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## Digital divide project finds evidence that computers at home improve high school graduation rates

By Jennifer McNulty

Children living in homes with a computer are more likely to graduate from high school than young adults without computer access at home, even when factors like income and parental education are controlled for, according to UCSC researchers investigating the "digital divide."

Although many studies have explored the impact of computers in schools, and the federal government has made computer access in schools a priority, very few studies have assessed the impact on youth of having a computer in the home, said Robert Fairlie, associate professor of economics at UCSC and one of the lead investigators on the project.



Robert Fairlie's team documented a 6 percent to 8 percent increase in the high school graduation rate of youth in homes with computers.

Photo: Louise Donahue

The subject warrants study because 20 million children in the United States, or 26 percent of children, have no computer access at home, which could contribute to the nation's persistent racial disparities in access to computer technology--the so-called "digital divide," said Fairlie.

Using sophisticated econometrics to analyze two large national data sets, Fairlie and his research team sought to identify "spurious correlations" and isolate the impacts of home computers. They controlled for numerous factors, including income, education, race, and family motivation on educational outcomes.

Fairlie's team documented a 6 percent to 8 percent increase in the high school graduation rate of youth in homes with computers. Other positive impacts include a lower rate of school suspensions and overall higher grade-point averages among students in homes with computers.

Fairlie is one of four UCSC researchers conducting an ambitious investigation of the digital divide under the auspices of the Center for Justice, Tolerance, and Community (CJTC). Affiliates discussed the project during a lunch-hour presentation last week entitled "Race, Youth, and the Digital Divide."

More than 60 percent of homes in the United States have a computer, and Internet access is available in more than 50 percent of homes, said Manuel Pastor, a professor of Latin American and Latino studies. Less than 20 percent of homes have broadband Internet access, however.

The "digital divide" appears when the racial makeup of those homes is examined, explained Pastor. About 70 percent of Asian and Anglo homes have computers, compared with about 45 percent of African American and Latino households. Internet access reflects a similar gap.

Racial differences persist in broadband service, with more than 30 percent of Asian households having broadband, compared with about 20 percent of Anglo homes, and only about 10 percent of African American and Latino households, according to Pastor.

"Very sharp disparities are going unemphasized by the latest government report on computer and Internet access, 'A Nation Online,'" said Pastor. "Race, education, income, and language matter."

In previous work, Fairlie has found that racial disparities in access to computers at home are highest among the age group 8-25. "These patterns are particularly troubling in light of the presumption that information technology is a new prerequisite for success in the labor market," said Fairlie, a labor economist who specializes in minority entrepreneurship.

To further explore the value of computer and Internet access for youth,

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the project is conducting in-depth qualitative research at five community technology centers (CTCs) around the country. The findings will shed light on how CTCs transform youth and communities, said CJTC associate researcher Rachel Rosner.

The five CTCs being evaluated have diverse goals and programs, from a rural drop-in center in California's Central Valley to a sophisticated Harlem-based web publishing operation run entirely by high school students, noted Rebecca London, an associate research professor at CJTC who is taking the lead on the qualitative part of the project. Yet each facility helps young people gain the technology-related skills they need while learning to interact with adults and within an organization, she said.

"The centers provide needed access to computers by filling gaps that exist at school and home," said London. "Each center has a particular role in the neighborhood, and they build networks that help youth in other aspects of their lives."

London's qualitative research on community technology centers, which represent an important access point for low-income youth, provides insights into how technology changes the lives of youths, especially in education. Her research, in particular, attempts to open the "black box" of how and why access to technology has effects on educational outcomes as found in the quantitative research.

The long-term goal of the project is to generate high-quality research findings that can shape the policy debate over how to "bridge" the digital divide. The project has funding from the W. T. Grant Foundation and the Community Technology Foundation of California.

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