...Power is inherently unequal, and this inequality is as much a part of virtual societies as it is a part of the physical world.

Promise or Peril?
Electronic Technologies, Equity, and Marginalized Students

Denise M. Dalamio

A physician, a civil engineer, and a computer scientist were arguing about what was the oldest profession in the world. The physician remarked, "Well, in the Bible, it says that God created Eve from a rib taken out of Adam. This clearly required surgery, and so I can rightly claim that mine is the oldest profession in the world." The civil engineer interrupted, and said, "But even earlier in the book of Genesis, it states that God created the order of the heavens and the earth from out of the Chaos. This was the first and certainly the most spectacular application of civil engineering. Therefore, fair doctor, you are wrong: mine is the oldest profession in the world." The computer scientist leaned back in her chair, smiled, and then said confidently, "Ah, but who do you think created the chaos?"

(Source unknown)

Electronic Technologies:
The Bridge to Equality and Employment

The ability to access electronic mail (e-mail), the Internet (Net), and the World Wide Web (Web) have become life skills for the 21st century. Internet users have almost instant access to facts, figures, databases, public archives, libraries, and information from around the world. Additionally, the use of e-mail has been reported to enhance both professional and personal relationships by providing a fast and efficient way to communicate with colleagues and friends– whether they live next door or half way around the world. In fact, an increasing amount of social and professional relationships are initiated and sustained through computer-mediated communication (CMC) (Elza, 1994; Fox, 1994; Johnson, 1994; Tannen, 1994). During the 1990s, electronic technologies have been riding a wave of exponential growth. In 1998, it was estimated that there were 60 to 75 million adults on the Internet with access to at least 320 million globally distributed Web pages (CyberAtlas, 1998; Network Wizards, 1998; Novak and Hoffman, 1998; Rutkowski, 1998).

A sociology professor at California State University at Northridge conducted an experiment to test the value of online learning. Randomly dividing his statistics class in half, the professor taught one half of the students through a lecture based format and the other half through assignments which were accessed on the Web and through electronic discussion groups and e-mail. The preliminary results revealed that students in the virtual classroom scored an average of 20% higher than those who had attended the physical classroom (*Chronicle of Higher Education,* February 21, 1997). This and similar

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research has led to many educators extolling the virtues of electronic technologies. In a 1997 poll, U.S. teachers ranked computer skills and media technology as more 'essential' than the study of European history, biology, chemistry and physics; than dealing with social problems such as drugs and family breakdown; than learning practical job skills and than reading modern American writers such as Steinbeck and Hemingway or classic ones such as Plato and Shakespeare (*Washington Post,* May 11, 1998).

Similarly, Fred Hofstetter of the University of Delaware asserts, "Citizens who do not know how to use multimedia will become disenfranchised. Cut off from the Information Superhighway, they will end up watching life go by instead of living it fully" (in *Multimedia Literacy,* 1997).

Another reported advantage of electronic technologies (ETs) is the bridge they build between universities and corporations. Students who have knowledge of, and familiarity with, the Internet and the World Wide Web are better equipped to get a job once out of college. In 1998, a survey of 100 business trainers found that 40 percent of large corporate training groups plan to create corporate/university partnerships allowing corporations to negotiate contracts that will encourage colleges and universities to provide courses and technical degrees customized for a particular business. This same survey indicated that by the year 2000 more than half of this custom training will be delivered through technologies such as the Internet and videoconferencing (*Computerworld,* April 13, 1998).

A new study by Booz, Allen & Hamilton and the Economist Intelligence Unit reports business leaders are confident that the Internet will greatly affect the world marketplace by 2001 (*Financial Times,* May 21, 1999). The study– which surveyed almost 600 executives– found that 92 percent believe the Internet would reshape the market by 2001. Sixty-one percent of these same executives felt that the Internet would allow them to achieve strategic goals, and 30 percent had already changed their strategies due to the influence of the Internet. The study also found that the majority of business leaders believe strategies based on the Internet will require significant investment, but worth the profitable future returns. Furthermore, the respondents expressed confidence that the Internet would change relations with both customers and suppliers. The study indicated that preparation for the growing influence of the Internet has already begun, with 90 percent of respondents currently offering a Web site and 61 percent planning to offer an extranet with private access to customers, suppliers, and partners.

