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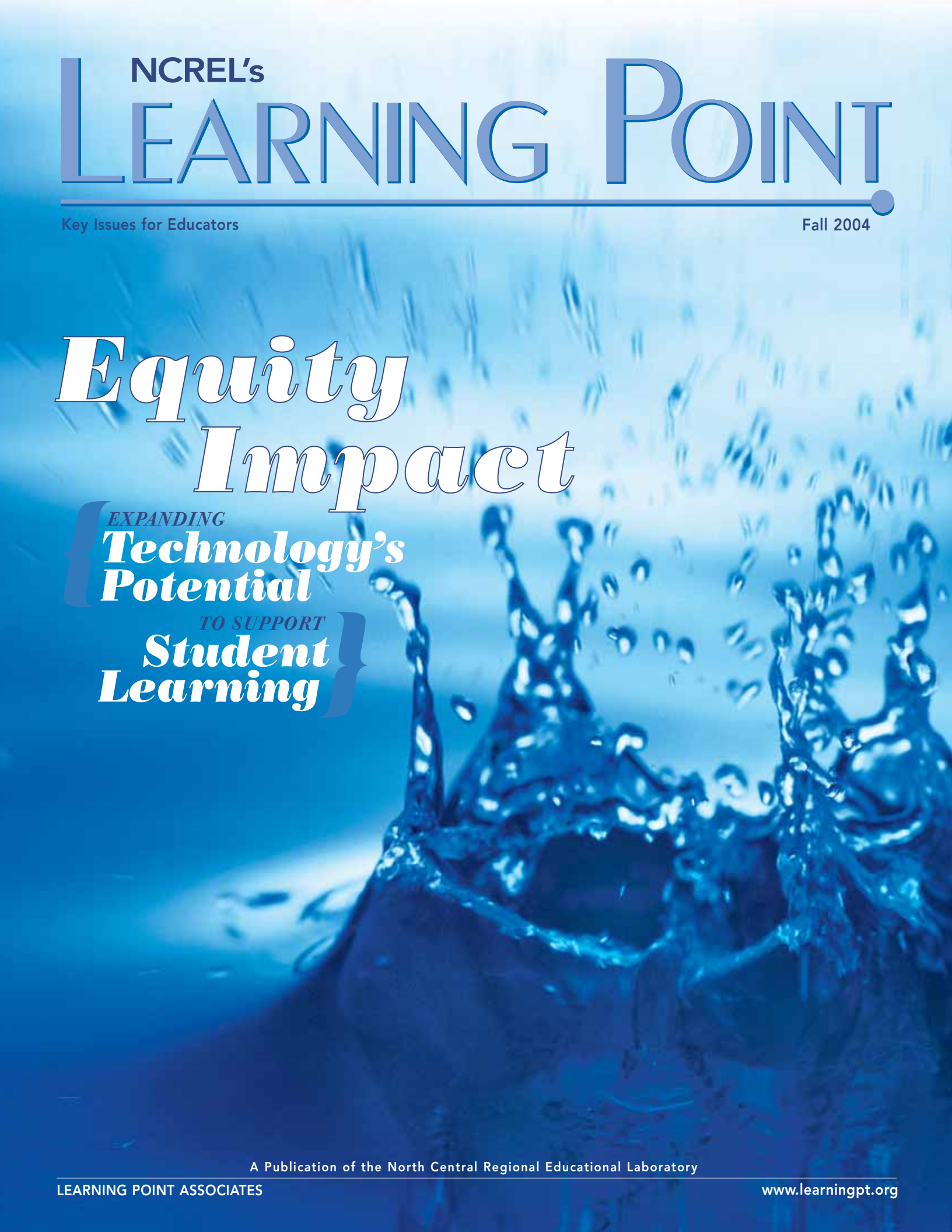

Equity Impact

EXPANDING Technology's Potential TO SUPPORT Student Learning

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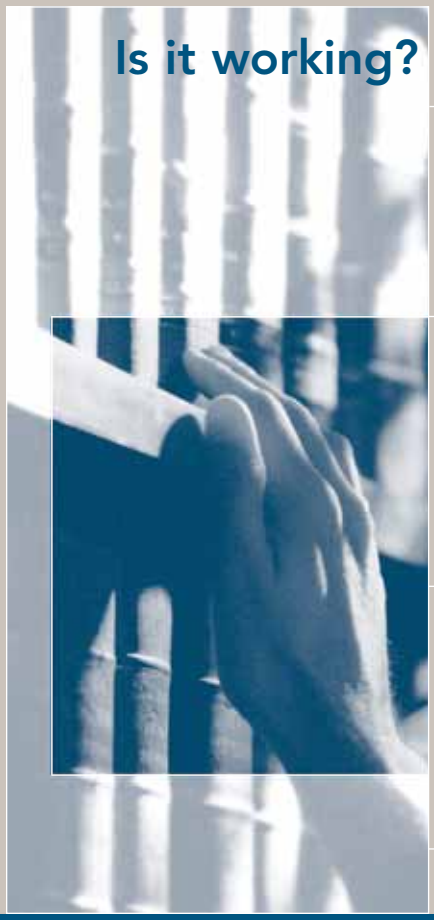

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From the desk of
the Learning Point Associates CEO

Photo by Charles Hopkins

Technology adds an interesting twist to the generation gap in our home. My teenage daughter's view of technology is worlds apart from mine. She embraces it with admirable gusto. She thrives on mastering the newest software, hardware, peripheral, or process. I approach technology with significantly less gusto, tinged sometimes with nostalgia for a time when life was simpler, when we didn't have programmable everything, when calling a service organization meant connecting with a human being instead of a programmed menu. Remember?

On a recent night at home, as my daughter was watching a DVD movie on her computer *while* she talked on the phone *and* instant-messaged her friends, I suggested reading a good book as an alternative. She quickly replied, "Mom, it's a good thing you're old because if you were a teenager now, you'd be a real nerd."

I suppose I could have thanked her for pointing out this advantage to my advancing years, but I was struck by something deeper. For her, technology is not about mastering challenging gizmos for their own sake. Technology's effect ripples through her world; it is interwoven into her life.

Learning Point Associates has similar views about technology's potential to be integrated to impact equity throughout our educational systems. We've learned that when technology is applied appropriately, it can and does promote better teaching and better learning.

This issue highlights several schools and districts in which there is a shared energy around making processes of teaching and learning more efficient while understanding and applying technology where it can provide the most value added for student learning. Gratuitous technology or technology for the sake of technology and status is not part of the thinking or practice in such schools and districts.

Our cover story focuses on assistive technology—technologies that are available for use by children and adults challenged by physical and/or cognitive impairments: persons who are vision or hearing impaired; those confined to wheelchairs; those who have difficulty reading, speaking, or comprehending, who can be supported by developments in hardware, software, and processes that integrate those tools into the curriculum.

We believe that technology does now and will continue to play a strong role in education if we are truly committed to leaving no child behind. NCREL is fortunate to be designated as the "technology lab" within the Regional Educational Laboratory Network. This designation provides us opportunity to research the use of assistive technologies—creating awareness and encouraging application where it can have the most impact.

I suspect many of us continue to envision a computer and its peripherals when we think of technology. I admit I lean this way and work every day to move my technology thinking and practice into the future.

But, no matter how far I advance into the Digital Age, I retain the right to choose simplicity. I swear I will never exchange my trusted Walkman®, which I wear when I run, for one of those new MP3 player gadgets. I just won't tell my daughter.

Sincerely,

Gina Burkhardt

By Asta Svedkauskaite

Equity Impact:
Expanding Technology's Potential to Support Student Learning

Rapidly evolving technology and student diversity challenge educators to meet the mandate that every child be technologically literate by the end of eighth grade. Knowledge—of our digital world, subgroups striving within it, and how technology tools can enable learning—is the place to start.

In 2001, spearheaded by the No Child Left Behind (NCLB) Act, the country embarked on a journey to increase academic success and narrow the achievement gaps. Among its objectives, the NCLB Act (2002) states that every student should be technologically literate by the end of eighth grade. Considering the evolving nature of technology and the diversity of students, the challenge is evident. How best can educators develop curriculum, train staff, and evaluate results in response to this aspect of the law?

