Welcome

Welcome to the third issue of Educational Technology News, a biannual newsletter published by the Center for Technology at NCREL. As one of 10 regional educational laboratories funded by the U.S. Department of Education, NCREL has been a leading research laboratory, helping hundreds of schools integrate technology effectively since the mid-1990s.

This issue presents the initial results of a study of high-performing, high-poverty, and/or high-minority schools currently being conducted by the Center for Technology. It also highlights several new products created by the center during 2002 and gives readers a chance to learn about NCREL’s Quick Keys series.

Thank you for your continued interest in our work. NCREL invites you to learn more about the Center for Technology by visiting our home page (www.ncrel.org/tech).

Research Spotlight: NCREL Studies Technology Use in High-Performing, High-Poverty, and/or High-Minority Schools

By Jim Sweet and Isabel Ochoa, NCREL Center for Technology

“The Education Trust [has] ... identified 4,577 high-flying schools nationwide that are in the top third of poverty in their state and also in the top third of academic performance. Whatever these schools are doing to perform so well, and we need to understand that better than we do now, it is very unlikely that they have teachers who are dramatically different from teachers in less effective schools. ... Again, there is a main effect, something going on in the school as a whole that affects the practice of all teachers in the school, and raises student achievement accordingly” (Whitehurst, 2002).

How often do administrators, teachers, and students in successful schools use educational technology? For what kinds of purposes do teachers and students in successful schools use educational technology? To what extent does educational technology contribute to the success of these schools? In order to address these questions, NCREL conducted telephone interviews with the principals of high-performing, high-poverty, and/or high-minority schools in the North Central region. We selected a purposive sample of
successful schools based on previous studies by the Education Trust (Jerald, 2001).

High-performing means that both reading and math performance of students was in the top third among all schools in the state at the same grade level. This represents a subset of schools identified by the Education Trust in which students' reading or math performance was in the top third among all schools in the state at any grade level. The more restrictive definition is consistent with No Child Left Behind (NCLB) requirements for adequate yearly progress in both subjects. High-poverty means that the percentage of low-income students in the school was at least 50 percent and ranked in the top third of schools at that grade level. High-minority means that the percentage of African-American and Latino students in the school was at least 50 percent and ranked in the top third of schools at that grade level.

Of the 188 qualifying schools in the North Central region, 109 principals agreed to be interviewed (response rate equals 58 percent) between August and September 2002. One important finding was that 90 percent of the principals themselves use technology for professional purposes every school day. All but one principal reported using technology for professional purposes at least weekly. In addition, the principals of the high-performing schools reported that 84 percent of their teachers use technology for professional purposes every school day, and 96 percent use technology at least weekly. The principals estimated that 49 percent of their teachers assign their students to use technology every school day, and 77 percent assign students to use technology at least weekly (see table).

We also asked principals to name the most common teacher and student uses of technology in their schools. The teacher uses of technology cited by principals most frequently were Internet (57 percent), research (52 percent), e-mail (52 percent), word processing (46 percent), grading (39 percent), lesson planning (31 percent), presentation/demonstration (23 percent), and attendance (16 percent). No other teacher use of technology was cited by more than 15 percent of the principals interviewed. The student uses of technology cited by principals most frequently were Internet (69 percent), research (69 percent), word processing (57 percent), reading (38 percent), skills development (35 percent), presentation (28 percent), writing/language (20 percent), reports (17 percent), and keyboarding (15 percent). No other student use of technology was cited by more than 15 percent of the principals interviewed. Some other student uses of interest cited by fewer than 15 percent of principals were e-mail or keypals (9 percent), spreadsheets (8 percent), creating Web pages (7 percent), distance learning (6 percent), and digital cameras or movies (6 percent).

### Frequency of Teacher and Student Technology Use

![Bar chart showing frequency of teacher and student technology use weekly and daily.](chart.png)
According to the principals of high-performing, high-poverty, and/or high-minority schools, it is clear that teachers and students in successful schools use technology frequently for a variety of purposes. But do the principals of these schools believe there is a link between educational technology and the success of the school? When we asked the principals to think about all the factors that contribute to the high achievement of their students, 36 percent said that technology is a very effective tool, and 63 percent said that technology is an effective tool for increasing student achievement. Only 26 percent said that technology is not an effective tool, and none said that technology is a counterproductive tool for increasing student achievement. In addition, 99 percent of the principals also said that technology is a very effective or effective tool for school improvement.

NCREL’s interviews with principals of high-performing, high-poverty, and/or high-minority schools reveal that most of these schools could also be considered high-technology. Administrators, teachers, and students in successful schools use technology frequently for a variety of purposes. Our future research will examine in more depth the educational technology practices of some of these schools. We want to understand how the high-performing, high-poverty, and/or high-minority schools use technology in ways that set them apart. The preliminary evidence indicates that teacher and student uses of technology in these schools appear to be consistent with a national sample (Becker, Ravitz, & Wong, 1999). We hope to discover some main effects—something going on in these schools as a whole that affects the educational technology practices of all teachers in the school and raises student achievement accordingly. In addition, we hope to present findings that will investigate the professional development available for the teachers in these high-performing, high-poverty schools. Also, we intend to investigate reading and math programs as well as other program initiatives these schools have launched in the past five years.

Look for more in-depth results of this study over the next year via the Center for Technology Web site (www.ncrel.org/tech).