In early 1999, Jones International University– which specializes in selling online courses for profit– became the first Internet-only school to be accredited to grant college degrees. Accredited by the North Central Association of Colleges and Schools, Jones International offers bachelor's and master's degrees in business communications. The courses are designed by professors from schools like Columbia and Stanford and are taught by part-time professors free-lancing for extra cash. Founder Glenn Jones states "In the U.S. there are 100 million people who need some kind of additional education, and there are only 15 million seats in universities (*Wall Street Journal,* March 9, 1999).

Surprisingly– despite increased interest in and use of computer technologies– the number of computer science graduates in the U.S. dropped from 48,000 in 1984 to 26,000 in 1997. "This is a real limiting factor to growth," asserts a researcher at Stanford Computer Industry Project (*Business Week,* July 21, 1997). Further, the demand for

computer scientists is not limited to the computer industry. Automobile makers, banks, brokerage houses and phone companies are all vying for qualified job candidates. A Netscape human resources director declared, "Everybody's going crazy now trying to find these folks" (*Business Week,* July 21, 1997). Industry observers believe the widening gap between the supply of computer science graduates and computer industry demand probably will not close for at least a decade. This shortage has led computer companies to look overseas for qualified applicants to fill their jobs– to countries like South Africa, the Philippines, India, Russia, Israel, Bulgaria and the Ukraine.

In addition to providing a more efficient form of communication and opportunities for education and employment, it has been argued that electronic technologies offer unlimited potential for democracy and equal opportunity– due in large part to the visual and verbal anonymity of computer-mediated communications. Virtual societies offer sites where one might browse to learn, to teach, to debate, and to create without those who are more dominant, more confident, or more prestigious wielding unequal power or influence. An individual has the option of not revealing cues about his or her sex or gender, appearance, age, nationality, race or ethnicity– thereby avoiding many prejudices and resulting discrimination. It seems many women have already realized some of the advantages of ETs. A test/survey[1] taken by 16,500 Internet users revealed that women are superior when it comes to surfing the Internet. Of a possible 100 points, the average score for men was 78.29 and the average score for women was 79.91. Surprisingly, women 60 years of age and older scored 71.38, whereas boys 17 and younger had an average score of only 70.64. Survey cosponsor and MCI executive Vinton Cerf explained: "The actual variation in scores is rather small. What is significant is that 60-year-old women can keep up with the younger guys" (*New York Times,* July 3, 1997).

It is clear that electronic technologies have deeply affected social interaction, and they have surely revolutionized education and the economy. However, a closer look at the fallout surrounding the ET frenzy reveals the benefits are not enjoyed equally by all people.

The Other Side of the Sword

Dissenting Voices

Critics of electronic technologies are not few. Educators, authors, and social critics have argued that the reliance on ETs has resulted in less creative and diverse writing, the cancellation of non-computer oriented programs, a comparatively higher online dropout rate, a larger time investment for educators, and questions over intellectual property rights. Additionally, the new electronic technologies have been found to put/keep some marginalized students at a disadvantage.[2] Author and social critic Gore Vidal is one of many educators and scholars voicing dissent about the love-fest surrounding computer technologies. Vidal questions the value of computers for less technologically oriented careers. He believes his own writing would have suffered over the years had he been using a computer. Vidal argues,

> "In general, people who write on computers don't write nearly as well as those who type or write longhand. They become 'easy settlers,' as we used to call movie writers who settled for their first notion of a scene. The computer page looks too perfect to alter the first time around. Hence, lousy, repetitive prose." (*Forbes,* December 1, 1997).

Internet critic, computer security expert, and astronomer Clifford Stoll shares Vidal's skepticism. Stoll– author of the best-selling book *Silicon Snake Oil*– is working on a new book that is critical of the use of computers in primary and secondary education. Stoll told the *Dallas Morning News,*

> "I've discovered that using computers... was a great way to make it look like I was doing wonderful academics when, in fact, I'm just screwing around. And for all the many, many hours that I've spent online and on computers, seems to me that most of the important work that I've done has happened independent of the hours that I've spent online. When I think of the skills that I need as an astronomer, they're skills like knowing mathematics, understanding physics, being able to manipulate a telescope, being able to write a paper, being able to read analytically and understand what someone else has written. Being able to poke holes in arguments. To be able to stand up in front of a meeting and present my ideas. These days, the computers are loaded with programs to guide the kids through things... The main thing the computer is teaching... is [to] accept what a machine says without arguing, that relationships that develop over e-mail, Web pages and chat rooms are transitory and shallow. That if you're ever frustrated, all you have to do is pull the plug and reboot the machine." (August 24, 1998).