For example, the NCLB Act singles out four distinct student subgroups and holds every school district accountable for making adequate yearly educational progress for those students. Such students include learners from major racial and ethnic groups, economically disadvantaged students, students with limited English proficiency, and students with disabilities.

Few would argue with the view that ensuring technology literacy for *all* students is complex. It requires knowledge of the evolving digital world and what it means to be technologically literate. (See "What It Means to Be Literate in the Digital Age" on page 7.) It requires knowledge of student subgroups. And, it requires an understanding of how new technologies might be efficiently applied to help each student achieve his or her potential.

The first step in the journey is knowledge. The second step is action. (See "Energizing for Districtwide Results," page 6.) Analysis by the North Central Regional Educational Laboratory (NCREL) of research on the student subgroups and the application of new technologies to their learning has identified important findings for schools.

Research indicates that when technology is used effectively and integrated thoughtfully into an educational setting, benefits can occur. In particular, two types of technologies show promise as educators master their uses: assistive technologies and instructional technologies. An overview of these two specific technologies is provided here.

Assistive Technologies

Assistive technologies differ from instructional technologies in that they are not optional. The Individuals with Disabilities Education Act (IDEA) of 1997 requires that public schools *consider* assistive technology for all students with individualized education programs (Branigan, 2004; Purcell & Grant, 2002). Limited funding does not exempt the school district from its responsibility to provide needed assistive technology devices and services. Therefore, the school community is charged with fostering new ways to allow students with special needs to practice and master learning tasks. (See "IDEA Update" at right.)

How can schools achieve that vision? Penny Reed, a former director of the Wisconsin Assistive Technology Initiative (WATI), says, "District administrators first must have a vision themselves or a sense of where they would look for an example. And so, having a sense of what good assistive technology services could be is one of the first steps."

Informing such a vision is the reality—a surprise to some—that assistive technologies often aren't expensive. In fact, assistive technology consists of a continuum of items, from least expensive to most expensive. Reed understands many teachers are "often fearful to recommend assistive technology because they're afraid there is no money in the budget for it.... There's a vision that assistive technology means computers, and that's simply not true. Assistive technology can be a pencil grip; assistive technology can be a slant board. So, assistive technology can be something that costs 50 cents to something that costs hundreds of dollars and even thousands of dollars, but it certainly isn't true that we're always talking about a large-ticket item" (see Reed, Clifford, & Svedkauskaite, 2004).

Assistive technology is not about creating a separate curriculum. Rather, it is about giving students with special needs access to the general curriculum (Purcell & Grant, 2002).

Technology Terminology

Assistive technology device: Any item, piece of equipment, or product system—whether acquired commercially off the shelf, modified, or customized—that is used to increase, maintain, or improve functional capabilities of a child with a disability (Individuals with Disabilities Education Act Amendments of 1997).

Instructional (or educational) technology: Multimedia technology or audiovisual aid used as a tool to enhance the teaching and learning process—as defined by the International Technology Education Association (Office of Technology Policy, New York State Education Department, n.d.).

IDEA Update

Special education reform was headed by the Education for All Handicapped Children Act in 1975 and followed by the reauthorized Individuals with Disabilities Education Act (IDEA) in 1990 and 1997. The next IDEA reauthorization is anticipated in early 2005. It reflects the U.S. president's commitment to applying the same rigorous accountability standards of the No Child Left Behind (NCLB) Act to IDEA (U.S. Department of Education, 2003).

Aligning IDEA with NCLB will ensure that all the key elements are receiving equal attention in making sure every student is meeting high standards in education. Those elements include federal funding, prevention, early intervention, learning goals, quality teachers, and ongoing professional development (Gaddy, McNulty, & Waters, 2002).

Lynne Rauch, Ed.D., a former superintendent of School District 54 in Schaumburg, Illinois, and her successor, Ed Rafferty, believe in the importance of technology to support and enhance the education of every learner. In this school district, for instance, regular education classes are open to many students receiving special services.

Doris Reynolds, a facilitator for foreign language in the elementary school program and a teacher in Schaumburg, agrees. She explains, "We use assistive technology with our LEP [limited-English-proficient] students and our special-needs students to engage them in learning, to reinforce the content area, to give them motivation, to expand their opportunities, and also as a means of expressing what it is that they have learned so that they can demonstrate and show others what they are capable of doing.… We found that technology not only helps those with special needs but every child in a classroom" (see Svedkauskaite, Reza-Hernandez & Clifford 2003).

According to Dr. Rauch, "We have to look at the big picture. The more needs we meet of every child, the better educated they will be.… The better our society is, the better opportunities we all have" (see Reed et al., 2004).

Instructional Technologies

Although researchers' agreements fluctuate, instructional technology is one means to boost student achievement (Kulik, 2002; Waxman, Connell, & Gray, 2002). A case in point: For LEP students specifically, research indicates that technology opens up many ways for students to learn in a rich linguistic environment and find opportunities to interact with the multicultural world, extend their language skills, and not be embarrassed for not knowing answers (Lee, 2000; Padrón & Waxman, 1996).

Energizing for Districtwide Results

When members of the school community work together, technology can expand its potential to meet the needs of every child. Following is a checklist to help administrators, assistive technology personnel, principals, special-education teachers, and related service personnel move their district forward in unison:

- Initiate a strategic planning process to ensure that stakeholders share the same vision of how high-quality assistive technology services could look.
- Develop written guidelines that include assistive technology.
- Understand the necessity of providing assistive technology devices and services to students so they do not fall further behind.
- Provide procedures, as well as forms and templates, to help staff respond to requests for assistive technology.
- Train staff to use assistive technology effectively to support student learning.
- Budget for assistive technology devices.
- Plan ahead for acquisition of needed assistive technology for both trials and ongoing use.

Manny Sanchez, technology coordinator at Ysletta Middle School, El Paso, Texas, says that technology boosts LEP students' confidence and lets them "experience a new world as far as information that really helps them with their English language.… It gives them a lot of confidence that they can find the information" (see Svedkauskaite et al., 2003).

Such applications require concrete planning. NCREL's *enGauge*® Web site (www.ncrel.org/engauge/) provides a framework for effective technology use. Offering educators a strategic starting point and the accompanying tools to implement technology, *enGauge*® builds on factors critical to effective use of technology in schools. For example, the following are indicators of effective planning and design:

- What do students already know?
- What can students already do?
- What are the learning needs of each student?
- What accommodations need to be made to meet those needs?
- How will the use of technology enhance the acquisition of new knowledge?
- How will effective technology use engage students in the lesson or unit?
- What instructional technologies best support my objectives and curriculum content?
- What schoolwide resources—human and material—are needed to successfully integrate technology into the curriculum?
- In what ways can the appropriate use of technology change the evaluation of student learning for this lesson/unit?

Applied to various subgroups in the classroom, technologies such as visualization software, self-paced learning modules, text-reading software, tactile or voice-output measuring devices, and Internet connections with other classrooms—among others—have shown positive results.

Some technologies, for instance, advance LEP student learning by leveling the language barrier and fostering engaged learning. Students can construct meaning and learn in a variety of ways, not only from the teacher or the textbook. According to Padrón and Waxman (1996), successful technology use with this subgroup of learners specifically enables the following:

- Increased autonomy
- Motivation and self-confidence
- Prompt feedback
- Equal opportunities
- Rich linguistic support
- Multicultural environment
- Opportunities for social cooperation

Mark Larson, English teacher at Highland Park (Illinois) High School, suggests that in the classroom, assistive technology can simply mean very basic adaptation of teaching methods. He says, "I will have a deaf student this year for the first time, and that student will have a sign-language interpreter. However, my usual teaching style tends to be oral rather than visual. It will be up to me to adapt my methods to include more visuals—overheads, illustrations, and so on—to get my point across. Otherwise, I imagine the interpreter and student will be exhausted by the end of the first day of class."

