




---

## The Principal as Technology Leader

 **Research Roundup** » Volume 21 Number 2, Winter 2004-2005 » page(s) 1-4

by Karen M. Hawkins

High tech is hot news as leading-edge technologies continue to grow significantly in public schools, with increases in classroom computers, DVD drives, laptop computers, wireless networks, and high-speed Internet access. As technology becomes a fixture in education, it challenges the principal to find ways to use it most effectively.

In tackling technology, the principal must play many roles: planner, leader, budgeter, and community liaison. He or she must create a vision for the school, with technology as the means to an academic end. Research consistently emphasizes instructional leadership, professional development, financial management, evaluation, and community support as characteristics of a solid technology plan.

This *Research Roundup* reviews some of the ways principals can use technology to strengthen student achievement, as well as increase their own productivity.

**Theodore Creighton** looks beyond “boxes and wires” to show how technology can improve learning.

**Bruce M. Whitehead and colleagues** discuss the key characteristics of an effective technology plan.

**The Consortium for School Networking (CoSN)** examines the use of handheld computing in K-12 schools.

**Cathy Ringstaff and Loretta Kelley** summarize research on how technology affects learning.

**The Consortium for School Networking** provides a survey highlighting the link between school and community support and technology budgets and planning.

---

**Creighton, Theodore. *The Principal as Technology Leader*. Thousand Oaks, Calif.: Corwin Press, 2003. 117 pages. Available from: Corwin Press, 2455 Teller Road, Thousand Oaks, CA 91320-2218. Paperback \$24.95; hardcover \$55.95. 800-818-7243; fax: 800-583-2665; e-mail: [order@corwinpress.com](mailto:order@corwinpress.com). Web site: [www.corwinpress.com](http://www.corwinpress.com)**

---

Far too often, principals see technology as hardware or software, rather than as an instrument to restructure and strengthen education. Theodore Creighton urges school leaders to look beyond the “boxes and wires” glitz of expensive computer labs and sleek Web sites to how technology in schools can become a catalyst for teaching and learning.

The book provides guidelines for principals to use in developing technology in their schools. It is a process that begins by asking where a school wants to go, why it wants to go there, and how to know when it has arrived. To answer these questions, Creighton says a school must first identify its strengths, weaknesses, opportunities, and threats. He stresses a jargon-free technology proposal based on a school’s mission.

Effective staff development is crucial to integrating technology. Creighton emphasizes constructivist strategies, with teachers using technology as a tool to construct knowledge. He describes a successful staff development program in an Idaho school district, where technology has advanced constructivist teaching and learning.

Creighton acknowledges that principals may encounter faculty members resistant to change. He argues that the best way to combat potential “resisters” and “saboteurs” is by involving all stakeholders in technology implementation. If teachers understand where they are going

with technology, they are less likely to oppose the journey.

He concludes with the observation that technology—when properly harnessed—is an excellent vehicle for both effective teaching and enhanced student achievement.

---

**Whitehead, Bruce M., Devon F.N. Jensen, and Floyd Boschee. *Planning for Technology: A Guide for School Administrators, Technology Coordinators, and Curriculum Leaders*. Thousand Oaks, Calif.: Corwin Press, 2003. 233 pages. Available from: Corwin Press, 2455 Teller Road, Thousand Oaks, CA 91320-2218. Paperback \$34.95; hardcover \$74.95. 800-818-7243; fax: 800-583-2665; e-mail: [order@corwinpress.com](mailto:order@corwinpress.com). Web site: [www.corwinpress.com](http://www.corwinpress.com)**

---

To narrow the technology gap in today's schools, Bruce Whitehead and colleagues present an argument for taking computers out of the lab and putting them into classrooms. This book serves as a resource to help school administrators integrate technology into the curriculum.

Blending current research with personal accounts, the authors demonstrate how technology in the classroom can benefit students and teachers. To best link technology and the curriculum, they recommend establishing a bank of four to six networked computers in a classroom.

The book highlights fundamental considerations that principals must address in their technology planning.

*Leadership and planning.* When planning for technology, leaders need to anticipate how students and teachers will be affected and establish suitable support structures. The book provides a hands-on worksheet outlining the responsibilities in getting a technology plan up and running.