In defiance of the conventional wisdom that it would be desirable (in the words of President Clinton) to connect "every classroom in America to the Internet by the year 2000" (1997b), there are increasingly vocal critics of the use of computers in K-12 instruction. One of these critics is William L. Rukeyser of the nonprofit organization Learning in the Real World, who maintains,

> "So many programs were being slaughtered by this perception that if it didn't involve computers, it wasn't worth anything. I quickly realized that there was this tremendous faith that computers were in fact some plaster saint that would save the day. ...We're not pushing our brand of solution, and we're not saying that the emperor has no clothes. We're just asking, Is his tie on straight and do his socks match?" (*New York Times,* March 17, 1999)

So just how effective is electronic education? Although preliminary results reveal better academic outcomes for online learners, the experiment conducted at California State University at Northridge could not determine the cause of the superior performance, i.e., whether the online students performed better because they spent more time collaborating with their classmates or because of the virtual format of the class (*Chronicle of Higher Education,* February 21, 1997). Not surprisingly, a College Board report notes that there is a higher dropout rate for online classes– 32 percent compared to just 4 percent for traditional classes. Armed with such information, officials are concerned that schools facing budget cuts might be lured online by pitches from technology providers that online learning cuts the costs of real-world learning. Meanwhile, the Institute for Higher Education polled on the extra amount of time teaching a distance learning class requires– primarily due to a high number of e-mail exchanges– and their feeling that not all courses, especially those that require hands-on training, are appropriate for the distance learning format. In addition, concerns have been voiced about intellectual property rights

in regards to posting course syllabi and lecture notes on the Web (*Wall Street Journal,* July 15, 1998). However, wariness about the consequences of ETs in education is just the tip of the sword. Researchers have revealed some disturbing developments as a result of the upsurge of CMC users.

Inappropriate and Dangerous Behaviors

The exponential increase in the use of electronic technologies is accompanied by an increase in instances of inappropriate, lewd, dangerous, and even deadly behaviors originating on the Internet (Costello, 1993; Fox, 1994; Jackson, 1993, 1994; Johnson, 1994; Monson and Dalaimo, 1994; NBC, 1994). These behaviors– directed disproportionately at women and young boys[3]– are as real in their consequences as are similar real-world offenses. On June 16, 1994, NBC ran a segment on its *Dateline* series entitled "Predators On-Line" which discussed seduction, preying on naive victims (often young boys), intimidation, harassment, stalking, and even rape as issues relevant to electronic communication. Since then there has been a steady stream of media coverage of similar behaviors and crimes over the Internet. Women, the young, and the innocent are not the only victims of electronic harassment and stalking. Recently the Microsoft Corporation won an e-mail harassment suit against a former female employee who was sending Bill Gates frequent, hostile, and unwelcome messages after her termination (Elza, 1994). A student from the University of Michigan was freed on March 10, 1995 after being denied bail for posting a sexually violent story to an electronic bulletin board. Because the author used the name of an actual person and stated privately to another list user "...just thinking about it doesn't do the trick, I need to do it..." he was charged with the federal crime of transporting threatening materials across states lines (Lewis, 1995). The fact is, all of the major computer-mediated communication providers (NBC, 1994) and many scholars in the field (Costello, 1993; Ehrlich, 1992; Elza, 1994; Jackson, 1993; Monson and Dalaimo, 1994; Peterson, 1994) report that inappropriate behavior and harassment online is a problem. A brief look at some social psychological concepts help to explain why.

In the physical world, we all employ the art of impression management at some time. Some of us are sure to be on our "best behavior" when Mother is around, and others wear suits to work where colleagues and students see us, but change into jeans or sweats the minute we get home. The difference, however, is that in face to face interaction we have visual and contextual cues that offer us additional information about each other– information that allows us to slowly come to know the people with whom we are interacting. Message coordination and feedback using ETs are also problems.

> When individuals are unfamiliar with each other's opinions and statuses, a feeling-out process occurs whereby an individual admits his (sic) views or statuses to another a little at a time. After dropping his guard just a little he waits for the other to show reason why it is safe for him to do this, and after this reassurance he can safely drop his guard a little bit more (Goffman, 1959: 192).

