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Children and the Internet

It's fun, but does it make you smarter?

Researchers find a relationship between children's Internet use and academic performance.

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For most children and teenagers, using the Internet has joined watching television and talking on the phone in the repertoire of typical behavior. In fact, 87 percent of 12- to 17-year-olds are now online, according to a 2005 Pew Research Center report. That's a 24 percent increase over the previous four years, leading parents and policymakers to worry about the effect access to worlds of information—and misinformation—has on children. Psychologists are only beginning to answer that question, but a study led by Michigan State University psychologist Linda Jackson, PhD, showed that home Internet use improved standardized reading test scores. Other researchers have found that having the Internet at home encourages children to be more self-directed learners.

"We had the same question for television decades ago, but I think the Internet is more important than television because it's interactive," says Jackson. "It's 24/7 and it's ubiquitous in young people's lives."

The positive effects of Internet use appear especially pronounced among poor children, say researchers. Unfortunately, these children are also the least likely to have home computers, which some experts say may put them at a disadvantage.

"The interesting twist here is that the very children who are most likely to benefit from home Internet access are the ones least likely to have it," says Jackson. "It's a classic digital divide issue."

Point, click and read

In her research, published in a 2006 *Developmental Psychology* (Vol. 42, No. 3, pages 429–435) special section on Internet use, Jackson studied 140 urban children as part of HomeNetToo, a longitudinal field study designed to assess the effects of Internet use in low-income families. Most of the child participants were African American and around 13 years old; 75 percent lived in single-parent households with an average annual income of $15,000 or less. The children were also underperforming in school, scoring in the 30th percentile on standardized reading tests at the beginning of the study.

Jackson and her colleagues provided each family with a home computer and free Internet access. The researchers automatically and continuously recorded the children's Internet use, and participants completed periodic surveys and participated in home visits.

They found that children who used the Internet more had higher scores on standardized reading tests after six months, and higher grade point averages one year and 16 months after the start

of the study than did children who used it less. More time spent reading, given the heavily text-based nature of Web pages, may account for the improvement. Jackson also suggests that there may be yet-undiscovered differences between reading online and reading offline that may make online reading particularly attractive to children and teenagers.

"What's unique about the Internet as compared with traditional ways of developing academic performance skills is that it's more of a fun environment," she says. "It's a play tool. You can learn without any pain. Beneficial academic outcomes may just be a coincidental effect of having a good time."

What's more, online reading may enhance skills that traditional book reading doesn't tap, says Donald Leu,PhD, the John and Maria Neag-Endowed Chair in Literacy and Technology at the University of Connecticut and director of the New Literacies Research Lab. He's found no substantial association between online reading comprehension performance and performance on state reading assessments, as described in a 2005 report submitted to the North Central Regional Educational Laboratory/Learning Point Associates (available online at www.newliteracies.uconn.edu/ncrel_files/FinalNCRELReport.pdf). That's because online reading takes different skills than traditional book reading, he says. Online reading relies heavily on information-location skills, including how to use search engines, as well as information-synthesis and critical evaluation skills.

"The studies that just look at learning fail to recognize that you have to have these online reading comprehension strategies in place before you can really learn very much with Internet information," says Leu.

Leu is looking for ways to improve adolescents' Internet reading comprehension through a three-year, U.S. Department of Education-funded research project, coled by reading education expert David Reinking, PhD, Eugene T. Moore Professor of Teacher Education at Clemson University.

About half of the children the team studies don't use search engines, Leu says, preferring to zuse an ineffective "dot com strategy." For example, if they are searching for information on the Iraq War, they will enter the URL "iraqwar.com." This often leads to ad-filled trap sites that provide incorrect or irrelevant information, says Leu. And, the 50 percent of children who do use search engines use a "click and look strategy" of opening each returned site instead of reading the search engine synopsis. If a site appears as the children imagine it should, they believe it's reliable, he says.

Leu and colleagues asked 50 top reading seventh-graders from school districts in rural South Carolina and urban Connecticut to assess the reliability of a slickly designed Web site on the mythical "endangered Pacific Northwest Tree Octopus." Though the site is a known hoax, all but one child claimed it was scientifically valid. And even after the researchers informed the participants that the site was a joke, about half of the children were adamant that it was indeed truthful, says Leu.

Self-directed learners

To help children winnow the tree octopus sites from legitimate information, they must develop online reading comprehension skills. These skills are particularly crucial because other researchers have found that children go online to clarify what they're being taught in school.

"Instead of waiting for a tutor or someone to help them, they are very proactive in seeking help for themselves," says Kallen Tsikalas, director of research and learning services for Computers for Youth (CFY), a national educational nonprofit organization.

Home Internet use during the middleschool years appears to empower students and reengage them in learning at an age when their academic achievement traditionally drops, adds Tsikalas.

Indeed, 70 percent of students in CFY's program consistently say that having a home computer helps them become more curious and feel more confident, and nearly two-thirds of students report working harder in school because they have a home computer, the organization reports.

Though researchers have found encouraging evidence that Internet use can help children stay interested in school and develop reading skills, it's not an easy area to study, say experts.

"A big challenge to researchers here is that we are dealing with a major generational gap—we are still struggling to catch up with evolving technology and how young people are using it," says Elisheva Gross, PhD, of the Children's Digital Media Center at the University of California, Los Angeles.

The publication lag of scholarly research is also at odds with a technology that's changing and expanding by the day.

"Especially when you talk about books published on this topic, they are historical documents at this point," says Gross.

Is America lagging?

Although the challenges of studying Internet use abound, Leu argues that America needs to catch up with other countries that are harnessing the Internet for educational purposes. In Finland, for example, teachers take five weeks of paid leave to complete professional development training on teaching online reading comprehension and Internet-use skills. In Japan, the government provides 98 percent of its households with broadband access for only $22 a month.

"The government knows that kids read more out of school than they do in school, and they want to make certain that kids are reading online when they are at home," says Leu. "Most developed nations…know their kids will have to compete in a global information environment and they are trying to prepare them for that."

By contrast, America's "report card," the National Assessment of Educational Progress, just defined its framework for the 2009–19 assessment and chose not to include a measure of online reading skills.

"This is supposed to be the gold standard of our performance on reading, and until 2019 we are not going to have a handle on how our kids are doing on the most important information resource we have available," says Leu.

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