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Equality and the Digital Divide

by GERALD DOPPELT*

Abstract

This paper addresses current debates among politicians and scholars concerning social divisions in the USA between “the information rich” and “the information poor” — inequities in access to digital technology based on race, income, ethnicity, education, profession, and gender. I argue that the most significant criterion of a digital divide is not simply the distribution of computers or Internet access (in homes, schools, etc.), as is typically assumed in current debates. Rather it is the distribution of digital literacy — what different groups know how to do with information technology, the degree to which they have learned the skills, and uses of it — increasingly essential to full participation in the “knowledge economy” and “information society.” I advocate refocusing the debate on schools, and on treating the digital divide as a new dimension of the literacy divide in America. As such, key issues include the ways digital technology has transformed the terms of equality of opportunity, and the role of education in realizing this ideal.

Modern societies embrace an almost religious faith in the connection between scientific and technological advances, and inevitable human progress. Yet every such advance raises many problems, confronting society with the need to make ethical and political decisions about how to develop and use new technologies. Making such decisions in a reasonable and fair way can lead to the difference between human progress and regression. The development of many new life-prolonging bio-medical technologies raised a whole new set of ethical and legal issues concerning the right to die, the allocation of scarce organ transplants, euthanasia, etc. Similarly, the

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development of genetic tests for various diseases, in the absence of cures, raises troubling legal and moral controversies concerning who has the right to require such tests or gain access to their results, and the uses or purposes to which such tests may legitimately be put. We have a powerful need to reach common understandings of these moral issues at the heart of technical advancement, and to gain reasonable, institutionally stable ways of resolving them. Only by this route, can we assure that technical advancement improves human well-being and does not make some groups, nations, or humankind worse off.

In this paper, I examine and critically evaluate some of the most influential interpretations of the issues raised by the explosion of the new digital information and communication technology (or “ICT” for short). These issues have crystallized around a debate among public officials, policy experts, and scholars over the “digital divide” — disparities between the “info-haves” and the “info-have-nots” based on differences of income, race, ethnicity, education, profession, and gender, between nations, and especially between groups within nations.¹ This debate has focussed upon the following questions. What is the best measure of the digital divide, and its tendency to narrow or widen: PC ownership, internet access, computer skill, or what? Which social differences between groups are most predictive of, and responsible for, the digital divide? Will the divide decrease or increase over time, alleviating or compounding problems of inequality, inclusion, and marginalization. Is the digital divide the sort of issue which justifies equalitarian public policies aimed at enabling more groups to be “on-line”, and what mechanism of redistribution are most appropriate? Finally, how and why does the digital divide matter? Is it any more significant than the distribution of fax-machines or mathematical skills among the members of society? What is at stake in persons’ level of engagement with “ICT,” the new information and communication technology? In this paper, I argue that the digital divide is defining a new dimension of the literacy divide, which is most significant in its bearing on equality of educational opportunity and the role of public schools in reproducing class divisions.

My argument shifts the central focus of the politics of ICT to the public schools. I illustrate the ways in which powerful inequalities of

1. For an overview of this debate, see the essays in *The Digital Divide: Facing a Crisis or Creating a Myth*, ed. Benjamin M. Compaine, (MIT Press, Cambridge and London, 2001).

educational opportunity in the USA (of schools' funding, resources, teacher qualifications, curriculum, and expectations) are being reproduced, not rectified by the "wiring" of classrooms, distance learning, "drill and kill" exercises; and huge inequities in the ways ICT is employed in different academic settings, when it is employed at all. I argue that both the "techno-optimists" and the "techno-pessimists" in the digital divide debate tend to fetishize ICT — confusing the mere presence or use of the tool with the social contexts and conditions of use that shape what children are empowered to do and be with ICT, and the value it can add to their human capabilities. Properly understood, the digital divide is part of the literacy divide in America, where "literacy" includes persons' full range of abilities to gain, interpret, analyze, create, and communicate all sorts of information, ideas, images, artistic works, and other media of culture. ICT is creating a new subjectivity and literacy, which is increasingly required for full inclusion in central spheres of modern life. As such, it transforms the meaning of equality of opportunity in a democratic society, and the educational resources to which all children have a right because they are supposed to become equal citizens.