As CMC lacks the contextual and reflexive nature of face to face interaction, the "feeling-out" process described here by Erving Goffman occurs differently. Over e-mail and electronic listservs, information is communicated in monologues, with one person giving some information and then asking questions. Then the other reciprocates,

answering the former's questions and asking a few of his/her own. There can be no mid-stream interjections or requests for clarifications. The sender and the receiver do not share the same temporal or spatial milieu. Because CMC lacks the constant feedback about one's self and the visual communication that occurs in face-to-face interaction, images of message senders develop in a different, often more spontaneous manner. Cues necessitating image revision and adjustments are not as readily available electronically as they are in person.

In addition to problems with message coordination and feedback, CMC lacks several important visual and contextual cues that reveal information about a person. These cues include, but are not limited to, voice tone and speech patterns, facial expressions, and body language, which can imply things such as mood, emotion, attitude, and intent. Also lacking in CMC are cues from a person's conduct and appearance that allow us to employ our previous experience with similar individuals by applying stereotypes to him or her (see Goffman, 1959). Some contextual cues which are absent from CMC include: insignia of office or rank; clothing; gender; age; racial characteristics; size; posture. All of these contextual cues allow us to ascribe meaning to interaction in face to face situations, help us to make sense out of a situation, and to predict how the other will act based upon our past experiences. As social beings, we are always developing relationships with others by employing generalizations or stereotypes that aid us in predicting behavior, share meanings and experiences, and develop a common basis from which to interact (Schutz, 1962). These cues help to define the situation and clarify mutual expectations.

In a face to face situation, a victim of stalking or harassment has the potential advantage of visual and contextual cues with which to assess the perpetrator's actions and the situation. Through CMC, the perpetrator has the advantage of being able to control what information the victim receives about him or her, thereby allowing no secondary or inferential information for the victim to work with. In this way, the harasser has the ability to manipulate the victim's opinion of him/her. Left with no social or contextual cues, the victim is forced to rely more heavily on subjective experience to make up for the lack of observable behavior in assessing the harasser on the other side of the computer screen.

A first impression may be more easily manipulated over electronic mail because there are no contextual cues to indicate the creation of false impressions. We often speak of "getting off on the right foot." Once made, the first impression is much harder to change with subsequent interaction (Goffman, 1959). Therefore, after making a good initial impression, a harasser may be permitted to get further than he/she would have in a face-to-face situation. Goffman stresses the fact that "the initial definition of the situation projected by an individual tends to provide a plan for the co-operative activity that follows..." (1959:12), in other words, once a harasser gains the trust of a victim, that person can be easily manipulated. The visually anonymous nature of electronic technologies seems to be a large part of why inappropriate behavior and harassment is so prevalent.

Marginalized Students

There is a historical relationship between the distribution of knowledge and the distribution of power. A major prerogative of power is the capability to control settings (Giddens, 1983: 206-9). Access to, and familiarity with, many forms of electronic technologies allows users of CMC to increase their capability to control the environments

in which they learn, teach, and interact. It is often argued that the Internet is a more democratic environment than physical society because access to literally hundreds of millions of pages of information are available to anyone with an email account. However, when we take a closer look at who has access to personal computers– and more importantly, who does not have access– a different story unfolds.

For the purposes of this discussion, a marginalized student is one who finds him or herself on the "margins" of U.S. society, where the "center" is a theoretical embodiment of dominant group members, i.e., Anglos, the middle and upper classes, heterosexuals, Christians, the able-bodied and the able-minded, English speakers, and males. If an individual is a member of all of the aforementioned groups, he is said to be at the center of society, i.e., the ideal– the standard by which others are measured. For each of these groups an individual is not a member of, he or she is further marginalized from the center. Using this conceptualization, a middle class, heterosexual, Catholic, able-bodied/minded, Anglo female is less marginalized than a working class, gay, Jewish, disabled male.[4] Due to a dearth of research on the relationship between electronic technologies and marginalized students, the following discussion is necessarily limited to African Americans and women, and to a lesser extent, Hispanics. The effects of electronic technologies on these and other marginalized groups– especially in the areas of access and ownership– are largely unknown. There is an indisputable demand for increased investigation into this area.

