Kids Have Access, Enjoy Computers: Libraries Key for Many, Especially the Disadvantaged

A Report to the
Bill & Melinda Gates Foundation
U.S. Library Program

On a Telephone Survey of Youth Ages 12-18

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***Abstract**: Telephone interviews with 500 children 12-18 years old whose parents — whom we had also interviewed — gave permission for them to be contacted about their computer and Internet use indicate that nearly all of them have access to both, usually at several sites including home, school, friends' and relatives' homes, and the public library. Whether or not they had a computer at home was important to them; key predictors of computer use were parental computer use, household income, and parental education levels. Those without home computers tended to be on the disadvantaged side of the digital divide, and they were explicit in saying they felt disadvantaged in terms of being able to complete their homework and get good grades. Whether or not they have a home computer, these students appear skilled in orchestrating their computer use among their access sites, depending on the characteristics of machines and conditions at each site and what they want to accomplish. Altogether, they use computers for an average of 435 minutes per week, 37 minutes of that at public libraries during an average of 1.7 visits. Nearly all of them — especially those without home computers — want more library access, wishing the library had more public access computers, longer time limits for use, and expanded hours. Not surprisingly, the primary uses these students make of computers and the Internet are looking up information for school assignments and word processing, but the older and more skilled they are, the more uses they report, with significant numbers also finding news and information on the Internet, engaging in varieties of social activities [playing local and online games, chatting with friends (especially girls), downloading (especially boys), and more advanced programming, and video editing]. These students comfortably teach and learn from one another, and 80% said they had taught adults at home and in libraries. Further, many said they would be willing to be part of a group volunteering to teach at public libraries.*

Background.

As part of our ongoing assessment[1] of the Bill & Melinda Gates Foundation's U. S. Library Program,[2] the Public Access Computing Project (PACP) conducted RDD telephone interviews[3] with national samples[4] of adults in the summers of 2000 and 2001. We asked parents of children 12-18 years of age if we could call back to interview their children about their use of libraries, computers and the Internet. This paper reports[5] on what we learned from 500 children whose parents agreed they could be interviewed and who could be contacted for telephone interviews[6] three to fifteen months later.

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[1] The Public Access Computing Project (PACP) at the University of Washington is directed by Andrew C. Gordon, Professor at the Daniel J. Evans School of Public Affairs.

[2] The Bill & Melinda Gates Foundation's U.S. Library Program—with its mission to assist libraries in providing access to computers and the Internet — began in 1997, installing packages of computers, software, training, written publications, and long-term technical assistance in public libraries in the U.S. and Canada. By the end of 2003, over 40,000 computers and software will have been installed in over 10,000 U.S. libraries.

[3] Random Digit Dial interviews of 20-45 minutes were conducted by Pacific Market Research of Renton, WA in 2000 and 2001.

[4] There were a total of 13,494 adults interviewed in national samples, oversamples in 18 "focus" states where other data were gathered from library patrons and library staff, and oversamples of families living in very low-income areas.

[5] See also a much more detailed PACP report, "Kids Have Access, but Variations on Digital Divide Persist", by Elizabeth Moore, Margaret Gordon and Andrew Gordon, August, 2002.

[6] These interviews were conducted by Pacific Market Research.

In addition, we re-contacted a number of adult library patrons who had volunteered comments about children in their written surveys in order to see if their views had changed over time with respect to children's use of computers, especially in libraries.

In general, compared with the parents of children who were not interviewed in this study, either because their parents refused or because they could not be reached, the parents of children who were interviewed had more education, were more likely to be Caucasian and to have higher incomes. They were more likely to be computer and Internet users, and more likely to have access both at work and at home. Accordingly, their children were also more likely to have home computer access, while the parents of the non-interviewed children said their children were more likely to have access at a friend or relative's. Overall, the two groups were equally likely to say their children had had a chance to use computers, but differed in where their children had access.[7] Therefore, our interviews are with a relatively privileged sample of children and the results overestimate home computer and Internet access relative to the general population of children, but may not overestimate the overall exposure of 12-18 year-old children to computers and the Internet since many use computers at places other than home.

Slightly more than half of the sample (52%) was boys, with an average age of 14.6 years. Most of the children (89%) attend public school, while 8% attend private or parochial schools, and 2% are home-schooled. Just over three-fourths (77%) are Caucasian, and 9 % are African-American, 10% are Hispanic, 3% are Native American, and 1% are Asian.[8] Well over half of the sample (62%) lives in small towns (32%) or rural areas (30%), and the remainder live in urban (21%) or suburban (17%) areas. Fifteen percent of the children live in households where the parents reported a total household income of less than $25,000, and 29% live in a household where at least one of the parents has no more than a high school education.

