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## Examining the Digital Divide

Computers and computer-based technology have quickly permeated into all aspects of our culture in the past twenty to thirty years. No longer can knowledge of technology be regarded as superfluous; it is now a requirement for success in education, the job market and even social life. Unfortunately, while children raised in wealthy communities enjoy regular access to computers and the internet, children growing up in poorer areas have only limited access and correspondingly limited knowledge. This phenomenon is referred to by many as the Digital Divide. A quarter century ago it was a widely accepted fact that upon graduation from high school an individual could enter a trade or vocation that would (at the least) translate into secure blue-collar work for many years. This is no longer the case. The lack of regular access to technology, at home or in the classrooms, has relegated millions of American youth to insecure and low paying jobs at the margins of our economy. There are several theories regarding the cause of this divide. This paper will examine the problem from a quantitative perspective; looking at the role access plays in creating this divide. Finally, this paper will determine what groups of people are less likely to be engaged with computers at a young age and how does this affect future development and success?

Since the mid-1990's there has been a concerted effort to "wire" America's classrooms. Around this time the federal government pushed forward a policy to get computers into all classrooms by the year 2000, a goal that was nearly met (Bolt 31). The thought behind this sort of legislature is that if the tremendous educational potential provided by computers is equally distributed in the classrooms, the reaped benefits will be equally well distributed. The unfortunate reality is that this rapid wiring of America's schools has only benefited select portions of our society, widening the digital divide.

A major reason for the disassociation of computers in classrooms to children comfortable with computers is the lack of training provided to teachers in the public school systems. On average, schools spend eighty-eight dollars per student for computer equipment against only six dollars

per student for training educators how to use and teach with it. In 1999 the Department of Education conducted a survey among thirty-five hundred educators in America's public schools. Of those polled, over 80% reported having "some training" in the basic use of computers and how to use computers as an educational tool. However, only 20% felt that they were "well prepared" to teach using this technology in a manner that would best benefit the students (Bolt 29). The survey results prompted Secretary of Education Richard Riley to state that "teacher education and development programs are not addressing the realities found in today's classrooms." Another study conducted at roughly the same time by the International Society for Technology in Education found that in addition to inadequate teacher training, schools were trying to shoehorn computers into outdated curriculum (Bolt 30). This failure to use technology to its full benefit was leading to children who could accomplish singular tasks on the computer but not encouraging the exploration necessary to foster a complete understanding of technological resources. D. Lamont Johnson, one of the nation's top specialists in educational technology stated that "We must guard against the belief that computerizing always represents progress. Convenience, speed, and accuracy are not necessarily tied to validity and importance." (Armstrong 61) Unsurprisingly, both the survey by the Department of Education and the ISTE found that schools located in wealthy pockets of American society were most likely to have trained educators and correspondingly well technologically educated students. Thus, without widespread student access to competent teachers and resources, especially in the poorer areas of our country, the infiltration of computers into American schools will do little to narrow the digital divide.

The long-term impact of comprehensive computer-based teaching has been understood for many years. Technological ability and knowledge continues to be more intimately linked to success in the job market the further we move into the Information Age. Former President Bill Clinton understood this in 1999 when he made the assertion that "Computers, the internet, and educational software can make a real difference in the way teachers teach and students learn. Because of our efforts, children in the most isolated inner city or rural town will have access to the same universe of knowledge as a child in the most affluent suburb. Parents will be able to communicate more frequently with teachers, and keep up with the progress of their child in

school. Our children will be ‘technologically literate,’ and better prepared for the high-tech, high-wage jobs of the future.” (Bolt 48)

The nature of the work place is in a period of change unseen in the recent past. As we transition from the Industrial Age to the Information Age, education and work are becoming entwined more than ever. America is consistently losing industrial jobs to foreign countries with lower worker compensation and environmental controls. The remaining blue collar jobs are pushing more towards automated systems requiring a completely different skill set than the workers of previous generations. This makes a strong educational foundation in technology a near requirement for placement in most non-service sector jobs. The unfortunate reality is that computers and teachers trained in the use of computers costs money and as the majority of school funding still comes from local tax initiatives, it has become increasingly difficult for poorer communities to keep pace with wealthy ones. One of the ways disadvantaged schools are able to get technology and training into their classrooms is by partnering with local high-tech businesses (Bolt 56). By using the financial strength and training programs provided by many high-tech companies, poorer schools are able to remain equal with the richer ones. This method, however, also has its disadvantages. Many companies enter into relationships with schools looking for candidates to fill specific needs within their workforce. Thus, instead of receiving a balanced technological education, students are groomed for specific jobs and specific tasks. Also, in many instances students are assigned as interns to the sponsor companies, a practice that many feel is little more than a way for private companies to receive free labor from public school children. Regardless, it is clear that as we progress further into the Information Age, our students at all income levels must be comfortable with computers in order to compete in the workplace.