*Staff development.* Because most teachers are not properly trained for implementing computers into the curriculum, at least 20 to 25 percent of a technology budget should be targeted for a solid professional development plan.

*Community awareness.* Making the shift from computer labs to networked classrooms must be included in a school's public relations plan. By engaging parents and the community, school leaders improve their chances for moral and financial support.

*Financial management.* School leaders must ascertain available financial resources and review costs to ensure the plan's affordability. To aid in securing additional finances, the authors provide strategies for grant writing.

*Evaluation and assessment.* Does the switch to classroom technology have administrative and school board support? Can it be measured by student learning outcomes? Such questions must be asked and answered when assessing a school's technology plan.

---

**Consortium for School Networking. *A Guide to Handheld Computing in K-12 Schools*. Washington, D.C.: Author, 2004. 60 pages. Available only as PDF file from: Consortium for School Networking, 1710 Rhode Island Avenue NW, Suite 900, Washington, DC 20036. \$19.95. 202-861-2676; fax: 202-861-0888. Web site: [www.cosn.org/](http://www.cosn.org/)**

---

Technology in the form of handheld computers can help busy administrators balance their daily duties. The impact of these devices in K-12 public education is explored in this report from the Consortium for School Networking, which covers background information on hardware, peripherals, connectivity, and cost.

Handheld computers—often called PDAs (personal digital assistants)—feature an operating system, a set of applications, and the ability to add new applications. Using case studies and data from handheld-using educators, the report shows how handhelds can help principals manage their schools and schedules by providing immediate access to key data, such as student schedules, budget figures, and student, parent, and teacher contact information. E-

mail and the Internet can be accessed on the go, and teacher evaluations can be enhanced by securing classroom observational data in real time. The guide also assesses the benefit of handhelds for teachers and students, such as classroom management and note-taking.

Educators cite the device's advantages, including affordability, portability, and immediacy, as well as increased student motivation and writing improvement. On the downside are management issues (*e.g.*, battery charging, transferring data to multiple handhelds), breakage, technical failure, shortage of applications, and security issues.

The report concludes with advice on effectively employing handhelds in schools, including policies and rules, setup and management, and professional development.

Although data indicate fewer than 10 percent of schools have secured handheld computers for educational use, the users provide valuable insight into how handhelds can transform leading, teaching, and learning.

---

**Ringstaff, Cathy, and Loretta Kelley. *The Learning Return on Our Educational Technology Investment: A Review of Findings from Research*. San Francisco: WestEd RTEC, 2002. 30 pages. Available free online at [www.wested.org/online\\_pubs/learning\\_return.pdf](http://www.wested.org/online_pubs/learning_return.pdf)**

---

As instructional leaders, principals must ensure that students are given the best opportunities to achieve academically. This review of research findings demonstrates how administrators can make the most of technology resources to improve student achievement.

The research, which focuses on efforts to implement technology in K-12 classrooms from 1993 to 2002, includes longitudinal studies, such as Apple Classrooms of Tomorrow (ACOT), West Virginia's Basic Skills/Computer Education program (BS/CE), and IBM's Reinventing Education program. The studies approach the application of technology in two ways: learning "from" computers (tutorial) and learning "with" technology (constructivist).

Although students displayed learning with both models, the authors—and most researchers—embrace the constructivist approach, which they designate as the more powerful tool for developing critical thinking, problem-solving, and research skills. For example, students who participated in the ACOT study showed an increase in inquiry, collaboration, and problem-solving abilities when compared with non-ACOT peers, while other studies indicated student growth in motivation and self-esteem.

Because technology will have little impact on learning without adequate instruction, teachers must know how to properly integrate technology into the curriculum. Research found that teachers with formal training used technology more often for instruction, which led to stronger student achievement.

Even for well-trained teachers to be effective, they and their students need easy access to technology. The research suggests a 1:5 computer-to-student ratio, but most classrooms far exceed this proportion. Many teachers cited lack of universal access as a major barrier to technology integration. The location of computers also affects accessibility: the BS/CE program showed student progress was strongest when computers were distributed in the classrooms, rather than centralized in a computer lab.

The authors conclude by urging school leaders to ask themselves: "Under what conditions does technology have the most benefits for students?" By studying this research on student learning, principals will be better prepared to answer that question.