Two new studies released in April 1999 question the value of online college courses for marginalized students.[5] The College Board says in its report that Internet courses could put some marginalized students who have less exposure to computers at a disadvantage. An example is the disproportionately low number– only 20 percent– of low-income households that own a computer (Associated Press, April 7, 1999). The consequences of this inequity are significant. These students will arrive at school with less computer knowledge and thus be less prepared to use many forms of electronic technology, including online courses. "There's this rush to get online and go virtual," remarks College Board researcher Larry F. Gladieux. "Colleges, policy makers, and Internet providers who are driving this market need to think about broad access" (Associated Press, April 7, 1999).

By 2005, it is predicted that at least 50 percent of the world's information technology training will happen online. However, most of today's online course designs focus on cutting-edge technology and the quality of course content, without providing a supportive environment for the student (*Sun Server*, April 28, 1999). A lack of support combined with a lack of experience with, and access to, computers may result in many marginalized students being excluded from some very important opportunities. Some marginalized groups are dissuaded – both overtly and covertly– from using electronic technologies. The aging encounter physical barriers while trying to access computer technologies. For many, the mere act of double-clicking a mouse is an impossible task. As I discuss later, many racial and ethnic minorities face structural and political barriers due in part to a lack of role models – whether real or perceived– who own and use electronic technologies. Similarly, while accessing computer technologies, women must contend with many of the same gender barriers that exist in the "real world." Research reveals that males dominate virtual communication just as they do face to face interaction. Researchers have identified typically feminine methods of communication as more

relational and cooperative, and less direct and confrontational than the traditionally masculine style of communicating (Richardson, 1988; Tannen, 1994). Linguists studying e-mail communication found that women tend to be less adversarial, less assertive, and more likely to use personal experiences for support. Men were less likely to take personal offense from comments and to be more self-promotive (Herring Report, in *We*, 1994). This same report also found:

(1) Men wrote longer messages than women.
(2) Men wrote more messages than women.
(3) Messages by men received more responses than those written by women.
(4) Men threatened to leave the [discussion list/newsgroup] if there was prolonged discussion where women contributed 50% or more of the comments.

Tannen believes that, similar to co-ed classrooms and meetings, discussions on e-mail networks tend to be dominated by male voices. But unlike classes or meetings, "online, women don't have to worry about getting the floor (you just send a message when you feel like it)" (1994: 53). Linguists Susan Herring and Laurel Sutton, however, have reported that even though a woman may have the opportunity to send off a message, she still has the same problem of having her messages ignored or attacked (in Tannen, 1994). In other words, the same gender based inequalities and differences that are present in the social environment of face-to-face interaction carry over to computer-mediated communication (Frissen, 1992; Troung, 1993). "Cyberspace, it turns out, isn't much of an Eden after all. It's marred by just as many sexist ruts and gender conflicts as the Real World" (Kantrowitz, 1994: 48).

In addition to the physical, structural, political, emotional, and social barriers to using electronic technologies, it appears an individual's race can be an obstacle to accessing and owning a computer. The Spring 1997 CommerceNet/Nielsen Internet Demographic Study (IDS)[6] – a nationally projectable survey of Internet use among Americans– was the first to collect data on race and ethnicity. The study found that Whites were much more likely to subscribe to an online service than either Blacks or Hispanics. Despite increasing numbers of Blacks and Hispanics online– a number growing faster than the overall rate– the disparity between white and non-white households actually widened between 1994 and 1997. At the end of 1997, 40.8% of non-Hispanic white households owned a computer, compared to 19.4% of Hispanic and 19.3% of African-American households, a gap of 21.5%. Commerce Secretary William Daley declares "The study exposes a growing problem in our economy, one that must be taken seriously: too many Americans are not able to take part in the growing digital economy. The growing trend of information 'haves' and 'have-nots' is alarming" (*Miami Herald*, July 31, 1998).