Educators understand that fostering technologically literate students is an educational journey well worth taking. They are aware that technology literacy requires expansion of curriculum and methods. They know that technology itself has created tools that can assist. They realize assistive technology is about using simple implements like a pen grip or overhead projector as well as sophisticated software and adaptive hardware so each learner has an opportunity to achieve. They recognize that technology integration means using many technologies to enhance teaching, learning, and multisensory experiences, providing "a range of pathways for students at varying levels" (Ficklen & Muscara, 2001, p. 26).

What It Means to Be Literate in the Digital Age

In the early 1900s, a person who had acquired reading, writing, and calculating skills was considered literate. To achieve success in the 21st century, students are expected to build on those basics, developing a broader range of literacies (International Information and Communication Technologies Literacy Panel, 2002).

Digital Age Literacy includes the following:

- **Basic Literacy:** Language proficiency (in English) and numeracy at levels necessary to function on the job and in society to achieve one's goals and to develop one's knowledge and potential in this Digital Age.
- **Scientific Literacy:** Knowledge and understanding of the scientific concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity.
- **Economic Literacy:** The ability to identify economic problems, alternatives, costs, and benefits; analyze the incentives at work in economic situations; examine the consequences of changes in economic conditions and public policies; collect and organize economic evidence; and weigh costs against benefits.
- **Technological Literacy:** Knowledge about what technology is, how it works, what purposes it can serve, and how it can be used efficiently and effectively to achieve specific goals.
- **Visual Literacy:** The ability to interpret, use, appreciate, and create images and video using both conventional and 21st century media in ways that advance thinking, decision making, communication, and learning.
- **Information Literacy:** The ability to evaluate information across a range of media; recognize when information is needed; locate, synthesize, and use information effectively; and accomplish these functions using technology, communication networks, and electronic resources.
- **Multicultural Literacy:** The ability to understand and appreciate the similarities and differences in the customs, values, and beliefs of one's own culture and the cultures of others.
- **Global Awareness:** The recognition and understanding of interrelationships among international organizations, nation-states, public and private economic entities, sociocultural groups, and individuals across the globe.

Definitions from *enGauge® 21st Century Skills: Literacy in the Digital Age*, published by NCREL and the Metiri Group (available online at www.ncrel.org/engauge/skills/engauge21st.pdf).

Ultimately, the promise of technology greatly depends on the passion of educators who see its potential and strive to realize its impact. An El Paso teacher who uses technology to engage students in global learning experiences describes herself as an idealist. She says, "If you have children work with others from around the world, then you realize we are all the same. We are all people. If we understood ourselves as such, then maybe the world would be a better place" (see Svedkauskaite et al., 2003). ●

References

Branigan, C. (2004, May 1). White House heralds gains for assistive technologies. *eSchool News Online*. Retrieved August 31, 2004, from http://www.eschoolnews.com/news/PFshowstory.cfm?ArticleID=5031 [registration required].

Ficklen, E., & Muscara, C. (2001, Fall). Harnessing technology in the classroom. *American Educator*, 22–29. Retrieved August 31, 2004, from http://www.aft.org/pubs-reports/american_educator/fall2001/tech.html

Gaddy, B., McNulty, B., & Waters, T. (2002). *The reauthorization of the Individuals with Disabilities Education Act: Moving toward a more unified system* (Policy Brief). Aurora, CO: Mid-continent Research for Education and Learning. Retrieved August 31, 2004, from http://www.mcrel.org/PDF/PolicyBriefs/5022PI_PBReauthorizationIDEA.pdf

Individuals with Disabilities Education Act Amendments of 1997, Pub. L. No. 105-17 (1997). Retrieved August 31, 2004, from http://www.ideapractices.org/law/downloads/Idea97.pdf

International Information and Communication Technologies (ICT) Literacy Panel. (2002). *Digital transformation: A framework for ICT literacy*. Princeton, NJ: Educational Testing Service.

Kulik, J. (2002). *School mathematics and science programs benefit from instructional technology* (InfoBrief: NSF 03-301). Washington, DC: National Science Foundation. Retrieved August 31, 2004, from http://www.nsf.gov/sbe/srs/infbrief/nsf03301/nsf03301.pdf

Lee, K. W. (2000). English teachers' barriers to the use of computer-assisted language learning. *The Internet TESL Journal, 6*(12). Retrieved August 31, 2004, from http://iteslj.org/Articles/Lee-CALLbarriers.html

No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (2002). Retrieved August 31, 2004, from http://www.ed.gov/policy/elsec/leg/esea02/index.html

North Central Regional Educational Laboratory & Metiri Group. (2003). *enGauge® 21st century skills: Literacy in the Digital Age*. Naperville, IL: Authors. Retrieved August 31, 2004, from http://www.ncrel.org/engauge/skills/engauge21st.pdf

Office of Technology Policy, New York State Education Department. (n.d.). *International Technology Education Association (ITEA) terms*. Retrieved August 31, 2004, from http://www.emsc.nysed.gov/technology/nclb/definition.htm

Padrón, Y. N., & Waxman, H. C. (1996). Improving the teaching and learning of English language learners through instructional technology. *International Journal of Instructional Media, 23*(4), 341–354.

Purcell, S. L., & Grant, D. (2002). *Assistive technology solutions for IEP teams*. Verona, WI: Attainment.

Reed, P., Clifford, M., & Svedkauskaite, A. (2004). *Enhancing system change and academic success through assistive technologies for K–12 students with special needs*. Retrieved August 31, 2004, from http://www.ncrel.org/sdrs/areas/issues/methods/technlgy/te700.htm

Svedkauskaite, A., Reza-Hernandez, L., & Clifford, M. (with Valdez, G., & Durian, D.).(2003). *Using technology to support limited-English-proficient (LEP) students' learning experiences*. Retrieved August 31, 2004, from http://www.ncrel.org/sdrs/areas/issues/methods/technlgy/te900.htm

U.S. Department of Education. (2003, June 12). *Paige issues statement on Senate proposal for IDEA* [Press release]. Retrieved August 31, 2004, from http://www.ed.gov/news/pressreleases/2003/06/06122003a.html

Waxman, H. C., Connell, M. L., & Gray, J. (2002). *A quantitative synthesis of recent research on the effects of teaching and learning with technology on student outcomes*. Naperville, IL: North Central Regional Educational Laboratory. Retrieved August 31, 2004, from http://www.ncrel.org/tech/effects/effects.pdf

Assistive Technology Resources

Computers and Internet access are often portrayed as great equalizers. When easily accessed and effectively used, technology in schools can provide valuable resources such as access to assistance for students with various disabilities. To gauge your progress and set targets for obtaining equity, visit the *enGauge® Indicator: Special-Needs Equity* Web page at **www.ncrel.org/engauge/framewk/equ/special/equnedra.htm**.

Enhancing Academic Success Through Technology for Limited-English-Proficient [LEP] *Students*, a video and booklet package showcasing real-life examples of technology use with LEP students at several bilingual school districts in El Paso, Texas, is available free of charge. Phone **800-252-0283** or e-mail your request to **order@learningpt.org**.

Technology can provide meaningful learning experiences, especially for at-risk children. Achieving such fundamental change, however, requires transformation of the underlying pedagogy (basic assumptions about the teaching and learning process) and the kinds of technology applications typically used in classrooms serving at-risk students. For more insight into this topic, visit "Using Technology to Enhance Engaged Learning for At-Risk Students," a Critical Issue on the *Pathways to School Improvement* Web site, at **www.ncrel.org/sdrs/areas/issues/students/atrisk/at400.htm**.

Information on assistive technology funding is available from the National Assistive Technology Advocacy Project page on the *Neighborhood Legal Services* Web site at **www.nls.org/natmain.htm**.

The *Assistive Technology Consideration* Web site provides an easy-to-understand list of assistive technologies arranged on a continuum related to the task to be completed. View the Web site and learn about other assistive technology considerations at **www.ideapractices.org/resources/tam/**.

For help with developing an assistive technology vision that will benefit students with special needs, check out two useful tools: the *Quality Indicators for Assistive Technology Services* matrix at **sweb.uky.edu/~jszaba0/qiatqualityind.html** and the *School District Profile of Assistive Technology Services* at **www.wati.org/schoolprofile.htm**.