In research by the U.S. Department of Commerce dating from 1993 and documented in the study *Falling Through the Net*, the concept of a digital divide is used to refer to "the lack of access to computers and the Internet commonly found in America among poorer households, those with only a high school education, the black and Hispanic population, rural communities, and women." To take some examples, while 50% of whites are on-line, only about 33.3% of blacks are. In America, household income provides a strong correlation with Internet access, with significant disparities in ownership of PCs for different levels of household income. An equally strong or even stronger predictor of Internet access is education. While three fourths of American college graduates are on-line, less than a fifth of those who fail to graduate high school are on-line, which increases to one third on-line for high school graduates. Between 1984 and 1997, while the number of home-owned PCs increased four fold, there was also an increase in the disparities of ownership between groups categorized by race, income, and education.²

Of course, none of this is surprising and is taken by many people

2. For these trends, see Pippa Norris, *Digital Divide* (Cambridge: Cambridge University Press, 2001), 10 - 12, 68 - 92 and *The Digital Divide: Facing a Crisis or Creating a Myth* at 47 - 99, 274 - 284.

to be a natural consequence of social stratification and/or diverse consumer preferences. To the extent that the digital divide stems from income inequalities, it seems similar to the other income-related disparities in the distribution across households of home theater systems, FAX machines, fancy dishwashers, or BMWs. To the extent that the Divide stems from differences in academic credentials, again it seems like other education-related differences in cognitive skills, orientations, or interests. If the Digital Divide matters much more than these other differences, we must presume that much more is at stake, bearing in some way on the central ideals of democratic society – equality, full membership for all, civic participation, or the full opportunity to exercise one's rights and liberties. Defending this presumption is no easy matter, especially in the present political climate. It requires a far clearer and more persuasive moral vision than what now exists in the Digital Divide Debate. The present debate is divided into optimists and pessimists – those who dream of a new equality and democracy through the Digital techno-fix, and those who see an inevitable descent into greater inequality, exclusion, and domination. The debate is also skewed off target by a tendency to abstract the technology from the social and human contexts that give it value. So when parties to the debate reduce the measure of the divide to the presence or absence of PCs (in the home, classroom, workplace, etc), they forget that the PC's relative and unequal value to different groups depends on what real people can do with it and thus the level of service, program, content, skill, knowledge, or literacy supported by the social and human contexts of use. The divides between the info-rich and the info-poor needs to be understood like literacy itself – a function of what people are empowered to learn, understand, do and be, and not simply a function of whether or not they have access to the technology, or are wired.

So let us look at this empowerment and disempowerment – the real digital divide – and ask why it matters more than other social divides, and what features of our moral vision make it so. For many, perhaps most, of the info-empowered it begins in schools – especially in universities. Clearly, in the last five to ten years, many universities have begun to provide settings which immerse students in all sorts of information technology and many opportunities to develop the skills, capacities, interests, habits, and cultural orientations required to use the technology in valuable ways – for learning, research, problem-solving, and the creation and communication of ideas; as well as to gain and share access to music, art, film, conversation, mail, news,

people, groups, organizations, and on-line communities of all sorts. Suppose we define this new info-technology literacy broadly as the working ability and habit of using information technology in all or most of these creative, knowledge-producing, culture-enhancing, socially interactive, communication-driven modalities. It is then clear that the opportunity to develop this new literacy is a great educational and life advantage. Indeed, it is no exaggeration to say that it is creating *a new subjectivity* in modern society – that is a new way of *being*, and *being recognized* as a person, who binds himself or herself to other people, communities, knowledge, and cultures on-line, in modes of self-expression, communication, sharing, and social recognition, distinctive of digital connectivity. This new subjectivity increasingly permeates the worlds of business, professional practice, commerce, entertainment, research, and higher education, the relations of family, friends, acquaintances and other associations. As such, it brings in its wake *new requirements for participation, credibility, recognition, and success* in these key spheres of modern socio-economic life. Those who have acquired this new literacy will be qualified to participate in the “Knowledge Economy” and other communities of practice. Those who are info-technology illiterates may thus fall below basic standards of full subjectivity in the “information age.” Being disempowered — that is, unable to learn, communicate, share, create, or interact in the ways literate and educated people are commonly expected to, they will find themselves excluded or marginalized in central areas of modern life required for individual well-being.

