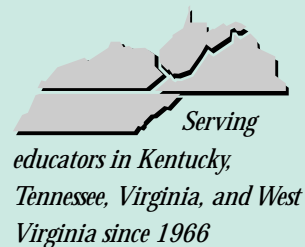


Vol. 19, No. 2

THE LINK

A PUBLICATION FOR EDUCATION PRACTITIONERS



Professional Development

Enlist Colleagues in Reflection and Planning

Focused on student learning. Driven by a coherent long-term plan. Planned collaboratively by those who will participate.

These phrases from the U.S. Department of Education's principles of high-quality professional development describe current thinking about helping educators learn how to help students achieve. Much can be accomplished with the resources at hand in a school or district.

Collaboration

Whether they're dealing with comprehensive school reform, integrating technology into the curriculum, or helping students achieve to high standards, school staff and teachers who want to be more effective look for high-quality professional development. Some of their best resources may be right down the hall. When colleagues become collaborators, members of a school commu-

nity can support and enrich one another's work to the benefit of all.

Michael Fullan, dean of the Ontario Institute for Studies in Education at the University of Toronto, suggests that schools with a collaborative work culture manage change better, and that collaborative culture is developed in part through becoming a learning community.¹

In its framework for teacher professional development, the National Center for Research on Teacher Learning provides suggestions for new roles and ways of teaching to support education reform efforts. Among them are the following:

- **First and foremost, teachers need opportunities to work with colleagues, both in their school building and beyond. They need chances to learn from one another's successes and failures and to share ideas**

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See Insert/Order Form in center to learn about avoiding road blocks and detours on the road to improvement.

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The Link is free to educators in the AEL region. Readers are encouraged to reproduce its contents, giving proper credit. On request, AEL will provide camera-ready copy on white paper. Current and many back issues are available in PDF at <http://www.ael.org>.

Professional Development

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Notes: Professional Development

1. "Leading Change in Professional Learning Communities," *Education Update*, 41 (8), December 1999, 1-2.
2. The National Center for Research on Teacher Learning, *Learning to Walk the Reform Talk: A Framework for the Professional Development of Teachers*. (East Lansing, MI: NCRTL, 1995).
3. D. Sparks and S. Hirsh, *A National Plan for Improving Professional Development*. Oxford, OH: National Staff Development Council, 1999. <http://www.nsd.org/library/NSDCPlan1.html> (31 January 2000).
4. J. Archer, A. Bradley, and D. Hoff, "Teacher Reflection" in Teaching & Learning section, *Education Week*, March 3, 1999, 12.
5. C. Howley-Rowe, in a forthcoming AEL case study evaluation report.

and knowledge.

- **Teachers need to be part of a *larger learning community* that is a source of support and ideas—a community that consists of administrators, students, parents, school councils, school boards, and business people.**²

The National Staff Development Council (NSDC), in its national professional development plan, includes recommendations that urge school systems to

- **Embed opportunities for professional learning and collaborating with colleagues in the daily schedule of teachers. NSDC advocates that at least 25% of teachers' time be devoted to their own learning. Schools should schedule more time for collaborating with colleagues.**
- **Recognize the importance of skillful leaders in schools and at the district level who have a deep understanding of instruction, curriculum, assessment, and the organizational factors that affect student learning.**³

Reflection

The value of reflection is gaining increasing recognition, as evidenced by a study conducted by teachers in the education college at Ohio State University. They evaluated two groups of graduate students in the school of education. While both were asked to reflect once a week on what they were learning and record their thoughts in a journal, the control group was told little more than that. The experimental group received advice and guidance, and was also encouraged to talk with other students. The researchers found that the journal entries of the experimental group demonstrated a higher level of internalization and more practical ideas for ways to use what had been

learned.⁴

Structured reflection helps practicing teachers also, as many action researchers would confirm. The School Change Collaborative of the Regional Laboratory Network Program, a group of researchers, education practitioners, students, and parents, has nurtured reflective processes that help schools improve. One of these, Structured Reflection Protocol, has been used by several schools in the AEL region.

Principal Earl Wiman of Alexander Elementary School in Jackson, Tennessee, credits the process with helping to raise writing scores. In 1998, 51% of Alexander's fourth graders scored below "competent" on the Tennessee Writing Assessment. After a year of using Structured Reflection Protocol with teachers and students, only 33% of fourth graders landed in the "flawed" or "deficient" categories. An Alexander teacher reported that the process gave her discussions a focus they might otherwise have lacked. Wiman believes that teaching students the process helped them begin to view writing not as work assigned by the teacher, but as their own.⁵

Planning

Making time to collaborate and reflect with colleagues are strategies that should be included in a school- or district-level professional development program. The following two programs provide guidance on planning a high-quality program.