The Wisconsin Assistive Technology Initiative has developed assistive technology assessment forms, one approach to providing a functional evaluation of student needs. Visit **www.wati.org/assesmentforms.htm** to learn more about this tool.

Administrators and educators are expected to be change agents of school improvement efforts and—despite the fact that the definition of assistive technology is broad—educators are expected to be knowledgeable about this relatively new field. With a focus on key elements of effective systemic change to improve schools, a recent Critical Issue on the *Pathways* site discusses the promising benefits of assistive technology, evidenced by projects currently in place across the country. Visit "Enhancing System Change and Academic Success Through Assitive Technologies for K–12 Students With Special Needs" at **www.ncrel.org/sdrs/areas/issues/methods/technlgy/te700.htm**.

A Sampling of Assistive Technology Devices

The level of guidance and support that each student needs varies greatly—from physical, verbal, or visual prompts to high-technology devices and services. Accordingly, teachers can select from a wide range of assistive technology equipment to ensure that all students have equal and inclusive opportunities to participate in and benefit from the learning process.

The lists that follow are neither prescriptive nor inclusive of the myriad devices available to educators. These examples illustrate only some of the types and variety of equipment that can improve student achievement.

Assistive Technology for Vision:

Devices that aid students who are blind or have low vision

- Large-print books
- Books on tape
- Magnifying glass
- Slate and Braille stylus
- Stencil
- Tape recorder
- Cassettes
- Pen light
- Calculator with large keys and large display
- Talking calculator
- Self-adhesive notes
- Highlighters
- Color-blind aids
- Braille writer
- Computer with speech output or feedback
- Talking electronic dictionary, thesaurus, spell checker
- Closed-circuit television
- Computer-screen magnifier
- Letter- or word-magnification software
- Video magnifier

Assistive Technology for Hearing:

Devices that aid students who are deaf or hard of hearing

- Hearing aid
- Signaling device
- Vibrotactile switch
- Pictures, photographs, objects
- Amplified phone system
- Phonic ear
- Headphones
- FM amplification system
- Closed-captioned television
- Real-time captioning
- CD-based (text)books, electronic books
- Audio voice-amplification device for teachers
- Telecaption decoder
- Vibrotactile system

Assistive Technology for Communication:

Devices that aid students who have difficulty in communicating effectively because they have little or no verbal skill or have limited language proficiency

- Pictures, photographs, objects
- Communication boards
- Communication books
- Eye-gaze or eye-pointing system
- Word cards or word manipulatives
- Writing guides
- Voice output device
- Communication software
- Augmentative communication devices
- Text-to-voice and voice-to-text software
- Talking word processing with writing support
- Word prediction, abbreviation, or expansion options to reduce keystrokes
- Software that allows communication via pictures and symbols
- Head-pointing device
- Touch screen
- Translation device: voice language (e.g., English) to output different voice language (e.g., Spanish)
- Electronic and software dictionaries

For detailed listings that provide additional categories and additional devices, visit **www.ncrel.org/sdrs/areas/issues/methods/technlgy/te7assist.htm**.

Choosing Technology Strategically to Impact Systemwide Achievement

By Gil Valdez, Ph.D.

Making sound decisions about technology requires leaders to be informed about its uses, decisive in the midst of an evolving field, savvy about specific applications, focused on training staff, and able to guide others through change.

Education leaders understand the relevance of the goal of the No Child Left Behind Act to enhance education through technology (Title II, Part D), and many have been working toward that goal, even prior to the passing of the law in 2002.

From the point of view of administrators trying to be informed leaders who make good choices about the effective use of technology, the challenges related to this goal are multiple: The administrators must themselves be technologically literate. They must make decisions and implement plans about a medium that constantly changes, and for which standards and assessments are in the process of development. They must ensure that teachers have the skills to guide students toward technology literacy. And, they must guide others through the changes required to reach the goal.

"Though the challenges to administrators around technology are great, the rewards can be equally great," notes Andrew Henry, chief officer, Research & Development Group at Learning Point Associates. "Technology that is integrated appropriately and systemically supports improved program delivery and student academic achievement. It also prepares students to live productively in the 21st century."

Informed Leaders

Strong, knowledgeable leaders are crucial in determining whether technology use will be effective in improving learning for all students. Yet, when administrators believe their own knowledge of technology is inadequate, they rightly feel ill equipped to make meaningful recommendations.

Cathy Gunn, Ph.D., executive director of the North Central Regional Educational Laboratory, says, "It is my hope that today's educational leaders are the most connected, informed, and caring people in their learning communities. Technology can help with the first two."

Decisive Leaders

Leaders understand that gathering the required components is integral to technical success. Effective leaders require appropriate tools to deal with the rapidly changing world of technology so that its potential can be directed toward the desired results. This requires leaders to find resources, tools, processes, and approaches that specifically address technology.

For example, to implement a standards-based, technology-integrated curriculum, they need a means to measure and monitor the development of student technology literacy from primary through secondary grades. Learning Point Associates has developed a rubric based on the International Society for Technology in Education (ISTE) National Educational Technology Standards (NETS) for students, which is intended to assist development of state and local assessments by defining four achievement levels in relation to the NETS. (See "View the Latest Educational Technology Standards for Students," page 15.)

Tech-Savvy Teachers

Effective student performance requires effective teachers. However, many current educators lack preservice training in the use of technology in the classroom. They have had to learn it at the same time they are trying to incorporate it into their instruction. In addition, as with many of our brightest students, technology itself refuses to remain static. Because technology development, uses, and adaptations are continual, ongoing learning is required.

However, in today's accountability environment, teachers are expected to know and utilize instructional technologies, especially those related to locating information, creating knowledge, and sharing knowledge. Teachers are expected to know and use instructional technology to prepare students to function in an Internet-based world and to equip them to use technology tools that are now integral to most adult professions.

Technology-Specific Leaders

The specifics of technology require leaders to pay attention and make decisions about the following:

- Providing access to hardware
- Updating current technologies within the building, district, and state
- Implementing decisions systemically
- Sharing decisions made with relevant stakeholders

Technology infrastructure and support are mission critical. Schools cannot require teachers and students to be hardware and software experts. The equipment they use must be both accessible and dependable in order for it to be effectively incorporated into classroom instruction and learning processes. Teachers need to experience technology as something they can build lesson plans around and not be worried that their planning efforts and schedules will be disrupted by equipment failure or unavailability. It doesn't take more than a few negative experiences to lead teachers to believe technology is more problematic than helpful. This belief can seriously curtail technology use.

Updating current technology is both a judgment call and a feasibility issue. Informed leaders must evaluate whether or not an update will add genuine value to the learning experience. Even then, the cost of updating old equipment or making a software purchase must be weighed against other demands for limited funds.

Updating technology also refers to introducing new processes that recent technology has enabled, such as tools that allow advanced analysis of data to inform learning-community decisions. For instance, Learning Point Associates offers a "springboard" for schools and districts in the form of Data Retreats: short-term, on-site, two-day workshops that guide educators through the process of gathering, analyzing, and sharing data. This results in a clearer picture that helps educators set their start point, set their ultimate goals, and set in motion the steps to achieving those goals.

Planning for Effective Technology Use

The following questions can guide leaders as they implement a plan to help all students achieve through technology:

- *Creating a vision:* What is your vision of learning?
- *Designing for learning:* How will you use technology to support your vision of learning?
- *Designing the infrastructure:* How will you develop a supportive infrastructure?
- *Context of planning:* Do you understand the context of your technology planning process?
- *Garnering public support:* How will you garner public support for your plan?
- *Implementing a plan:* How will you implement your plan?
- *Ongoing evaluation:* How will you evaluate the implementation of your technology plan?

Additional tools and resources are available at *Guiding Questions for Technology Planning* (www.ncrtec.org/capacity/guidewww/gqhome.htm).

Systemically implementing decisions is especially challenging in the area of technology, given its ever-changing nature. However, if it is to be successful, technology cannot be implemented in isolation. Failure to tie technology use to the required curriculum may reinforce the erroneous perception that technology is an instructional add-on. A current solution developed by a partnership comprising Learning Point Associates, the Wisconsin Center for Education Research, and the Council of Chief State School Officers is a tool designed to collect and analyze data on what is taught and to compare that data to state standards and assessments. This tool, the *Surveys of Enacted Curriculum* (SEC), captures not only which topic area is taught but also the cognitive expectations the teachers have for their students.