In a 1998 study based on the IDS, Vanderbilt University professors Thomas Novak and Donna Hoffman revealed a significant racial divide among Anglos and African Americans when it came to computers and the Internet. African Americans and Anglos differ significantly in computer access and Web use. Anglos are significantly more likely than African Americans to have a home computer in their household (44.2% vs. 29.0%), and to have accessed the Web at home (14.7% vs. 9.0%). African Americans are more likely to have ever used the Web at school, and Anglos are more likely to have ever used the Web at work and at other locations such as friends' houses, libraries, etc. Anglos are also more likely to have

ever accessed the Web (26% vs. 22%), and to have accessed the Web in the past week (12.9% vs. 5.8%) (Novak and Hoffman, 1998:3).[7]

When controlling for income, Novak and Hoffman found that increasing levels of income correspond to an increased likelihood of owning a home computer, regardless of race. These findings indicate that the inequity in home computer ownership is correlated with socioeconomic status. When controlling for education, the researchers found that increased levels of education correspond to an increased likelihood of access to a computer at work, regardless of race, indicating that inequity in work computer access is correlated with education. In other words, household income explained home computer ownership and education explained access to a computer at work. However, race differences in home computer ownership are consistent across different levels of education. Within each and every education level, Anglos were more likely than African Americans to own a home computer despite controlling for differences in education.

Students are more likely than any income or educational group to have used the Web in the past six months, presumably because they have access at school. Novak and Hoffman found that when analyzing Web use among students, race does matter. While 73% of Anglo students own a home computer, only 32.9% of African American students own one– a difference that persists when adjusting for students' reported household income. Thus– unlike their unenrolled counterparts– income does not explain race differences in home computer ownership among students.

White students are significantly more likely than African Americans to have used the Web in the past six months (58.9% vs. 31.1%). However, the gap disappears when we considerthose students who have a computer at home– 66.7% of white and 63.8% of African American students with a computer at home have used the Web in the past 6 months. The gap prevails when we consider those students who do not have a computer at home– 37.8% of whites compared to 15.9% of African Americans have used the Web in the past six months (Novak and Hoffman, 1998:3).

To explain this difference, the authors considered access to computers at school. They found that Anglo and African American students appeared to have equal access to the Web at school, regardless of whether they had a computer at home.[8] Thus, of those students who did not have a computer at home, Anglos– but not African Americans– appeared to be finding alternative means of access to the Internet through friends and relatives, libraries, and community centers. These results strongly suggest that, in terms of students' use of the World Wide Web– particularly when they do not have a home computer– race matters.

The researchers' analysis also revealed that white students were significantly more likely than African American students to have used the Web in the last week. However, there were no differences in use when students had a computer at home. White students without a computer in the home were more than twice as likely to have used the Web in the last six months compared to African American students without a computer at home. The researchers concluded that white students lacking a home computer were far more likely to be accessing the Internet from locations such as homes of friends and relatives, libraries and community centers.

Thus, it is important to create access points for African Americans in libraries, community centers and other nontraditional places where individuals may access the Internet and to encourage use at these locations... (Associated Press, April 16, 1998).

Novak and Hoffman also found differences in user profiles. Black Web users are more likely to be both newer and less frequent users of the Internet and more likely than their white counterparts to use the Web during office hours (1998, p.8). Although Whites and Blacks are equally likely to search the Web for information about products in general, Whites are significantly more likely to search for product information before purchase, more likely to have purchased online, and more likely to search for company information. Due to the relatively small numbers of African Americans online, it is not surprising that they were more likely than Anglos to state they would like to acquire access: 27.2% of African Americans and 16.7% of Anglos stated they planned to purchase a home computer in the next six months (p.3). The researchers did not study why African-Americans are less likely to have computers, but say they hope that future studies will examine that issue. President Clinton's "aggressive plan to wire schools is only part of the solution– the other part has to come from industry itself," asserts Hoffman (*Wall Street Journal*, April 17, 1998).

The Vanderbilt study also revealed that things are not as bad as they seem when it comes to numbers of African American Web users. The number of African Americans online is five times the popular estimate of one million that is frequently reported in the popular press (*Interactive Marketing News*, 1997; Novak and Hoffman, 1998:8). By January of 1997, over 5 million African Americans had accessed the World Wide Web. "This means that African Americans are already online in impressive numbers, and that continued efforts to develop online content targeted to African Americans, commercial or otherwise, are likely to be met with success" (Novak and Hoffman, 1998:8). Additionally, differences in user profiles are expected to disappear as minority group members spend more time online (Novak and Hoffman, 1998:8).

Discussion

According to an April 1999 study by the nonprofit U.S. Internet Council, the race, class, and gender divide on the Internet is narrowing. Nearly one quarter (23 percent) of African Americans and slightly more than one third of Hispanics (36 percent) are now online, with both of those percentages expected to hit 40 percent or more by next year. The percent of women using the Internet is expected to hit 50 percent by next year, reaching the same level as men. The study also says that just 7.5 percent of the U.S. population lives in an area with no local Internet service provider (ISP), while over 75 percent live in area with four or more ISPs to choose from (*Washington Times,* April 14, 1999).