National Awards Program for Model Professional Development

This program recognizes schools and districts with model professional development activities in the pre-kindergarten through 12th-grade levels that have led to increases in student achievement.

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The Principles of High Quality Professional Development

The U.S. Department of Education recognizes schools and districts that provide high-quality training to their educators. AEL and the nation's other regional educational laboratories work with department staff to review applications, make site visits, and select award winners.

High-Quality Professional Development

- focuses on teachers as central to student learning, yet includes all other members of the school community
- focuses on individual, collegial, and organizational improvement
- respects and nurtures the intellectual and leadership capacity of teachers, principals, and others in the school community
- reflects best available research and practice in teaching, learning, and leadership
- enables teachers to develop further expertise in subject content, teaching strategies, uses of technologies, and other essential elements in teaching to high standards
- promotes continuous inquiry and improvement embedded in the daily life of schools
- is planned collaboratively by those who will participate in and facilitate that development
- requires substantial time and other resources
- is driven by a coherent long-term plan
- is evaluated ultimately on the basis of its impact on teacher effectiveness and student learning, and this assessment guides subsequent professional development efforts

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Prepare to apply with the help of *Professional Development: Learning From the Best*. This toolkit for schools and districts, just released through a cross-lab effort that involved other education groups and the U.S. Department of Education, is based on the National Awards Program. It guides professional development planners through the steps of designing, implementing, evaluating and improving, and sharing professional development learning. It includes tools that support each step, as well as profiles of schools that have won model professional development awards. Copies are available free on-line at <http://www.ncrel.org/pd/toolkit.htm> or contact North Central Regional Educational Laboratory at 800-356-2735 for information about purchasing print copies.

The National Board for Professional Teaching Standards

The Five Propositions of Accomplished Teaching

1. Teachers are committed to students and their teaching.
2. Teachers know the subjects they teach and how to teach those subjects to students.
3. Teachers are responsible for managing and monitoring student learning.
4. Teachers think systematically about their practice and learn from experience.
5. Teachers are members of learning communities.

Around these five propositions, the Board builds standards for professional achievement in many specialty areas. National Board Certification offers many rewards, not the least of which is being recognized as a professional.

Get More Information

National Awards Program for Model Professional Development

Get application information from Sharon Horn, Office of Educational Research and Improvement, U.S. Department of Education; phone 202-219-2203, fax 202-219-2198. You may also use e-mail: sharon_horn@ed.gov or visit the Web site at <http://www.ed.gov/inits/teachers/teach.html>.

National Board for Professional Teaching Standards

Visit the Web at <http://www.nbpts.org> or phone 800-22TEACH.

Research Notes

The U.S. Department of Education's Office of Educational Research and Improvement funds research through regional educational laboratories, national centers, and field-initiated grant studies. Here are summaries of recent work in various areas.

Helping Elementary Students Achieve “Thoughtful Literacy”

Center on English Learning & Achievement

As part of an ongoing study of effective classrooms led by highly effective teachers, researchers have identified a set of core teaching characteristics that seem to foster thoughtful literacy in elementary students.

Managed choice helps to involve students in learning and to increase their interest in a subject and the quality of their work. Teachers find a balance between making all decisions themselves and turning decisions over to students, thus providing students with more control over learning.

Providing a *multi-source curriculum* helps students gain different perspectives and an in-depth understanding of a topic.

Augmenting textbooks with other sources helps students compare, summarize, synthesize, and generally develop higher-level thinking skills.

Multi-task learning means avoiding situations that expect every student to produce the same answers. Rather, multi-task assignments might ask students to use their own thinking to write a summary or synthesis of a lesson. This might include creating a graphic organizer that could be used as a basis for a discussion in which every student would be expected to take part.

Meaningful classroom discussion plays an important part in the study's effective classrooms. Not only do these discussions help to build content understanding, they help students learn to value and appreciate their own thinking and that of others.

Effective teachers know that *thinking takes time*. They use integrated instruction to create large blocks of time devoted to specific topics. This gives students a chance to experiment with, think through, discuss, and refine their understandings.

These core practices do not fit the traditional lesson plan format, but the effective teachers who use them find them no

harder to implement. And they believe the results—improvements in student work and involvement—make them well worth considering.

