Bridge the Digital Divide for Educational Equity

By Christine Y. Mason and Richard Dodds
From Principal

STUDENTS’ technological savvy has challenged schools to make greater use of computers and the Internet in their curricula. Unfortunately, not every student has the same access to it, and the inability to keep pace has created a digital divide that continues to widen.

The digital divide particularly affects students who are black, Hispanic, Native American, and poor. They are far less likely to have computers or Internet connections at home than their Caucasian or Asian peers. While two-thirds of white children have gone online, just 45% of black children and 37% of Hispanic youth have.

For students without a connection at home, schools are the primary source of computer access and often the only place they can go online. In addition, many students with disabilities cannot use computers or participate in

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online activity because the equipment in their schools is not compatible with their learning or physical needs.

As technologies continue to advance and provide enhanced resources for learning and research, critical questions arise: Will these technologies be available to all schools? Will they enable schools to close or at least narrow the digital divide?

We seem to be at a pivotal point in addressing inequities. Failure to provide adequate technological resources for all translates into failure to provide quality education, creating an even greater divide between affluent and poor school districts.

Some insights into the possibilities of future technology can be gained by examining five recent innovations likely to impact elementary schools in the next five to 10 years.

**Wireless networks** provide an alternative for schools that aren't adequately wired to access the Internet. They can provide improved access to online learning as well as the ability for students to receive distance learning instruction from teachers with certain skills and specialties not available at their schools.

**Electronic portfolios.** As electronic storage capacity becomes greater and more sophisticated, so does the ability of schools to establish and maintain detailed and comprehensive electronic portfolios for all students. These cumulative portfolios would document current student learning and record progress over the years.

**Portable technologies.** An example of the possibilities of small, portable technologies is a projected high school in Philadelphia where every student will have wireless personal tablet computers and personal digital assistants (PDAs), rather than traditional desktops.

**Attractive technologies.** The continuing enhancement of computer-aided instruction utilizes features from video and computer games to motivate students and keep them engaged. These software programs often provide immediate feedback and, with inclusion of Universal Design for Learning (UDL), can provide information in formats accommodating a wide array of learning styles and needs. A major time-saving feature of UDL is that supports are built in as the software is manufactured and therefore are ready when teachers and students need them. With UDL, teachers can dramatically reduce time spent developing alternative materials or helping students with trouble reading and writing. For example, students can use UDL to enlarge print, have materials read to them, or even dictate test answers.

**Virtual schools.** A WestEd study estimated 40,000 to 50,000 students were enrolled in online courses in 2001-2002 and at least 14 states have sanctioned online
"virtual schools." Many of these are privately-operated charter schools, some supporting home schooling. While virtual schools began at the secondary level, a number are now operating at the elementary level as well, supplementing instruction mostly in rural and small schools.

To address the digital divide, schools must provide full access for special student populations—especially those with disabilities—to the Internet, distance learning, and multimedia materials. Some resources are now available as specially designed assistive technologies. In fact, a software program using voice commands for a keyboard, originally designed for the hand-impaired, is now a tremendous tool for students with difficulty learning to use keyboards.

Some technology solutions are costly and require additional funding. However, many useful low-cost technologies are available, and schools must consider them in evaluating and ordering new technology.

While adequate funding is essential to close the digital divide, funding spent unwisely will not help. Decisions on purchase of technologies should be integrated within a plan developed with adequate consideration of educational, technological, and societal trends.

Solutions must address the different but critical needs of students in poverty, those for whom English is a second language, and others with disabilities denying them access to classroom technologies. These concerns require that schools have someone on staff, perhaps a technology specialist, stay informed and up-to-date on technologies that will facilitate learning for special populations, and that teachers receive sufficient training to use them.

To ensure all students can access the Internet, students with special needs can benefit from features like Web trackers, which let them make their own decisions on font size, color, and other UDL features. Personalized features students use with their computers stay "turned on" when they are on the Internet or participating in distance learning.

This type of behind-the-scenes support is available from ADA & IT Technical Assistance Centers at www.adata.org. These centers can help schools with technology planning and purchasing decisions, as well as technology implementation.

Solutions to technology inequalities ultimately rest with principals in their role as instructional leaders. Their experience and wisdom will be tested over the next few years as they strive to narrow the digital divide with policies based on fairness and consideration for the technologically disenfranchised. Addressing the digital divide is a small step that could make an enormous difference in educational equity for the nation's children.

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