Findings

Computer and Internet use. Nearly all children interviewed said they had used a computer (99%) and the Internet (98%) and most have at least some access to computers somewhere—home (90%); school (library [75%], computer lab [69%], or classroom [65%]); at a friend's or relative's (54%); or the public library (50%)—and many have access at multiple sites, in fact, at an average of 4.2 places. On average, the students reported using computers at all their access sites for a total of 435 minutes, or a little more than an hour a day, "during the past week." Eighty-four percent of the students also say they have home Internet access.[9]
Although many children learn to use computers in their early years, age is, nonetheless, an important factor when describing Internet access and use. In our sample, students 14 years and above reported spending significantly more time using computers, and having access to the Internet at more locations than younger children. But no matter how much access children have,

[7] See the full report for analyses of differences between parents who agreed their children could be interviewed ("consenters") and those who refused permission for their children to be interviewed ("refusers").
[8] According to the census, the general population figures are: Caucasian, 71%; African American, 12%, Hispanic, 12%; Native American, 1%; and Asian, 4%.
[9] This is a further indication of the nature of our sample of children in this phone survey. According to the 2002 NTIA report, 75% of 14-17 year olds and 65% of 10-13 year olds use the Internet.

almost all say they wish they had "at least a little more" and some want twice as much time as they have now, or even more.

Only four of the 500 students we interviewed said they don't use computers and only ten said they don't use the Internet. Of the four that don't use computers, one responded, "not interested" to a question about why not, and three said they didn't have access. Of the 10 who said they don't use the Internet, two said they didn't have access and the others gave various reasons indicating parental control over access, such as "It costs too much for kids," or "there is a lot of stuff on the Internet that is not good for kids."

The Public Library as an Access Site. Most of the students interviewed (70%) have their own library cards, and about half (52%) said they had visited the library "since the beginning of school" (about two months before the interviews). Sixty-six percent said they "can use the library computers" for school work, and half (50%) reported doing so. Almost that many (48%) said they use the Internet at the library.

These relatively large proportions correspond to the perceptions of adults, many of whom see the library as "overwhelmed" with kids, especially after school hours. (This clearly reflects the fact that students all too rarely have access at school libraries or computer labs once school is over for the day.) How close a child's school is to the library may also make a difference in the students' use of the library computers; if schools and libraries are close to one another, it is easier for children to go from one to the other. Discussions with library staff suggest that, over time, some libraries and schools (but not many) are developing informal relationships regarding computer use, especially for students who do not have computers at home. (In one productive relationship, a far-sighted library in the south invites all the teachers in their area to a lunch before the school year begins. The school staff are reminded of the services of the library, and the discussion of school plans enables the library to plan book lists, Internet sites, etc. in support of the educational missions.)

Interestingly, *home* computer or Internet access does not influence whether students use the computers at the library. However, the amount of *school* computer and Internet use children have is related to how much they use the *public library* computers, and in a way which runs counter to our intuition: When students in this study report having access to computers in three places at school [school library, school computer lab, and school classroom(s)], they are more likely to use the *public library* computers than if they have access at fewer school sites. Thus, as school computer access increases, so does public library computer use. This may reflect different levels of interest among the students, and/or different levels of community commitment to computing for children. It is also related to whether the child attends public school or a private one: public school children are much more likely to have access at school than those who attend private or parochial schools.

Use of the library computers for doing homework and access to the Internet appears especially important for minority students, and those from low-income families, who are less likely to have home access and less likely to say that other kids they know have home access. Although two-thirds of all the students said they could use library computers for schoolwork, this jumps to 92% for African-American students and to 85% of those students who live in households with

incomes of less than $25,000. The African American students report that they typically use the public library computers more than the other students. Further, more of the African American and Hispanic students say they sometimes visit the library primarily to use the computers. Yet of those who use the library computers for schoolwork, nearly one-third (30%) say they "hardly ever" or "less than half the time" have enough time on these computers to complete their schoolwork. Ethnic differences also emerged among those who say they would not go to the public library for more computer access. Significantly larger numbers of the African American students report that: it is too difficult to focus at the library computer stations; that there isn't enough time on the library computers; that they don't feel comfortable in libraries; and they don't have a library card.