Finally, sharing technology-related decisions with all stakeholders is a particularly critical challenge to leaders. Unlike something known to be familiar to all in the learning community, levels of understanding about technology differ greatly. Administrators need to share the change process itself, beginning with why the change is necessary, what the benefits are likely to be, and what the consequences of not making any changes will be—with respect to providing a comprehensive education to all students in a leveled playing field on which all students have chances to participate and achieve.

In the U.S. Virgin Islands, professional developers in the Professional Services Group at Learning Point Associates are implementing a comprehensive school reform initiative, and they report that sharing the process is crucial to its success. Robert Reid, senior program associate, recalls a recent meeting during which he talked to two learning-community members, one a territory minister and the other a leader of a women's group. "Both of them articulated precisely what consequences they envisioned if the local high schools did not succeed in improvement and becoming accredited. They foresaw the door to many opportunities slamming shut for students, and a large jump in numbers of women requiring social services," explains Reid. "I got a better sense of the importance of our work. When it comes to working together toward the goal of achievement, it isn't just about sharing information. It's about sharing *why* we are in this together." ●

Technology Leadership Resources

Critical Issue: Technology Leadership: Enhancing Positive Educational Change
This *Pathways to School Improvement* Critical Issue focuses on effective uses of technology and administrators' leadership qualities as they create and respond to change. It discusses educational leadership and summarizes major factors associated with educational change. A discussion is also included about how research findings and best practices impact leadership and educational productivity.
www.ncrel.org/sdrs/areas/issues/educatrs/leadrshp/le700.htm

Critical Issue: Guiding Principals—Addressing Accountability Challenges
Exploring the challenges presented by the current accountability environment, this *Pathways* Critical Issue also offers a leadership message of practical support. The author outlines seven guiding principles that administrators can use as they address the accountability issues of leading—and improving—their districts and schools.
www.ncrel.org/sdrs/areas/issues/educatrs/leadrshp/le600.htm

Leadership and Learning With Technology
Designed to help educators gain greater understanding of technology's impact on learning, this Web site consists of six interrelated module frameworks that focus on planning and actions essential for implementing, managing, and supporting educational technology in schools. Each module provides goals and resources for creating a workshop designed for specific needs.
www.ncrtec.org/pd/llwt/

Technology Leadership Team Institute
This Web page contains links to 12 "To the Point" documents, which are mini *Pathways to School Improvement* Critical Issues. They discuss issues of importance in the areas of technology use, professional development, and leadership.
www.ncrel.org/sdrs/thepoint/techtoc.htm

Systems and Leadership
As part of the *enGauge*® resource, this Web site provides guidance to administrators, policymakers, and teachers who are interested in using technology to transform their schools into high-performance learning organizations.
www.ncrel.org/engauge/framewk/sys/sysin.htm

Technology Professional Development
Created for technology professional developers, school technology specialists, and K–12 administrators, this online planning resource is organized around the following five themes: Visualizing Technology-Supported Engaged Learning, Current Reality, Effective Staff Development, Evaluation, and Implementation.
www.ncrel.org/tech/tpd/

By
Arlene Hough

Target Your Grant Proposal for Success

Every year, over $200 billion is given away to nonprofit organizations whose needs match the funding priorities of various individual or community foundations, public charities, corporate sponsorships, and government agencies. In 2002, over $4.2 million was given by foundations for education programs (Foundation Center, 2004). The leader in foundation giving, the Bill and Melinda Gates Foundation (2004), has given over $2.2 billion to the field of education since its creation in 1994.

In our last issue, this column included tips and resources for finding funding opportunities. Here, we focus on the nuts and bolts of writing winning grant proposals.

Most grantmakers have established guidelines and processes that need to be respected, and you should recognize that different funders have different expectations and criteria for proposals. For example, the Bill and Melinda Gates Foundation does not accept unsolicited grant proposals; the Grand Rapids Community Fund requires a letter of inquiry; the National Education Association requests specific information through a series of questions that must be answered in the narrative of your proposal. Be sure to do your research and read all funding source materials to ensure that you follow the directions while writing and submitting the proposal.

At minimum, you can expect to provide the following information in each grant proposal:

- Specific amount requested
- Purpose of the request
- Organizational information
- Compelling needs statement
- Proposed project
- Clearly defined goals and objectives
- Methodology for project implementation
- Time frame
- Evaluation methodology
- Itemized budget
- Future funding strategy
- Requested appendixes (letters of support, 501(c)3 letter, annual report, list of board of directors, etc.)

Here are some additional tips and tools of the trade:

- A compelling needs statement is at the heart of your entire case for funding. The proposed methodology should be detailed, and you should thoroughly explain how the type of work you are proposing will solve the problem.
- Your mission must represent a greater purpose—for example, increasing achievement of student literacy rather than purchasing reading software for classrooms.
- Give the funder everything it asks for the first time.
- Make your requests clear, straightforward, and concise.
- State the amount you are requesting and the purpose of the request in the first paragraph.
- Do not ask for more than the funder has specified will be given.
- Create a proposal-development timeline, and communicate deadlines to everyone on the team.
- Avoid the use of jargon, acronyms, abbreviations, and any confusing or trendy language.
- Understand and differentiate between objectives (quantifiable outcomes) and goals (broad statements of the ultimate result).
- Stress how the specific qualifications of the personnel involved relate to their ability to do the scope of work. All resumes should have a uniform look.

The budget portion of your proposal should be carefully prepared by your financial officers with input from the program staff. While it is impossible to predetermine the exact expenses you will incur, you need to have a fair idea of what resources are necessary. You do not want to agree to do more work than is financially possible under the terms of the request for proposal (RFP) or your request for funding.

As with most successful ventures, the devil is in the details. Be creative, be accurate, and be on time! ●

References

Bill and Melinda Gates Foundation. (2004). *Grant highlights*. Retrieved September 7, 2004, from http://www.gatesfoundation.org/Grants/default.htm?showYear=2004

Foundation Center. (2004). *Foundation giving trends*. Retrieved September 7, 2004, from http://fdncenter.org/fc_stats/pdf/04_fund_sub/2002/10_02.pdf

FOR MORE INFO

Donors Forum of Chicago (www.donorsforum.org)

The Foundation Center (fdncenter.org)

Montclair State University
Assistance in Developing Proposals: Strategy
(www.montclair.edu/pages/ORSP/strategy.htm)

St. Thomas Aquinas College *Proposal Writing Tips*
(www.stac.edu/grant/Proposal%20Writing%20Tips.htm)

Compiled by
Sandy Moore

Developing Solutions to Meet Regional Needs

Analyze Education Trends With Interactive Data Tool

The *Teaching Quality (TQ) Source* Web site brings together in-depth, reliable research to help policymakers and educators make informed decisions on teaching quality. It identifies policies and initiatives that impact fundamental issues of teaching quality, including teacher preparation, recruitment, and retention. An interactive data tool permits dynamic analyses of local, state, and national trends. The online publications database brings together the best research in the field of teacher quality for fast, easy reference. The *TQ Source Web* site was developed jointly by NCREL and the Education Commission of the States. Visit the Web site at **www.tqsource.org**.

Good Choices for Continuous School Improvement

Making Good Choices: Sustainable School Improvement is the newest booklet in the *Making Good Choices* series. Geared for school and district leaders, it presents information on building commitment, developing capacity, finding time, increasing staff retention, and finding money for continuous school improvement. The booklet includes nine comprehensive tools for helping schools and districts carry out these goals. Also included is a list of additional resources (tools, software, and guidance) by topic. View the booklet online at **www.ncrel.org/csri/choices/mgcssi.pdf**. Order a complimentary copy through the Product Catalog at **www.learningpt.org/catalog.htm** or through the Product Order Line at **800-252-0283**.