Paula Preller, “Fostering Thoughtful Literacy in Elementary Classrooms,” in *English Update* (Spring 2000). The Center on English Learning & Achievement. Available on-line at <http://cela.albany.edu>. For a print copy, write *English Update*, University at Albany, SUNY, ED-B9, 1400 Washington Ave., Albany, NY 12222, or phone 518-442-5026.

Making the Most of Summer School

University of Columbia-Missouri

Summer schools can provide remediation or enrichment for students as well as extra income and professional development for teachers. Given the current emphasis on helping all students meet challenging standards, summer programs will likely continue to grow. Researchers analyzed and synthesized the results of 53 evaluations of summer schools. Study results have important implications for policymakers and program administrators.

Key Findings

- Programs that focused on remediation had a positive impact on knowledge and skills. There were larger effects on math achievement than on reading, and greater effects for students in the early primary grades and in secondary school than those in the middle grades.
- Summer school programs that focused on multiple goals or acceleration of learning had a positive impact about equal to programs that focused on remediation.
- Middle-class students experienced greater achievement gains than students from disadvantaged backgrounds.
- Summer school programs had positive effects for students with disabilities.

- When summer remedial programs serve a small number of students and schools in a small community, positive effects may be larger. However, larger programs may be serving poorer communities, so economics may be an underlying cause for the difference in effects.
- Summer school programs that include regular monitoring of instruction may produce larger effects than those that are not monitored.
- Mandatory-attendance summer remedial programs are as effective, if not more effective, than voluntary attendance ones.

Recommendations for Policymakers

- Continue funding for summer school programs.
- Direct a significant portion of funding to mathematics and reading instruction.
- Set aside funds to help students, particularly those from disadvantaged backgrounds, participate. This could include transportation and food service.
- Allow significant local control of service delivery, since flexible delivery systems may improve outcomes.
- Require rigorous formative and summative evaluations.

Recommendations for Program Implementers

- Plan early to ensure that summer programs are seen as integral to school services.
- Provide continuity from year to year, with an emphasis on hiring staff who have worked in the program in past years.
- Integrate summer professional development with summer school to allow teachers to practice using new curricular or pedagogical approaches.
- Implement programs that operate shortly before the new school year, using students' regular classroom teachers for at least part of the instruction. The researchers call such an approach "The Running Start Summer Program Component."

Cooper, Harris; Charlton, Kelly; Valentine, Jeff C. *Making the Most of Summer School: A Meta-Analytic and Narrative Review*. University of Missouri-Columbia, 1998.

For information on the study, e-mail Oliver_Moles@ed.gov. For copies of the publication, e-mail cooperh@missouri.edu or visit the Web at <http://www.missouri.edu/~psychhc>.

Rural Systemic Reform

Northwest Regional Educational Laboratory

This study examined education reform in rural Alaska communities and schools, but it provides findings and recommendations that are relevant to rural schools and communities anywhere in the country.

Researchers conducted seven case studies in villages and school districts, all of which were using a reform process called Alaska Onward to Excellence (AOTE). This program works to build partnerships between the community and schools by involving the community in helping to shape and monitor the direction of the education system.

Key Issues to Implementing Reform

- **Sustaining reform.** The most significant barrier to sustaining reforms was persistent teacher, principal, and superintendent turnover. While rural schools employ only one-third of the state's teachers, they typically hire over two-thirds of the new teachers each year. Such turnover results in schools having to reinvent themselves every two or three years. Though AOTE helped to create leadership within the community, the district and the community should develop talent from within so that teachers are strongly rooted in the communities where they teach.
- **Sharing leadership.** Community ownership in decisions related to reform will help move education changes forward even if the school staff changes.

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National Clearinghouse for Comprehensive School Reform

Want to know more about reform models? Interested in sharing experiences with other schools undergoing comprehensive reform? Need information on best practices? Looking to join a community of school reform researchers? Go to the Clearinghouse Web site for reports, discussion groups, resources, an electronic newsletter, and more.

The Clearinghouse is funded by the U.S. Department of Education's Office of Educational Research and Improvement and operated by The George Washington University.

Web address: <http://www.goodschools.gwu.edu>
 E-mail address: AskNCCSR@goodschools.gwu.edu
 Phone toll-free: 877-766-4CSR
 National Clearinghouse for Comprehensive School Reform
 George Washington University
 2121 K Street, Suite 250
 Washington, DC 20037-1801

Improving America's Schools Conferences

Mark your calendars now for these events.