References


populations, and providing training and accessibility to parents. The additional technology goals of Part D stress effective integration of technology into teacher professional development and content teaching. The overall goal, however, is to help students reach technological literacy by the eighth grade. This Quick Key provides brief answers to questions about integration activities, funding, and accountability. Additionally, the tool presents some standards of the International Society for Technology in Education to illustrate the technology proficiency requirements expected of every child in America.

Understanding the No Child Left Behind Act of 2001: A Quick Key to Reading focuses on the key concepts of the legislation and reading programs. Funding from some of these programs can be used to assist K-3 educators in focusing on integrating technology into students’ opportunities to learn to read. These programs will particularly affect schools with a high number of students reading below grade level and students living in poverty. Essential elements of the Reading First program are highlighted, and suggestions for upper-grade students are provided.

Understanding the No Child Left Behind Act of 2001: A Quick Key to Mathematics and Science emphasizes the core goals of mathematics and science partnerships under Title II, Part B. This section of NCLB encourages the improvement and expansion of teacher professional development. The essential elements of Title II, Part B, highlighted in the Quick Key, underline the importance of scientifically based research and effective technology activities in teaching and learning the core subjects of mathematics and science. It is important to note that the Mathematics and Science Partnerships Program is specifically designed to focus on high-need schools and districts.

NCREL’s two additional Quick Keys focus on English proficiency and opportunities for schools in need of improvement. Understanding the No Child Left Behind Act of 2001: A Quick Key to Opportunities for Schools in Need of Improvement outlines five opportunities for schools identified for improvement: (1) the development of a two-year school improvement plan, (2) public school choice, (3) supplemental services, (4) corrective action, and (5) restructuring for alternative school governance. A set of questions for administrators and parents will help the reader navigate through the five opportunities.

In an effort to increase academic achievement of every child, the adequate yearly progress measure will apply to all student subgroups, including limited-English-proficient (LEP) students. Understanding the No Child Left Behind Act of 2001: A Quick Key to English Proficiency stresses the importance of improving the instruction of LEP students. As this Quick Key suggests, technology is among the immediate means for helping states increase academic achievement of LEP students in their learning, assessment, and instruction.

New E-Learning Products Focus on Practice, Policy, and Research

By David Durian, NCREL Center for Technology

E-learning, or electronically delivered online learning, is one of the most significant new learning technology applications for supporting the improvement of teaching and learning in the last decade. A growing body of research, program evaluation, and policy analysis is documenting the rapid implementation of e-learning in K-12 schools throughout the United States. In response to increasing interest, NCREL has released a suite of products exploring the policy and practice aspects of e-learning, beginning with last year’s E-Learning Knowledge Base (available online at www.ncrel.org/tech/elearn), and continuing this year with the release of three new research pieces: (1) “Virtual Schools and E-Learning in K-12 Environments: Emerging Policy and Practice,” (2) Children’s Access to Computers and the Internet Through 21st Century Community Learning Centers: Preliminary Findings from a National Telephone Survey of Center Directors, and (3) Children Learning With Technology Beyond the School Bell and Building: What Do We Know Now?

Released in April 2002, “Virtual Schools and E-Learning in K-12 Environments: Emerging Policy and Practice” is an issue of NCREL’s popular Policy Issues newsletter. It summarizes the critical e-learning
issues related to education policy and provides educators with an overview of what works, based on recent research and program assessment. Utilizing research on the Concord Virtual High School conducted by SRI International, as well as NCREL’s own research documenting the implementation of online learning in K-12 learning environments throughout the state of Minnesota, this Policy Issue provides case-based examples of how e-learning has been implemented in several online environments that will be of particular interest to practitioners. The paper also provides educators with a number of significant research-based policy recommendations to support the integration of e-learning at the school and district level.

Children’s Access to Computers and the Internet Through 21st Century Community Learning Centers: Preliminary Findings from a National Telephone Survey of Center Directors is a research study that supplements the general findings presented in “Virtual Schools” by investigating the practical impacts of e-learning on children’s opportunities to learn in school- and community-based “beyond-the-bell” programs. The report, which was released in December 2001, presents the preliminary findings of a national telephone survey of 21st Century Community Learning Centers (CCLCs) conducted by the NCREL Technology Center during 2001. Created by Congress, the 21st CCLC program supports collaborative efforts of schools and other public and nonprofit agencies to plan, implement, or expand school-based projects that benefit the educational, health, social service, cultural, and recreational needs of the community by focusing on the learning needs of children. As the findings of this study indicate, the centers are having a positive impact on the learning outcomes of students involved in the programs. Specifically, the findings suggest that almost all centers provide students with access to computers, and nearly as many provide students with Internet access through a direct, rather than dial-up, connection. In addition, the findings suggest that the key to this successful impact on student achievement is a well-implemented technology infrastructure.

Supplementing the findings presented in the Children’s Access study, Children Learning With Technology Beyond the School Bell and Building: What Do We Know Now? is a research synthesis summarizing recent research on before-and after-school programs, summer school, community technology centers, and public libraries that are increasing children’s opportunities to learn outside the regular school day, school year, and school building. Released in June 2002, this report presents an extensive review of print and online sources investigating the impact of these programs on increasing children’s opportunities to learn with—and about—technology. As the findings of this report reveal, e-learning-focused programs are having a positive impact on children’s learning outcomes, although the full extent to which this learning is occurring still remains to be determined by future research.

Ultimately, the strategies and suggestions discussed in “Virtual Schools and E-Learning in K-12 Environments: Emerging Policy and Practice,” and the research findings presented in both Children’s Access to Computers and the Internet

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