

There are only two families in the world, the Haves and Have-Nots.

—Miguel de Cervantes (1547–1616)

By now we've all heard about The Digital Divide

In July 1995, the U.S. Commerce Department's National Telecommunications and Information Administration (NITA) released the first report in its *Falling through the Net* series analyzing telephone, computer, and modem/online-access penetration rates throughout the United States and identifying several categories of information have-nots. By July 1999, the issue date for the third report, *Falling through the Net: Defining the Digital Divide*, the NITA stated that access to computers and the Internet had "soared for people in all demographic groups and geographic locations." The report added, however, that the digital divide between the information rich and the information poor not only had persisted but actually had widened for many groups.

In the meantime, numerous questions have been raised. To begin with, is there truly a divide at all? Is the divide simply an imagined gap created by the manipulation of statistics representing a frozen point in time? If there is a divide, what is the dividing line: race? age? education level? rural or urban residence? U.S. regional residence? single-parent vs. two-parent household? simple desire and/or interest? Or are there perhaps *many* divides—in Internet access, in use of access, in ownership of computers, in overall computer technology skills?

To help answer these questions, *EDUCAUSE Review* turned to a logical source: think tanks. In the following two articles, writers from the Cato Institute and the Benton Foundation offer their perspectives on the digital divide, as well as their ideas on what the issue might mean for higher education. Their views may help us answer a final question: Was Cervantes right?

How Does the Empty Glass Fill?

A M O D E R N P H I L O S O P H Y O F T H E D I G I T A L D I V I D E



The fuss about the “digital divide” is a testament to the power of the human mind to take an ordinary problem and magically transform it into a crisis threatening the future of our nation. When all the data on digital disparities is in, there remains the question of whether the digital glass is half empty or half full. Even more important, is it emptying or filling? How fast is it emptying or filling? Finally, the most important question of all is, Why does the glass empty or fill?

Actually, we already know that the glass starts out empty. Ages ago, when human beings stood up from the baked mud of the African desert, they had nothing to their names except opposable thumbs and a remarkable ability to develop language. Fast-forward to just twenty years ago: few people had cell phones or personal computers, let alone Internet access. The astounding thing is not that there are substantial numbers of people without Internet access but rather that anyone has it at all.

So where does wealth like computers, broadband networks, e-mail software, and the learning represented by college diplomas come from? As we will explain further below, digital riches have come from the fiercely competitive markets typical of the computer industry, markets that aren't regulated and taxed to death. As we address the digital divide, the lesson learned is to shy away from big-government solutions—in the long run, they'll backfire.

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B Y S O L V E I G S I N G L E T O N A N D L U C A S M A S T

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THE DIGITAL DIVIDE: A Glass Filling Fast

We have already heard the bad news about the digital divide. Headlines tell of a “widening gap” between upper- and lower-income groups or between single-parent and two-parent families. The Reverend Jesse Jackson calls it “classic apartheid.”¹ *Falling through the Net: New Data on the Digital Divide*, a report released in 1998 by the Commerce Department’s National Telecommunications and Information Administration (NTIA), notes that although access to communications technology is “soaring,” the “digital divide . . . is actually widening over time.” Specifically, the report states: “The digital divide has turned into a ‘racial ravine.’ . . . With regard to computers, the gap between white and black households grew 39.2 percent (from a 16.8 percentage point difference to a 23.4 percentage point difference) between 1994 and 1998.”

Yet a reanalysis of the NTIA’s data by the Cato Institute’s David Boaz shows that in 1994, whites were 2.6 times as likely as blacks to have a computer and that in 1998, they were only 2.0 times as likely. From 1994 to 1998, computer ownership by whites increased 72 percent while ownership by blacks increased 125 percent. From 1994 to 1997, computer ownership by Hispanics and African-Americans increased by 117 percent in households with less than \$15,000 in income. And when we control for income, blacks are more likely than whites to have access to a computer at work. “People of color are going online in droves, and we are seeing an explosion in this new medium,” says David Ellington, who founded Netnoir.com, the first black online and multimedia service, in 1995. “Some of this rhetoric [regarding the digital divide] is positioning African Americans in need of help. Personally, I believe that black people have proven that when technology becomes relevant to us, we embrace it.” A survey by *Cyber Dialogue* counts close to 5 million black Internet users, and the Chicago-based *Target Market News* reports that blacks spent \$1.3 billion on computer-related products last year, a 143 percent increase over such spending in the previous year.²

The time when everyone who wants to be connected is connected is near. Ekaterina Walsh, an Internet analyst at





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Forrester Research in Cambridge, Massachusetts, sums it up: “Everybody who wants to get online will have gotten online in the next five years, and it doesn’t matter whether they’re yellow, pink, or green.”³ It is unlikely that household penetration will ever reach 100 percent. Even for whites with household incomes over \$75,000, the percentage hovers around 80 percent ownership of personal computers. People may have completely rational reasons for not owning computers: they may have unrestricted access at work, or they may simply choose to receive their information through traditional media like television and newspapers.

The digital glass isn’t full yet. But it is filling fast. Internet technology is spreading to the general population far faster than did automobiles, telephones, radios, electricity, television, VCRs, or microwave ovens.