Another study– this one by the Pew Research Center for the People and the Press– also indicates that the demographics of Internet users are rapidly changing. The Information Superhighway is no longer an elite club of young, well-educated, computer-savvy affluent males. This study supports Novak and Hoffman's findings that the doors have been opened to a more mainstream audience, including individuals with less formal education, the middle-aged, the middle classes, racial and ethnic minorities, and women. Although the 74 million Internet users in the U.S. are still younger, better-educated and more affluent than the population at large, 40 percent of Internet newcomers never attended college and 23 percent have household incomes below $30,000 a year (Associated Press, January 14, 1999).

Despite narrowing inequities in some areas of electronic technologies, we have a long way to go before we can claim they are fair and democratic educational tools. Information technology, which at first glance seems a non-discriminatory pedagogical tool, shares many of the inequities of traditional education. The Internet is not a place free from the influences of power, privilege, and prestige. The capability to control settings (like the Internet), is one of the major prerogatives of power (Giddens, 1983: 206-9), and– at least at first glance– this power is available to anyone with an e-mail account. However, a closer look reveals that the same types of inequalities and discrimination that plague the physical world are also present in the virtual world. Power is inherently unequal, and this inequality is as much a part of virtual societies as it is a part of the physical world.

In this next section I discuss two ways in which policy and change are likely to be effected. The first discusses developing a community based program to increase computer access and ownership among marginalized students, and the second addresses inappropriate behaviors.

Policy Implications

Increasing Access and Ownership for Marginalized Students

Asked about the impact of computers and the Internet on society, Vanderbilt University Management professor Donna Hoffman remarks,

"Will we really transform society through the use of computers and the Internet? Well, the jury is still out. I certainly think the potential is there, but it will be realized only if we can get access in the hands of everyone. Otherwise, we are not likely to see revolutionary changes. And we will still have the schisms and chasms in society where there will be sectors of society in which people are able to partake of the wonderful riches online, and at the same time other groups are effectively excluded. I don't think there will be much evidence of the transforming powers found in creating new sources of value until we have people online who we never thought would come online. If we're serious about change, we need to be thinking of getting entire countries– the developing countries and societies– online (July 12, 1998).

Overall, white students are more likely than African American students to use the Web. However, when they have a computer at home, the racial divide in Web use disappears. Household income explains race differences in home computer ownership, but has little direct effect on Web use.[9] Moreover, increasing levels of education– itself correlated to socioeconomic status– positively influence both computer access and Web use. However, Anglos are still more likely than African Americans to own a home computer after controlling for educational differences. Additionally, Novak and Hoffman's research reveals that Whites are more likely than African Americans to have access to a computer at home and work, while African Americans are more likely to want access. The policy implication here is clear. To ensure the participation of all people in the ET revolution, marginalized students need multiple points of access to libraries, community centers, and other non-traditional places where individuals may access the Internet, and (2) education, guidance, and encouragement by community members and educators through community-based outreach and mentoring programs.

One such program is analyzed by Dr. Merlinda Gallegos (1999) in *Neighborhood Councils: A Family-Driven Approach to Community*

Change, a report on Nevada's neighborhood-based, community-driven Family Resource Centers (FRCs). FRCs– instituted as facilities within "at-risk" neighborhoods– were introduced by Governor Bob Miller in 1995 as "social laboratories testing new approaches to meeting [community] need and providing a focal point for community action" (Nevada's Family Resource Center Project, 1997:1). Each FRC is responsible for organizing a neighborhood council which conducts a needs assessment of its targeted neighborhood and creates "a service delivery plan unique to the demography and desires of the residents, and responsive to changing needs and resources" of each community (Nevada's Family Resource Center Project, 1997:1). Traditionally, FRCs in Nevada have been a valuable community resource which has educated, and in many ways liberated, individuals in some marginalized areas. With the appropriate funding, FRCs in any "at-risk" neighborhoods could serve as points of access to the Internet and the Web for marginalized students and community members.[10] The idea here is simple: Access, encouragement, and education will translate into usage.