Income is a factor that has obvious impact on who is computing and who is not. While prices for both hardware and internet service have progressively decreased since the turn of the century, the cost of computing is still out of reach for many Americans. According to information from the United State Census Bureau, computer penetration into homes can be calculated by taking family income in thousands of dollars and expressing the number as the percent of homes with computers. For example, approximately 70% of homes with a combined yearly income of

\$70,000 have computers while only about 10% of households making \$10,000 per year also have computers (Bolt 124). Encouragingly, a significant portion of Americans without personal computers are finding alternative places to access this technology. Of the people that do not rely on home or work connections to the internet, over 50% come from households making less than \$50,000 per year (Harwood 4). This helps to illustrate that while there are several factors that deter people from accessing technology, easy and affordable access is the most significant. As inner-city and rural communities continue to provide access points for their lower-income populations, the deficiencies these communities currently face will be lessened dramatically.

The digital divide is an issue that impacts people from all backgrounds on some level. Traditionally, however, it has been minorities that find themselves on the wrong side of the divide in America's new technology based culture. A 2005 Survey conducted by the Pew Internet Project showed that African Americans accessed the internet 13% less than their White counterparts. Also, United States Census information shows that in 2003 only 37% of the Hispanic population had home internet access compared to 65% for non-Hispanic whites (Fox 2). There are many factors that contribute to a specific demographic being "off-line" and providing regular access to the internet and computing technology is only one step that must be taken to bridge the racial digital divide. Other factors such as a lack of minority specific content and minimal amounts of minority-aimed advertising have played a roll in keeping Blacks and Hispanics away from computing and specifically the internet. However, the 2005 Pew survey showed that almost one-third of the people not currently using the internet cited not having a point of easy-access as their major reason for not being on-line (Fox 9). In her Project 2000 study, Donna Hoffman determined that whites are much more likely than minority groups to access the internet at non-traditional locations, such as community centers, libraries and cafes. This was confirmed in 2005 by Paul Harwood who found that of the roughly 30 million users who connect at locations other than home or work, 78% are white compared to only 7% black and 9% Hispanic (4). To Hoffman, this signifies an inequality in our communities with regards to this important technological innovation. This is a problem that roughly parallels the inequality found in athletic facilities for minority groups in America thirty years ago. The difference is that while inadequate athletic facilities might prevent a small number of children from fulfilling their

potential as athletes, inadequate technological facilities are preventing entire segments of society from reaching their academic and professional potential.

Like the car and the telephone, computers have made the transition from luxury items for the privileged to necessities required by all people to be successful in American society. Unlike the car and telephone, however, computers require an uncommon set of skills to be utilized without which the machine itself is not useful. Inequalities in both the access to computing hardware and the access to computing instruction are the main causes of the Digital Divide. Understandably, the wealthier segments of America were the first to adopt this new technology and are currently the people with the highest access to and knowledge of computers. Without a concerted effort to afford these same privileges to the often overlooked portions of our population the divide will grow forcing the underprivileged into lower paying and less secure jobs while the wealthy continue to advance through the work force. As students, children of all races and income levels are given exposure to this technology; however, without proper instruction and access to facilities outside of school, computers will remain objects on the fringes of these communities. Encouragingly, many cities and organizations are taking steps to narrow the divide by providing Community Technology Centers and other programs to allow both adults and children to gain knowledge and interaction with computers. As the director of Plugged In, a community tech center in Palo Alto, says hopefully these programs can ensure that “we take those steps that will make sure we don’t increase the gap, that we help the kids who need help to get access to the tools that will allow them to take advantage of the opportunities they can make for themselves.” (Bolt 67)

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