THE DIGITAL DIVIDE: Economics from Outer Space

According to pundits like Daniel Bell, Charles Reich, and Alvin Toffler, who warned us of the dangers of “information have-nots,” the market process was not supposed to be working nearly this well. The theory goes something like this: High-tech information devices and services start out as luxury goods available only to the rich. The rich teach their offspring how to use these devices, and their offspring go out and secure the high-paying jobs that enable them to buy information technology, endlessly perpetuating the cycle. The rich get richer, and the rest of us get poorer.

But markets for high-tech communications equipment have acted pretty much like markets for radios, refrigerators, automobiles, and cell phones. These products all started out as luxury goods and, low and behold, spread downward—not instantaneously but inexorably, driven by ordinary rules of supply and demand. Businesses want a mass market for their goods. Every customer that does not or cannot buy from Company A is a potential target market for Company B, C, and D. Once someone has invented the e-widget, he or she had better figure out how to capture the largest market share possible, or someone else is going to get it.

Generation after generation, the standards of living have been rising for the poor as well as for the rich. Even the lowest-income groups end up as a target market; take, for example, the expansion of prepaid long-distance telephone service targeted at low-income immigrants, who often need to call overseas and who may not have ordinary long-distance phone service.

THE DIGITAL DIVIDE: An Entrepreneurial Opportunity

Let us put some flesh on the bones of this market theory. New businesses are springing up even in the inner city to serve the computer-deprived members of society. Whether it is the \$25–\$50 bargain-basement refurbished 486 computers sold by Computer Reclamation Inc. in Rockville, Maryland, or the \$799 Pentium-powered units offered by Computers in the Hood (run out of a former crack-house), entrepreneurs are recognizing the needs and opportunities that are available only while the digital divide exists. In addition to offering these computers at an affordable and attainable price, most outfits include some type of training to get the user off and running.

Postsecondary educational institutions such as vocational schools and community colleges have done an excellent job of making technology accessible to low-income groups. With low tuition, open admissions, and essential basic coursework, community colleges have long served the

“have-nots” in a maturing service economy. As a path to a four-year institution or as a place to receive vocational training, community colleges are affordable options for many people—especially with the rising cost of public and private four-year colleges and universities. In a recent survey conducted by the American Association of Community Colleges, many students came from low-income households, and about one-quarter of the respondents also expressed an interest in careers involving computer/technical skills.⁴

In addition, participants in the industry that created and profited from the boom in computer usage have stepped up to the plate to provide assistance to the have-nots. By providing—at little or no cost to the individual (see <<http://www.free-pc.com>>, <<http://www.netzero.com>>, and <<http://www.freeprograms.com>>)—computers, Internet service, and software to those who presently do not have them, many arms of the computer industry can gain new customers and expose them to advertising and products in markets that go beyond technology and computers. This approach has been used over the years with tremendous success by both the alcohol and the tobacco industries; early and overwhelming brand exposure has ensured lifelong customer loyalty and new legions of customers on an ongoing basis. Even before the Internet, the services LEXIS and Westlaw provided free access to law students, hoping to develop loyal customers at the earliest possible stage in their careers.

AOL, the leading provider of online services in the United States, recently announced the launch of AOL@School, a free online service that would provide schools with access to AOL’s library of educational content. Additionally, Microsoft announced earlier this year the start of a five-year, \$7 million philanthropic endeavor aimed at getting community colleges connected and partnered with community businesses. The glass is filling and will keep filling. By the time government programs get under way, programs such as President Clinton’s plan to build community computer centers to help the information have-nots, there may no longer be any have-nots: the intended recipients may be online already. The problem we’ll have then is what to do with all the obsolete equipment that our tax dollars have paid for.

HIGHER EDUCATION AND THE DIGITAL DIVIDE

From the standpoint of higher education, students who leave high school without exposure to digital learning tools such as the Internet will prove a much less serious problem than students who leave high school with inadequate reading or math skills. As computer interfaces become increasingly user-friendly, learning to use a database, a word-processor, or e-mail will not be particularly difficult, just as was discovered by the growing number of senior citizens who have learned to use the Internet. For students who can read, who can figure, and who have “learned how to learn,” lack of exposure to digital equipment in education will not be much of a handicap.

Many educators hope that the deployment of digital learning tools in earlier education will help to reduce the number of students who reach higher education with deficiencies in basic skills such as reading. For many educators, therefore, the problem of students who graduate from high school without adequate reading or math skills may be perceived as linked to the problem of getting high-tech devices into elementary and secondary schools. Note, however, that the two are not necessarily linked. A student can learn to read and do math at very high levels without exposure to any computer technology whatsoever.