Inappropriate Behaviors

Electronic technologies are not the cause of harassment, lewdness, or stalking, rather they serve as tools that– in the wrong hands– may be used for these purposes. However, the complexities, ambiguities, and virtual anonymity of electronic communication may provide an environment that is more conducive to inappropriate and harassing behavior. Electronic harassment should not be considered any less harmful than harassment in a face to face situation. Although many victims of electronic harassment may never actually see their harasser they experience many of the same feelings as those who are harassed in person; including fear, anxiety, embarrassment, powerlessness, and anger (Monson and Dalaimo, 1994). Victims of both virtual and real-world harassment share common reasons for not filing complaints: fear of retaliation; the desire not to be labeled as emotional, over-sensitive, or vindictive; and the general lack of support for victims, which is common due to organizational socialization and the implication that many of these harassing behaviors are acceptable (Paludi and Barickman: 124-25).

Colleges and universities across the country have been advised by the Electronic Privacy Information Center in Washington, D.C. to examine their harassment policies and state anti-stalking laws to determine how they deal with students and staff who electronically harass or threaten other system users (Sandler, 1994:5). The Massachusetts Institute of Technology (MIT) has pioneered a program to address issues of electronic harassment, appropriately named "Stopit." In the first year of the program's existence Stopit handled 89 incidents, including pornographic images used as screen backgrounds (27%); harassing electronic mail (23%); improper use of the system (19%); and obscene or harassing interactive messages, such as "I'm stalking you"(10%) (Costello, 1993:286).

MIT's Stopit program has addressed these problems in an intelligent and aggressive manner. Stopit was initiated after several incidents of "harassment via electronic messages, displays on public workstations offending other users, and improper use of scarce public workstations for other than intended academic work" (Jackson, 1993:1). The purpose of the program is to both educate system users as to what is appropriate electronic behavior and also to offer avenues of recourse to users who have been offended and/or harassed. As Gregory A. Jackson, Director of Academic Computing at MIT explains, the Stopit

"mechanisms" are based on the proposition that "most offenders, given the opportunity to stop uncivil behavior without having to admit guilt, will do so" (1993:1). These mechanisms were designed to (1) discover harassment, improper use, and other uncivil behavior rapidly, and (2) to communicate effectively with its perpetrators, i.e., to "Stopit."[1]

It is through the act of communicating that society actually operates and evolves, and our evolution will bear the signature of the increased use of computer-mediated communication around the world. If the social order is the "result of past human activity" and "exists only insofar as human activity continues to produce it" (Berger and Luckman, 1966: 52), then it should be possible to "re-create" a more effective, more accessible, less conflictual, and less alienating computer-mediated environment. An environment that offers the same opportunities for all individuals regardless of race, ethnicity, sex or gender, age, or ability.

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Endnotes and Sources

[1] Co-sponsored by MCI and Educational Testing Service. The test/survey can be found online at <http://www.nettest.mci.com>.

[2] A discussion of marginalized students follows in the next section.

[3] That is, individuals who portray themselves as women or yourng boys, since it is impossible to know for sure over CMC.

[4] It is important to understand that this is merely a theoretical conceptualization for analytical purposes and no comparisons should be made as to who is more marginalized than whom. Each individual situation differs in its own right with varying social, economic, political, religious contexts.

[5] Referred to as "underprivileged students" in this study.

[6] The IDS is based upon an unrestricted random digit dial sampling frame, and use a computer assisted telephone interviewing system to obtain 5, 813 respondents. Weighted, the 5,813 respondents represent and allow projection of the total population of 199.9 million individuals in the U.S. aged 16 and over.

[7] The last two differences were not statistically significant.

[8] Differences in school technology are likely to have a significant impact on the quality of access and use.

[9] Exceptions include those with either home or work access at the higher income levels.

[10] For a detailed discussion of Dr. Gallegos' participant observation research of Southern Nevada FRCs, see Gallegos, Merlinda R. (1999). *Neighborhood Councils: A Family-Driven Approach to Community Change.* Dissertation: University of Nevada-Las Vegas.

[11] For a detailed discussion of MIT's Stopit program, See Dalaimo, D. M. (1997). Electronic Sexual Harassment. Pp 85-103 in Sandler, B.R. and Shoop, R. *Sexual Haassment on Campus: A Guide for Administrators, Faculty and Students.* Boston: Allyn and Bacon.