Online Learning Policy and Practice

NCREL, in partnership with the Colorado Department of Education, Illinois Virtual High School, and Wisconsin Virtual School, recently directed and funded a national study to ascertain what states are doing to address the need for policy guidance in K–12 online education. The extensive report, *Keeping Pace With K–12 Online Learning: A Snapshot of State-Level Policy and Practice*, is based on research conducted through telephone interviews, literature reviews, and Internet searches. It provides educators with information on specific topics in K–12 online learning practice as well as analysis and discussion of online learning policy issues with recommendations for state policymakers. The report is available online at **www.ncrel.org/tech/pace/index.html**.

Enhance Educational Practices With Scientifically Based Research

The No Child Left Behind Act requires that federally funded educational programs be built on scientifically based research (SBR). To meet this need, NCREL developed a new Critical Issue on the *Pathways to School Improvement* Web site. "Using Scientifically Based Research to Guide Educational Decisions" focuses on how educators can use SBR to inform their teaching practices, curriculum decisions, professional development, and other schoolwide programs to improve student achievement—while meeting federal requirements. View the Critical Issue at **www.ncrel.org/sdrs/areas/issues/envrnmnt/go/go900.htm**.

Linking Data Systems for More Accurate and Transparent Reports

Build understanding of an ideal education data system with the latest edition of *Policy Issues.* "State Education Data Systems That Increase Learning and Improve Accountability" reviews the current condition of state data systems by looking critically at the past, present, and future of education data use. It examines the components needed to address system improvements and provides policy recommendations to help states create efficient data systems that promote accountability to improve student learning. View the issue online at **www.ncrel.org/policy/pubs/pdfs/pivol16.pdf**. Order a complimentary print copy through the Product Catalog at **www.learningpt.org/catalog.htm** or through the Product Order Line at **800-252-0283**.

View the Latest Educational Technology Standards for Students

The No Child Left Behind Act established the goal of ensuring that "every student is technologically literate by the time the student finishes the eighth grade" (Title II, Part D, Sec. 2402). But what does it mean to be "technologically literate"? To answer that question, Learning Point Associates has drafted the *NETS for Students: Extended Rubric*. This rubric defines *technology literacy* based on National Educational Technology Standards (NETS) for students developed by the International Society for Technology in Education (ISTE). It indicates specific standards for students to have mastered by the end of Grades 2, 5, 8, and 12. The rubric is being developed to assist state and school district leaders in their efforts to measure and monitor the development of student technology literacy throughout the elementary and secondary grades. To view the draft of the rubric—and to provide feedback to the development group—visit **www.ncrel.org/tech/nets/**.

NEWS & NOTES

Evaluating the Long-Term Results of Program Activities

The Evaluation & Policy Research Group professionals at Learning Point Associates are the program evaluators for the Systemic Change Offering Personalized Education (SCOPE) Project of Wayne Township, Indiana. This three-year project, funded by the Lilly Foundation, focuses on districtwide school improvement initiatives. The SCOPE enhancements include personalized learning, literacy, and project implementation factors such as professional development. Evaluators use a variety of data collection techniques. They conduct both quantitative and qualitative analyses before generating evaluation reports. For further information on the Evaluation & Policy Research Group, visit **www.learningpt.org/evaluation/** or call **800-252-0283**.

NCREL Partners With GLARRC

NCREL has joined forces with the Great Lakes Area Regional Resource Center (GLARRC) to address myriad challenges posed by the reauthorization of the Individuals with Disabilities Education Act and its impact on the ongoing implementation of the No Child Left Behind Act. Inherent to the success of this initiative is the involvement and chairmanship of Christopher Cross, a senior fellow at the Center on Education Policy and a distinguished senior fellow at the Education Commission of the States.

Promoting Successful Decision Making Through Data Training

The Professional Services Group at Learning Point Associates began working with the U.S. Virgin Islands (USVI) Department of Education in 2003 to develop a systemwide school improvement plan. The goals are to increase student achievement, improve educator quality, engage the community in implementation, and build leadership. Learning Point Associates initiated the process by working with each of the 35 schools in the territory's two districts to plan a strategy and identify obstacles. The first phase of the project called for professional development around data-driven decision making. Learning Point Associates presented a series of Data Retreats to help USVI school leaders identify strengths and weaknesses through data and to set specific, measurable, and realistic goals for improvement. For more information on the Professional Services Group, visit **www.learningpt.org/services/** or call **800-252-0283**.

By Nicole Gallmann

Predicting Progress: Partnership Forecasts Future of ISTE NETS

With the No Child Left Behind (NCLB) Act calling for all students to be technologically proficient by the end of eighth grade, how can the future of the ISTE NETS help educators and administrators assess their students' technological literacy proficiency?

On July 30, 2004, Learning Point Associates and the International Society for Technology in Education (ISTE) partnered to offer an interactive webcast on the future of the ISTE National Educational Technology Standards (NETS) for students, teachers, and administrators. The goals of the hourlong webcast, which included an expert panel (see "Webcast Panelists," page 17), were to discuss the current state of the NETS in the rapidly evolving educational technology field and to address questions from the international online audience. Through this collaboration between ISTE and Learning Point Associates, the discussion focused on the impact that the NETS have and continue to make in educational technology, assessment of technology literacy proficiency, construction of effective professional development through successful technology integration, and the relevance of the six-year-old ISTE NETS for students.

Impact of the NETS

Panelists agreed that the impact of the NETS has exceeded what the original designers expected. The depth and breadth of use have increased dramatically, and application of the NETS now reaches an international audience. Citing the impact of the NETS, panelist Jim Bosco, Ed.D., said, "I invite you to look at CARET [Center for Applied Research in Educational Technology], the ISTE research site in educational technology for research studies based on the standards."

Technology Literacy Assessment

Notably, the expert panelists outlined assessment as the next development in the field of educational technology. ISTE Deputy CEO Leslie Conery, Ph.D., asserted, "Assessment is the whole next area where we've had a lot of conversation about what to do next. There's a lot of energy and effort going into assessment. Right now, the assessments that are out there at the classroom level … [are] primarily teacher-created assessments that are used to monitor where their [students'] progress is. There aren't a lot of formal assessments that have a high degree of reliability and validity.… Those types of tests are not out there right now."

With few formal assessments available, ISTE is partnering or exploring partnerships with four companies. "There will be choices very soon," Dr. Conery added. One such choice is being developed by Learning Point Associates to assist state and district leaders in their efforts to measure and monitor the development of student technology literacy throughout the

elementary and secondary grades. For a limited time, a draft of the *NETS for Students: Extended Rubric* can be viewed, and feedback can be provided (visit **www.ncrel.org/tech/nets/**.)

Professional Development in Educational Technology

Webcast panelists suggested that on-site professional development with a school's own hardware, perhaps even just-in-time professional development, is the direction to go to make real progress with supporting a teacher's use and integration of educational technology.

One of the key issues in professional development, as noted in the essential conditions of the NETS, is "shared vision and leadership," NETS Project Director Lajeane Thomas, Ed.D., said. "The best examples I've seen of schools that have integrated technology and are making great strides and improving their standardized test scores … [had] an informed leader—one who collaborated with the faculty and supported them in their efforts not only to use technology but [also] to have planning time for technology, have professional development on-site, and have a technology facilitator in their school."

Ultimately, through community and policy support, the goals of professional development ought to work toward providing opportunities for technology use that is meaningful to educators, and through them, to the students as well.

Webcast Panelists

July 30, 2004

Gary Bitter, Ph.D.
Executive Director
Technology Based Learning and Research
Arizona State University

Jim Bosco, Ed.D.
Professor
Educational Studies
College of Education
Western Michigan University

Leslie Conery, Ph.D.
Deputy CEO
ISTE

Lajeane Thomas, Ed.D.
Project Director
ISTE NETS

Moderator

Cathy Gunn, Ph.D.
Executive Director
NCREL

Further, the panelists identified that self-assessment plays a vital role in professional development. As part of a "continuum of excellence in professional performance," explained panelist Gary Bitter, Ph.D., self-assessment "provides a very different framework for professional development." He noted that "through self-assessment, an educator now has the opportunity to say, 'I'm going to professional development because I know I need it, not because you tell me I need it.'"