---

**The Consortium for School Networking. *Digital Leadership Divide*. Washington, D.C.: Author, 2004. 16 pages. Available free online at [www.cosn.org/resources/grunwald/digital\\_leadership\\_divide.pdf](http://www.cosn.org/resources/grunwald/digital_leadership_divide.pdf)**

---

This nationwide survey of 455 K-12 technology decision-makers reveals growing gaps in

funding for school technology, indicating a “digital divide” between the technology haves and have-nots. For the past three years, most technology budgets have been locked in place, with 62 percent of respondents reporting that their budgets decreased or remained unchanged. The data also show significant disparities in district technology spending. Districts with increased technology budgets over the past three years spent twice as much per student on technology as districts with declining budgets.

However, positive community attitudes and school involvement can overcome budget concerns, according to survey findings. Leaders who benefited from increased technology budgets over the past three years were more likely (70 percent) to acknowledge strong public support than those with decreased budgets (38 percent). High-tech districts were more likely than their low-tech counterparts to report the influence of school boards and classroom teachers in technology decisions.

The survey also documents technology’s top benefits, such as providing data for decision-making (74 percent), improving support staff efficiency (71 percent), and increasing administrator productivity (71 percent). One benefit lacking, however, is technology’s connection with teaching and learning. In fact, 56 percent of respondents list both integrating technology into the classroom and teacher professional development as chief challenges. School leaders give their teachers failing marks in integrating technology, with only 7 percent declaring teachers as “very good” or better.

To better link technology with learning, the survey submits four recommendations:

1. Move from automating administrative practices to transforming teaching and learning;
2. Invest in technology leadership;
3. Create new professional development initiatives; and
4. Recruit the active support of parents and the community.

-----  
**Karen M. Hawkins** is senior editorial specialist for Educational Research Service. Here e-mail address is [khawkins@ers.org](mailto:khawkins@ers.org)

Technology leadership demands attention to technology use throughout the school. The vision for technology use includes a commitment to this focus. Following are actions principals can take as technology leaders. Showcase Technology Use. Staff Meetings. As a principal, it is critical to focus on the vision and goals of the school. If the vision calls for technology integration throughout the curriculum, then examples of technology use must be showcased. One precious resource in schools is time. If principals focus attention on technology use during the limited time available for staff meetings Discover the new leadership principles next-generation leaders are using to transform businesses and achieve success. Therefore, the leadership principles for the next-generation leaders might not be the same as the principles of today's leaders. In this guide, we outline the ten core principles the future leader should focus on. Principle 1. LEAD BY SETTING AN EXAMPLE. As a next-generation leader, you must embrace and harness technology as part of your leadership strategy. As technology develops, it can continue to provide two benefits you need to harness as a leader. First, technological advances will undoubtedly provide organizations with plenty of opportunities to improve operationally. Start by marking "The Principal as Technology Leader" as Want to Read: Want to Read saving! Want to Read. Currently Reading. Read. Other editions. Enlarge cover. In an engaging style, the author--founder of the Idaho Administrative Technology Leadership Center--explores the complexities of change and implementation of technology in schools. Get A Copy. Amazon. Online Stores ¾. Audible Barnes & Noble Walmart eBooks Apple Books Google Play Abebooks Book Depository Alibris Indigo Better World Books IndieBound. Libraries. Paperback, 136 pages. The first three principles of strategic leadership involve nontraditional but highly effective approaches to decision making, transparency, and innovation. 1. Distribute responsibility. Strategic leaders gain their skill through practice, and practice requires a fair amount of autonomy. The final three principles are aimed at the potential strategic leaders themselves. Following these tactics can help them prepare for their personal evolution. 8. Bring your whole self to work. How Technology is Impacting Leadership. Embracing technology is the most vital ingredient of success for managers who aspire to be leaders. With the use of latest technology tools, it is very easy for leaders to lead employees and achieve organizational goals. Let's look at how you can use technology to your benefit and also get addressed as a cool leader! 1. Give Flexibility to Employees. With technology, leaders can facilitate a collaborative work environment to a loyal employee who is committed to deliver the best to the organization and the same time needs freedom to work from any other location other than office. This sense of freedom not only leaves an employee satisfied but also motivates him or her to work more efficiently due to increased convenience.