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Likewise, students with virtually unlimited exposure to computers can experience no substantial improvement in basic skills. One prime example is the Kansas City School System. Under court order, the Kansas City School Board was told to design a “money is no object” program to integrate the school system and to raise the test scores of African-American students. The board added, among other new facilities, computers everywhere, television sets and compact-disc players, television studios, and a robotics lab, and it boasted a student-teacher ratio of 12 or 13 to 1. But the test scores of the minority students did not rise. The board ultimately concluded that paying more attention to hiring good teachers and firing bad ones would have made a greater difference. Similar results have been reported in Sausalito, California.⁵

The likelihood that technology alone will fail to solve the problem of students who lack basic skills is especially high in the absence of adequate teacher training. But even when teachers are trained, substantial questions remain about how much the technology can add to a student’s real knowledge. One educator was disturbed, for example, to find that when he asked his students to determine the date on which a certain Robert Frost poem was published, the students came back with widely varying answers. Most of them gave their source simply as “The Internet” and seemed to have no concept that there might be Internet sources that were unreliable, and many had no idea how to use an ordinary “paper” library to get the same information. As “policy wonks,” the authors can attest to a similar problem. When asked to find a document, many interns fresh out of college check first and only on the Internet. If they do not find the document there, the interns announce that the document is “not available.”

The view that digital technology is either necessary or sufficient to improve students’ basic skills or their ability to engage in critical thinking, therefore, may be a dangerous distractor. The flip side is good news for educators: they may feel much less pressure to equip absolutely every learning environment with a plethora of costly gadgets destined for quick obsolescence. A school could find itself expending endless resources on technology when those resources would be better spent elsewhere in the educational system.

The deeper problem seems to be that there are more serious issues plaguing elementary and high school education across the United States. Until the more fundamental problems with the educational system are fixed, throwing money into technology or into any other aspect of the educational system just will not work. This may be part of the reason that high-tech entrepreneurs such as Tim Drake and Larry Ellison of Oracle have become supporters of school vouchers.

PRIVATE OR PUBLIC SECTOR?

Whatever differences there are in penetration levels of digital communications media across various socioeconomic groups, these represent a fairly ordinary situation. The digital divide is not a fundamentally different problem from the radio divide, the automobile divide, or the air-conditioning divide of the past. It would be extraordinary to expect to see a new technology arrive for all people, in all situations across the board, simultaneously. We face no special dangers of the creation of two new social classes, one of which is doomed to fall into a hopelessly degraded state.

This is not to say that nothing need be done. Especially for the desperately poor, a great deal must be done—though supplying high-tech gizmos might be rather low on the list. The heavy lifting for the greatest number of



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people will be accomplished, as always, by the market. We have no “crisis” or “emergency” that should be construed to justify new or special programs of taxation and subsidy. For example, there is no need to abandon the American tradition of local and state control over schools in favor of a federal scheme such as the rather wasteful and ill-targeted e-rate program.

There is also the likelihood that such programs will backfire, injuring the market mechanisms that create and spread wealth. Tax-funded programs do not create new wealth. They merely move it out of one sector of the economy and into another. The e-rate program takes money from telephone consumers and companies generally and gives it to schools. Whatever gains the schools may make are offset by losses to consumers and to companies, who have less money to invest in research, network upgrades, second telephone lines, and so on.

Private-sector charitable efforts will always be more effective than tax mechanisms. Donors to charitable efforts, individual or corporate, are spending their own money, not that of the taxpayers. This gives them an incentive to ensure that their money is not wasted and to keep an eye on corruption. Their efforts are far more likely to be targeted where the money will do the most good. By comparison, something like the e-rate program is a massive gamble with someone else’s money. Massive sums are spent long before research on how to use technology effectively in the classroom is completed or even begun.

CONCLUSION

The digital glass is filling fast as the market transforms both computers and Internet hookups from luxury goods into commonplace items. Digital wealth springs from the ordinary forces of supply and demand driven by a profit motive, just as occurred with cars and air conditioning. This process will continue to create the wealth to carry the greater mass of humanity toward a higher standard of living. Even though the market does not work perfectly, it works far better than government tax-and-spend programs. Government cannot create new wealth—it can only take existing wealth from some to give to others.

The success of markets in making technology more affordable is good news for educators—they are not, after all, the only thing that stands between us and a depressing future of unemployable “information have-nots.” But even as more and more students get connected, schools will find they face a deeper challenge: figuring out why so many students graduate from high school without basic skills like reading. And the answer may not be on the Internet at all. *e*

Notes

1. Quoted in “Wrassling Dinosaurs Scare Teleco Beasts,” *Communication Today* 6, no. 65 (April 6, 2000).
2. Both Ellington and the *Cyber Dialogue* survey are quoted in Hubbard Lee, “Is There Really a Digital Divide?” *New York Beacon*, April 12, 2000, 6.
3. Quoted in Alexandra Marks, “Minorities Closing Gap in High-Tech Revolution,” *Christian Science Monitor*, January 26, 2000, 1.
4. American Association of Community Colleges, “Survey Shows Community Colleges Key in Technology Economy,” *Headline News*, April 4, 2000, available at <<http://199.75.76.25/headline/040440ohead.1.html>> (accessed July 28, 2000).
5. Paul Ciotti, “Money and School Performance: Lessons from the Kansas City Desegregation Experiment,” *Cato Institute Policy Analysis*, no. 298 (March 16, 1998), available at <<http://www.cato.org/pubs/pas/pa-298.html>> (accessed July 28, 2000).