Relevance of the ISTE NETS

Panelists asserted that although the NETS for students were developed six years ago, the standards themselves have not become outdated. What must be continually updated, however, are the materials that support them, because the technology itself is always changing. Dr. Conery explained, "If you look at the standards themselves—not the performance indicators underneath but the core standards—they have not become outdated. They are still incredibly relevant.… The same types of things we talk about are the things that are talked about there [21st century learning and skills]. So, the six core standards … those things are still as important today as they ever were.… What has changed is the technology that's available."

With this expert projection on the future of the ISTE NETS and the changing face of educational technology, the panelists commented on the importance of critical and continuous feedback from educators and administrators. In fact, understanding the changing role of technology and the NETS and being able to gauge the future direction of the NETS within the field largely depend on such input from those who are integrating technology into curricula and applying the NETS.

An archived version of the webcast can be viewed for a limited time at **www.ncrel.org/tech/nets/webcast.htm**. ●

Web Resources

Center for Applied Research in Educational Technology
caret.iste.org

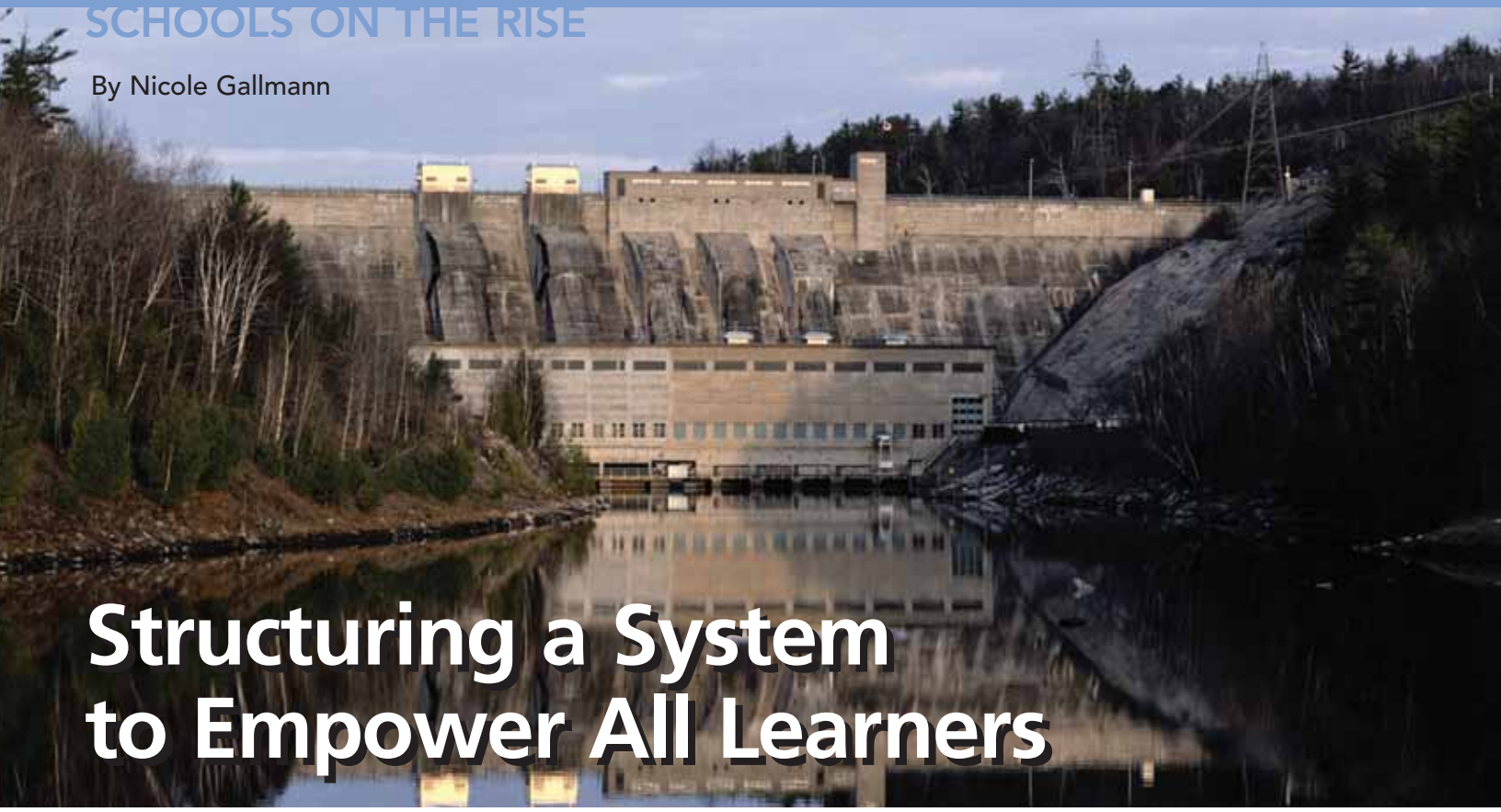
National Educational Technology Standards Project (NETS)
cnets.iste.org

NETS for Students: Extended Rubric
www.ncrel.org/tech/nets/

No Child Left Behind Act of 2001
www.ed.gov/policy/elsec/leg/lesea02/

Quick Key No. 3, "Understanding the No Child Left Behind Act of 2001: Technology Integration"
www.ncrel.org/tech/qkey3/index.html

By Nicole Gallmann



Structuring a System to Empower All Learners

By striking a balance between technology resources and professional development, an Illinois elementary district is a model for achievement possibilities for every student.

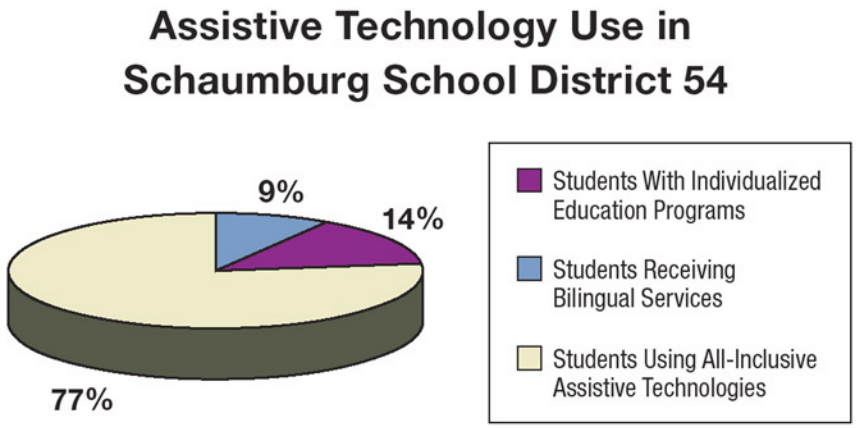
Looking forward, Ed Rafferty prepares for his first school year in his new role as superintendent of School District 54 in Schaumburg, Illinois. His voice conveys enthusiasm and accomplishment when he discusses the impact the district's assistive technology support efforts have made on its numerous students: "The assistive technology applications and support mechanisms that this district offers to all its students have made a significant difference in the lives of many, many students. A student who otherwise could not communicate, who is now communicating with the support of assistive technology—that's, to me, the most amazing thing."

In response to the escalating assistive technology needs of the district's growing student population, administrators, educators, and school board members collaborated nearly a decade ago to identify a means for supporting special-needs students. What subsequently took shape is a comprehensive professional development approach using assistive technology as a way to bring all students closer to meeting adequate yearly progress (AYP), as required by the No Child Left Behind Act. According to Kate Nolan, Ph.D., chief officer, Professional Services Group at Learning Point Associates, using a comprehensive approach to planning for professional development is the way to go, whether the issue is assistive technology or improving mathematics instruction. "But in the case of assistive technologies," Dr. Nolan says, "a comprehensive approach is even more important than usual—because addressing a district's assistive technology needs in a piecemeal fashion costs more and has less impact than planning in a comprehensive fashion."

In particular, the District 54 comprehensive assistive technology program offers support in two ways: making the needed technologies available to special-needs students and offering professional development to educators who are integrating assistive technology into their curricula. The district's support of students includes offering resources and tools that enhance the education of students with special needs or language barriers; the district's support of educators takes shape in its assistive technology professional development program, which is called the "A Team" (**A**daptive **T**echnology **E**nhancing **A**cademics through **M**odifications). Educators are further encouraged to collaborate with each other by sharing their various strategies for integration and modification of assistive technologies.