Indeed, this new literacy and subjectivity is becoming such a significant educational, professional, and life advantage — or requirement — arguably, it changes the meaning of equality of opportunity, or even equality itself - central pillars of the democratic vision. While universities (and some households) have been the most fertile environments for the acculturation of persons to the new literacy, K-12 public schools increasingly embrace the same goal — *with lesser resources, and with great disparities between their respective resources and commitments*. While equality of opportunity can be read in different ways, the basic idea is that each individual ought to have the same chance to succeed in life or attain well-being, depending only on his or her own native talents, aspirations, efforts, character, or “individual merit.” While Americans subscribe to this vision of equal opportunity, there is disagreement on precisely what it implies by way of legal guarantees and entitlements — the most obvious example being the debate over whether or not affirmative

action violates, or conforms to the dictates of equal opportunity.

Nonetheless, in democratic moral vision, a great deal of weight is placed on universal public education as “the” crucial mechanism for providing everyone with the means of equal opportunity; both neutralizing the “unfair” effects of inherited class, gender, racial, ethnic, or cultural advantage, and giving all “the same” educational opportunities to get ahead in life.

The value of public schooling, as the means to provide all children with an equal chance of upward mobility, implies that the package of educational resources may change. In particular, it may be revised or expanded to satisfy new economic, political, or cultural imperatives and provide children with the new knowledge and skills they require. In effect, my argument is that the so-called knowledge economy implies such imperatives. In order for all children to have an equal opportunity to participate and compete in the knowledge economy, we would need to rectify existing disparities between public schools concerning the opportunities they provide their students for the development of the new full-bodied info-technology literacy I have characterized above. But there is more at stake in the new techno-literacy than just upward mobility in the knowledge economy. For like literacy more generally, the new info-tech literacy is valuable as a means to equal opportunity for aspects of well-being other than professional success. In democratic thought, education has also been valued as a means to enrich people’s choices and lives as citizens, cultural actors, parents, life-long learners, and responsible agents in many spheres. Likewise, I have argued that full-bodied info-technology literacy is creating a new subject whose empowerment and membership in several spheres of life besides work requires this new literacy. Increasingly, people’s access to other people, entertainment, art, personal commerce, the exchange of ideas, and communities of various sorts – requires a mastery of ICT literacy.

My argument has two important implications. First, if equal opportunity for ICT literacy is what is at stake in the digital divide, then we fool ourselves if we measure the divide by the presence or absence, of Internet Access in different schools, or even the degree to which ICT is used by students; rather, the key issue is the degree to which a school has the teachers, resources, social supports, and commitment to employ ICT to teach all students how to do science, research, creative problem-solving, analytical reasoning that involve obtaining relevant information, assessing its credibility, interrelating or using it to construct or communicate an argument, etc. One school may have more computers than another school or use them more

frequently for education; but if the use is restricted to “drill and kill” spelling or grammar exercises in the first school, but in the second, is used to teach students how to do research, data collection and analytical argument then that is that the digital divide that matters.

The second implication of my argument is that the digital divide is a new component in a larger problem — the literacy divide. If we think of literacy as preparing children with the cognitive abilities and orientations required for college and a profession, then it is clear children of color and children from low-income families are at a large disadvantage in our school system.

According to research by The Education Trust in Washington, D. C., in the USA “we have constructed an educational system so full of inequities that it actually exacerbates the challenge of race and poverty, rather than ameliorates them. Simply put, we take students who have less to begin with, and give them less in school, too.”³

The facts speak for themselves.⁴ In the USA, more is spent on average per student in schools with less than 5% of their students in poverty (\$6,565 as of 1990) than is spent per student in school with greater than 25% of their students in poverty (\$5,173). Poor and minority students are for more likely to lack the proper books, materials, and qualified experienced teachers. For example, high school students in urban schools have only a 50% chance of being taught by a qualified teacher in math or science. While it is demonstrable that all students benefit from the college preparatory curriculum, poor and minority children are disproportionately tracked into a less demanding, inferior curriculum. Barely a quarter of children from low income households get the opportunity to benefit from the college preparatory curriculum. As a result, these children attain a lower level of verbal and mathematical literacy than others.

