.2 percent of all Internet users from the highest-income group (DOC, 2002).

ANALYSIS

In order to simplify the application process for Title IV aid, the Department of Education (ED) could implement a simplified paper form, the FAFSA-EZ, and explore the implementation of a telefile application to replace the existing paper FAFSA. Although, the Internet is becoming an increasingly popular medium for applying for financial aid, a large percentage of financial aid applicants will be unable to utilize the FAFSA on the WEB, or will have a harder time using the Web as a means to apply for financial aid.⁴ Even though there are other Internet access locations besides a home (i.e., schools and public libraries) that help to decrease the digital divide, it can not be assumed that all potential financial aid applicants would be able to utilize these locations. Individuals with lower-income levels are more likely to fill out a paper application because these individuals are more likely to complete a FAFSA at home, which is where low-income individuals are also less likely to have access to the Internet. A study released in 2003 found that students with lower incomes are more likely to apply for student aid

⁴ Mr. Daniel Madzellan, Director of Forecasting & Policy Analysis at the Office of Postsecondary Education for the U. S. Department of Education, reported, at the February 5, 2004 Advisory Committee on Student Financial Assistance hearing, that for the 2003-2004 award year 71 percent of the 12.3 million financial aid applications were processed electronically.

using a paper FAFSA because they want to complete the application at home, where they may not have Internet access, but where they do have direct and private access to the background data required to complete the application (i.e., tax returns, bank account information, Social Security numbers) (Jackson, 2003). Therefore, it is necessary to focus the same amount of attention on simplifying and reducing the amount of time it takes to complete the paper FAFSA as is focused on improving FAFSA on the Web.

Secondly, ED could modify FAFSA on the WEB so that any improvements do not exclusively require high-speed Internet connections. A digital divide exists between those who have access to high-speed Internet connections versus those who do not. Any web changes that require financial aid applicants to utilize a high-speed Internet connection will only attenuate the digital divide and further decrease the value and usage of the FAFSA on the Web.

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