As the largest elementary school district in Illinois, District 54 was also one of the first districts to take an inclusive approach to assistive technology. That is, assistive technology is made available to students with and without disabilities and/or language barriers. Of the district's more than 15,500

students enrolled in prekindergarten through eighth grade, 2,150 students have individualized education programs, and another 1,400 receive bilingual services (see pie chart at right). Although all students in the district are able to make use of the provided assistive technologies, approximately 23 percent of the district's enrollment consists of students with special needs.



Lynne Rauch, Ed.D., (see Reed, Clifford, & Svedkauskaite, 2004) who retired in 2004 after nine years as District 54 superintendent, noted, "The greatest challenge we face today is giving explanation as to why when one child's needs are met, that takes nothing away from another child.… The more needs we meet, … the better opportunities we all have.… You allow everyone to touch, to feel, to understand."

Continuing the district's dedication to assistive technology, Superintendent Rafferty affirms that the commitment to the integrated use of assistive technology involves educators and administrators at all levels of the district. It is a commitment made and sustained by the board of education and the teachers themselves. As a result of this commitment, the concept of the A Team was developed in 1998 with the intent to effectively organize and disseminate the burgeoning information in the assistive technology field, and as a means to assist teachers with properly adapting or modifying assistive technologies for students with special needs or language barriers.

The A Team, a group of educators that hold hands-on, highly interactive training sessions covering how to use an assistive technology and how to adapt that technology to the needs of the special-needs student, has reached over 300 educational staff from all 27 schools in the district. Teams learn how to integrate and adapt text readers, audiotapes, audio spellers,

How Assistive Technology Tools Benefit District 54 Students

The following examples of assistive technologies and their districtwide use were provided by Carol Leffler, assistive technology facilitator in District 54.

For students with learning disabilities or reading difficulties, **scanning, reading, and writing software** allows textbooks, novels, tests, assignments, and reading materials to be scanned into digital format. "Students read and learn information as it is presented auditorily and visually," explains Leffler. "Students take notes, write definitions, answer questions, and even highlight important information in their 'computer' book version. Highlighted information can then be extracted from the book, saved, and printed out to serve as a study guide."

Another assistive technology tool is **books written through specialized reading formulas** that promote independence and success for struggling readers. These include paperback, electronic, and audio forms. Leffler explains that "students can interact with these books auditorily, visually, or both ways. Computer books allow students to progress independently and at their own pace. Features such as text highlighting, professional narration, and chapter quizzes entice students to read more. We have seen students make greater progress in reading skills when they read more."

District 54 also uses subscription **Web sites offering downloadable materials** to teach guided reading, phonics, phonemic awareness, fluency, and comprehension. "Teachers throughout the district have gone wild with these Web sites," says Leffler. "Because of the affordability, subscriptions have been purchased for many educational staff in the areas of regular and special education, bilingual, struggling readers, and others. Teachers download and print out hundreds of books, as well as balanced literacy activities for their students. Teachers are reporting that they now have enough books for their guided and self-selected reading times, and students can take books home because they have their own copies."

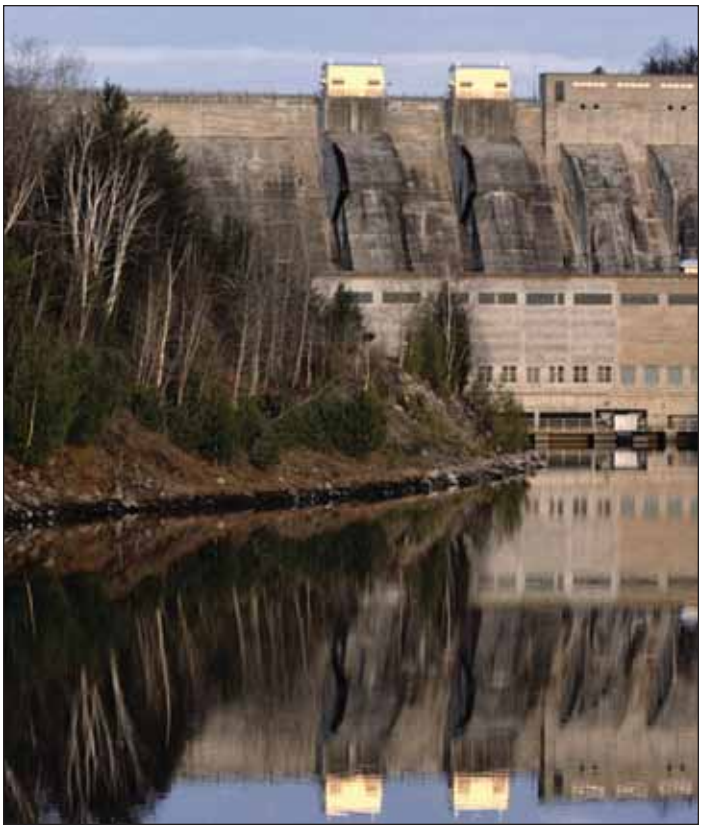
voice recognition devices, content-area-specific software programs, and other assistive technologies.

Generally, an A Team consists of teachers (both special and general education), but it also has included speech and language pathologists, bilingual staff, occupational and physical therapists, special-education administrators, instructional coordinators, and teaching assistants. Potential members must meet the prerequisite 35 hours of coursework training in assistive technology *before* applying to become team members.

Now preparing for the program's seventh year this fall, "A Team VII" will continue by focusing on the three goals developed by the district's Assistive Technology Services:

- Learning about new technology to be integrated into their curriculum.
- Sharing what they learn with their colleagues in their schools.
- Returning to the students with an excitement for learning that is contagious. (School District 54, 2004)

More recently developed (heading into its fifth year) is a newer designation called Team X. It focuses on continuing the learning process and discussion begun among A Team members. As Rafferty explains, "Team X requires that applicants have spent at least one year on an A Team and provide a portfolio of their implementation and adaptation of the strategies they learned as they have applied them to their own students and shared them with other educators.… It's almost like the A Team is the undergraduate level of professional development support, and Team X is the graduate level." With a more experienced and veteran membership, Team X moves beyond the tenets of the A Team to explore ways to better employ the technologies already in use in the district's classrooms, and even to investigate technologies that are new to the market for possible use within the district.



"There really is no reason why a student should be failing or not meeting their goals or achieving in class, because we have so many ways that we can help our teachers help those students."

—Carol Leffler, Assistive Technology Facilitator, Schaumburg School District 54

After six years of adapting, modifying, and integrating assistive technology in response to the A Team and Team X community, the district has collected an extensive number of ideas and best practice examples. With the start of this school year, Assistive Technology Services will make available through its intranet a searchable database of the nearly 18,000 adaptations of assistive technologies gathered from A Team and Team X members and the educators who have benefited from the professional network they share within the district.

Assistive Technology Facilitator Carol Leffler (see Reed et al., 2004) said, "There really is no reason why a student should be failing or not meeting their goals or achieving in class, because we have so many ways that we can help our teachers help those students. Our A Teams have been very instrumental in bringing resources into buildings and into classrooms that can help all students."

Through its balance of assistive technology supports for both teachers and students, District 54 is a model of success in providing tools for all learners. Its success is evidenced through districtwide acknowledgment that effective and inclusive integration of assistive technology relies on the proper education and support of the teachers responsible for the education of the special-needs students. As the district continues to employ this approach, teachers will continue to be supplied with the skills and strategies necessary for leveling the learning field so that all students are given the opportunity to achieve their full potential.

For more information about Schaumburg School District 54, visit the district's Web site (web54.sd54.k12.il.us). ●

References

Reed P., Clifford M., & Svedkauskaite A. (2004). *Enhancing system change and academic success through assistive technologies for K–12 students with special needs*. Retrieved August 31, 2004, from http://www.ncrel.org/sdrs/areas/issues/methods/technlgy/te700.htm

School District 54. (2004). *Assistive technology teams*. Retrieved August 31, 2004, from http://web54.sd54.k12.il.us/instruct/atech/attxcalendar.htm

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