Nearly all the students (97%) say they use computers to "look up information" for their schoolwork, and almost as many (92%) say they use them for word processing. The children without home computers said that if they had a home computer, it might help them to finish their homework faster, earn better grades, and improve the appearance of their schoolwork. A few (13%) thought having a home computer wouldn't make any difference.

Nearly 80% think that "all" or "most" of the kids they know have access to computers at home. About two-thirds of the students, both those with and without home computers, agree that students get better grades on assignments if they use a computer to do them. There may be some basis for this belief since those that use computers more and perceive that they have good computer skills, also report achieving higher levels of performance in school.

Confirming comments came from patrons and librarians in many settings. For example, an adult patron from Alabama insists that the children she knows without home computers have improved their grades because of their use of library computers. She said that it is not only the access to the computers, but also the access to news and to educational programs that help them do better in school. Librarians in many settings report how valuable the computers have been, especially to children without any other access. Sometimes, they say, computer references or printed papers (as typewriters become increasingly scarce) are *required* by teachers for major reports. Many libraries noted the huge influx of minority students during Black History Week, an annual deluge that several prepare for well in advance.

The length of time children report spending on library computers varies markedly according to where else they have access, and is likely to be very much affected by the time limits set by library policies. Those children with access at home *and* school *and* the library use the library computers for fewer minutes per week than those who do not have as much access elsewhere. Those who rely on the library computers say they often don't have enough time on them to complete their assignments, presumably because of library time limit policies or hours. Although our sample of children reported spending an average of 435 minutes on computers "during the last week", the average time students who use the library computers at all reported being on the library computers "last week" was 37 minutes during an average of 1.7 visits. Although 70% of the students overall say they want more time on computers, *all* the students who say their favorite computer is at the library say they want more access.

Some of the students using library computers may be among a group we have labeled "computer seekers"—those with a particular interest in finding additional computing time for such reasons as computer programming or using the Internet for looking up current events, sports, entertainment or hobbies. The heaviest users (in terms of overall time at all sites where they have access), in addition to doing their homework, are most likely to be involved in online gaming, downloading music or videos, video editing, computer programming, chatting, e-mailing, and surfing.

The library computers sometimes provide the only source for advanced functions or software (e.g. PowerPoint) or color printing for all children, even those who have access to home and school computers.

Children's attitudes toward computers. Of the 99% of children interviewed who use computers, 98% said they enjoy using them and 97% said they like using the Internet. More than half (54%) first learned to use computers at home—some when they were as young as two years old—and most feel confident that their computer skills are "at least as good" as their classmates.

A number of adults mentioned that they have seen "tech-savvy kids" teaching other children in the library and volunteered that they, themselves, often get help from kids in the library. Such intergenerational teaching of adults by youth must be very common since what seems to be an exceptionally large percentage, 80%, of youth said they had already experienced teaching adults (including their own parents) about computers, and many (more girls than boys) said they would be willing to be part of a group of volunteers teaching or assisting adults in libraries. Contrary to popular beliefs, however, kids are not necessarily the household's only capable users. About one-fourth of the students who say they help their parents more with computers than their parents help them also say they learned to use computers in the first place from their parents.

Safety and computing in libraries: Adults seem to view libraries as "safe places" for children to go to use computers, both because they are less likely to be participating in "unsavory" activities there, but also because there are often rules or filters preventing access to pornographic or violent websites. One library in Florida has several branches that share space in neighborhood police stations and these have become "homework" centers favored by parents concerned about their children's safety, especially at night. One large Somali family where we interviewed and observed the father and the children said that they value the public library as a "welcoming" environment where the children (who vary in their English competence and who help one another with homework) can have simultaneous access to computers in a "safe" and "educational" setting. Other parents, however, have indicated increased concerns about libraries as safe places since the arrival of the computers, especially in libraries serving large urban populations.

A number of parents indicate they often go to the library with their children and they all use different computers, assuming they are available, for different purposes. One said in her original interview, "I thank God for these computers—helps me so much with my business –helps my child with school assignments." A year later she said that they now have a computer at home, but she and her daughter still go to the library together and mentioned this is especially true during stormy times when their home electricity (and computer) are not so reliable. Another

who indicated that their family now has a computer at home said they, too, continue to visit the library because they learned it's a "happening place." Many of the students also said they sometimes go to the library to use the computers "just for fun".