Can the introduction of ICT into the classroom rectify such inequities in educational opportunity? Or is the way it is introduced and used compounding these inequities? It is clear that high poverty schools have, on average, less ICT and what they do have is of poorer quality. At this crude level, there is a digital divide; but as I have argued in this essay, the mere presence or increase of ICT among low-income and minority schools provides a false measure of educational equity. Why? Simply because even with ICT in poor schools, “the technology often is used ineffectively to drill students on

3. Education Watch: The 1996 Education Trust State and National Data Book, (Washington, DC, 1996) at 6 - 7.

4. The following data are reported in Education Watch, op cit, 6 - 12.

basic skills, rather than explore information available on the Internet or engage in other high-level learning”.⁵ Indeed, this is precisely what one researcher discovered in comparing two high schools in Hawaii, both of which enjoy high rates of ICT access for their students. While the poor school used it to teach students how to edit a newsletter conveying personal experiences, an elite school used ICT to teach students how to collect, graph, compare, and interpret scientific data in order to frame hypothesis. This is not an atypical situation: “. . . a disproportionate number of poor and Black or Hispanic students are engaged by their teachers in using computers for remedial drills, while well-to-do and white or Asian students significantly more often use computers for applications and simulations promoting higher order thinking.”⁶

To be sure, there are inequities in the distribution of ICT, computers and Internet access, among public schools based on race and income. Obviously, the physical presence of ICT is a necessary condition for the development of ICT literacy among students. Nonetheless, taking the mere presence of ICT in a school, home, or community center — or increases in it — as “the” measure of progress and greater equity is an ideological smokescreen. It masks the real digital divide, which, I have argued, is a divide in literacy and in equal educational opportunity.

The ways in which the real digital divide matters can be illustrated by some additional examples. It is well-known that a major source of unequal educational opportunity stems from the fact that low-income high schools offer far fewer Advanced Placement courses than high-income high schools, which translates into higher grade point averages and a much better chance of admission to first-rate universities. Techno-optimists have placed their faith in distance learning — e.g. offering Advanced Placement courses ‘on-line’ to students in low-income schools. In one such pilot program, roughly three quarters of students dropped out of the course, because they lacked all contact with a teacher who could help them over rough spots and help motivate their learning. When this sort of program was relocated from the home to a computer laboratory in the school with the presence of a local teacher to help, the drop out rate declined from three quarters to about one-seventh of the low-income students.⁷ Well-qualified teachers are required for students to learn,

5. Mark Warschauer, *Technology and Social Inclusion: Rethinking the Digital Divide* (Cambridge: MIT Press, 2002) at 58 - 59.

6. *Id.* at 59.

7. *Id.* at 66-67.

whether or not they are on-line with suitable content, and whether or not it is more expensive than the pure techno-fix. The social relations in which any technology is embedded, shape who does and who does not benefit, and what value they gain.

Another example illustrates the divide between the full-bodied ICT literacy I have defended as essential to equal opportunity, and the more familiar notion of "computer literacy." One researcher studied a randomly chosen group of Internet users among the public in the state of New Jersey. She discovered some large disabilities in what many of these people could retrieve or learn from the Web. Their abilities were hindered by spelling errors, ignorance of how to use search engines, incompetence in entering search terms, and an unfamiliarity with parts of the keyboard required for many browsing activities.⁸ Where do these users fit in the digital divide between the "info-rich" and the "info-poor?" Clearly, touting the human progress marked by the fact that all of these people are online distorts the fact that many have not been empowered by the full ICT literacy at the heart of equal opportunity, inclusion, and agency in the information age.

It is thus an open question whether or not ICT will function to reproduce and widen established inequalities of class, race, education, and well-being, or whether we can remobilize ICT to enhance the literacy all children are entitled to, and will need, to act and live as full and equal participants in the 21st century.

8. *Id.* at 49.

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