Students without home computers were read a list of recreation items that might be important to a teen and asked whether they would trade that item (e.g. toys, VCR, sports equipment, video game system, cable TV, bike, TV, stereo or car) to have a computer at home. Overall, students reported a great willingness to trade many types of items to have a good computer. More than half said they would trade any of these items, except for a car. In addition, some students volunteered other items they would be willing to trade—including a t-shirt autographed by a movie star. One even volunteered to give up a little brother!

How children use computers and the Internet. In addition to using computers and the Internet for school work, the students also report using them for many other functions: playing games locally (84%), e-mail (82%), looking up information of personal interest and looking up current events (both 80%), generally surfing the web (78%), playing games online (63%), downloading music or videos (62%), participating in chat rooms (44%), shopping on line (32%), performing library functions such as reserving a book (28%), doing computer programming (21%), and doing video editing (11%). Many other functions were cited -- each by less than 10% of the students.

Interestingly, those students with more access sites, those who are older, and those whose parents have more income and education, all use the computers and the Internet for more functions. Students who want more time on computers also use the computers for more different functions, are more likely to be online gamers and more likely to be chat room participants and surfers. Conforming to stereotypes, the girls tend to use the computers and Internet in ways that enhance "communication," while the boys tend to use them for "downloading."

We should note that while librarians sometimes describe Instant Messenger (IM) and Chat Rooms (Chat) as if they are interchangeable in the danger they introduce, and in their disruption impact in libraries, , some of the students made a clear distinction between the two. Parents and librarians concerned about dangerous strangers in Chat Rooms might be interest in hearing about the value of IM for "private" conversations between students working on school projects, similar to an interactive e-mail. (More than one librarian also commented on the value even of Chat. "At least they're writing," as one librarian said, "and learning how to string words together.")

Discussion and Conclusions

Overall, the data in this report indicate that many of America's children have substantial access to computers and the Internet, most at home in addition to school libraries, school computing labs, classrooms, friends and relatives, as well as the public library. In a sense it appears that the digital divide for children has almost closed. Indeed, the percentages of people with computer and Internet access continues to climb, so that nearly all of the students in this survey report having at least some computer and Internet access. But 70% of these students still want more access – more so among minority and students from lower income homes, and up to 94% of those without home access. As the digital divide begins to close, those with the greatest need may be left behind if victory is declared without looking more closely at disproportionalities

among the groups that remain unconnected, or who once had access (typically at school) but no longer do (among a group we refer to as "former users").

Almost all of the students say they use the computers for schoolwork and word processing, but most seem to use them for a variety of purposes—including chat and downloading music and videos.

Children enjoy using computers, and believe that their computer skills are at least as good as their classmates. They value their access because they believe it leads to doing their school work faster, makes their work look better, and earns them better grades. As computer skills increase, so does their reported school performance.

Those who don't have computers at home say that having a computer at home would help them get their schoolwork done, have it "look nice" and improve their grades. They say they would "trade" many valued items to get them. Many students also value the computers because they are "fun."

Because most children have access at more than one site — the older they are, the more places they feel they can work — and they seem to be developing skills to "game out" where to use different computers for different purposes. They may strategize their computer use, knowing how far away and how long it would take them to reach different facilities, how many computers they have, available memory and processing speed, the waiting times, the time limits for use, the software available, and the printing rules and costs. This may allow them to move among options to suit their needs and interests.

Most of the students are quite confident of their own skill levels and ask parents and friends when they have questions. At the same time, a vast majority (80%) indicates they have helped others with computers at home, at school, or at the library. More than half in this study (more girls than boys) say they would be willing to be part of a group to help others—perhaps indicating a vast, largely untapped source of volunteers for many libraries. In many locations, children have become so ubiquitous among patrons that they have dramatically changed the ecology of public libraries – a subject we discuss in detail in an upcoming report.

The differences that still exist in computer and Internet access continue to favor the advantaged in our society—those with better-educated parents, those from higher income families, and those with computers at home. African American children depend most on the public library computers, followed by Native Americans, Hispanics and Caucasians. As students begin to use computers, they are primarily *consumers* of computer resources, such as information and recreation. Learning to use computers as *producers* of digital products and information – such as creating web pages, programming computers or other creative uses such as video editing, requires more access than libraries are currently able to provide. Thus, the digital divide still keeps the disadvantaged on the consumer side of computer use, making the leap to the provider side extremely challenging. The minorities in this study are among the most privileged, but still face challenges to their technology use which are less evident in the majority culture. These data from children with higher-than-average levels of access foreshadow issues that will become

more important and widespread and the computerization and digitization of our culture intensifies.