- October 2-4, Louisville, KY: Central region, includes Tennessee and Kentucky
- December 13-15, Washington, DC: Eastern region, includes Virginia and West Virginia

Updates about the conferences, as well as videos of 1999 sessions and Education Reform Institute resources, are available on-line at <http://www.ncbe.gwu.edu/iasconferences>. Get information by phone at 800-203-5494.

Research Notes

(continued from page 5)

- *Building relationships and trust* Reformers in rural areas need to understand local context and build reforms from the inside out rather than relying solely on external reform models.
- *Enacting new roles* Rural schools need to create a range of parent involvement strategies that are appropriate for small communities.
- *Creating coherent reforms* AOTE helped to set a clear direction and vision for student success and gave school staff and community members the opportunity to think about and discuss how to work together to educate children in a changing world. Yet, it did not help to substantially change teaching and learning because there were already so many educational programs operating in the schools.
- *Creating healthy communities* The case studies found that education had a larger purpose than teaching academic skills and knowledge. AOTE helped communities to identify community wellness goals as well as academic goals.

Recommendations

- Stabilize professional staff in rural schools. School districts can establish career ladders and staff development plans. The state department can work with universities on licensing regulations and teacher education standards.
- Provide role models and support for creating a positive self-image. Students are often caught between their indigenous culture and the influences of the outside world. (Native educators developed Alaska Standards for Culturally Responsive Schools to deal with some of these issues.)
- Treat parent involvement as a partnership, with more shared decision making.
- Implement teacher orientation, mentoring, and induction programs.
- Extend strategic planning to the next

generation or more (20-plus years) at the state and local levels. Many issues facing rural schools are cross-generational in nature and need to be addressed over a longer time span than is typically used in strategic plans.

- Develop culturally responsive curricula that integrate local and global academic and practical learning.
- Encourage the development of multiple paths for students to meet state standards. In Alaska, the cultural standards developed by Native educators help students meet state standards while also becoming “responsible, capable, and whole human beings.”
- Extend the cultural standards and Native ways of knowing and teaching into teacher preparation programs.
- To sustain reform, use a bottom-up process with a purpose that goes beyond reform for reform’s sake.
- Form a coalition of organizations to sponsor an annual conference on rural education. Such a conference could review reform initiatives, showcase promising curricular reform models, provide information on implementation, and help participants establish a support network.

Study of Alaska Rural Systemic Reform: Final Report. Northwest Regional Educational Laboratory and University of Alaska Fairbanks. October 1999.

For information on the study, e-mail Beth_Fine@ed.gov. For copies of the publication, e-mail KushmanJ@nwrel.org.

Long-Term Effects of Early Childhood Interventions

Predictors of Early High School Dropout in the Chicago Longitudinal Study

University of Wisconsin at Madison

An ongoing study has examined the effects of participation (from ages 3 to 9) in

the Chicago Child-Parent Centers on early school dropout at age 18. The Chicago program offers educational and family support services for about 5,000 children per year, in preschool through second or third grade in Chicago's poorest neighborhoods. The program is designed to help preschoolers start school ready to learn, and perform better academically once they are in school.

This analysis is part of a larger longitudinal study of the Chicago Centers that includes a matched comparison group of children who participated in an alternative early childhood program. Given that high school graduation is a major predictor of socioeconomic status and earnings capacity, findings from this investigation can inform the design and evaluation of early childhood programs.

The three major research questions and related study findings include the following: *Is participation in the Child-Parent Centers associated with a lower rate of high school dropout by age 18?*

Yes, the study found that participants in the Chicago Child-Parent Centers were less likely to drop out of school by age 18. Overall, 27% of the preschool participants dropped out by then, compared to 35% of the non-preschool participants. Further analyses have revealed that the estimated effect on high school dropout rate is significantly greater for boys than for girls.

Do the timing and duration of program participation significantly contribute to the prediction of high school dropout?

Yes, the children with the lowest rates of school dropout entered the program at age 3 or 4 and participated for 5 or 6 years (preschool to third grade). Their rate of school dropout was 23% compared to 33% for children with no participation in the program and 28% for children with any participation (1 or more years).

Which non-intervention variables contribute to high school dropout rates?

Student mobility, grade retention, and parental involvement were all found statisti-

cally significant predictors of dropping out. Each school move increased the probability of dropping out by 5% and each grade retention increased the probability by 10%. Girls (25%) had a significantly lower rate of dropout than boys (35%) and this difference occurred across all program comparisons.

Reynolds, A.J. *Success in Early Intervention:*

The Chicago Child-Parent Centers. Lincoln, NE: University of Nebraska Press, in press.

Reynolds, A.J., Ed. "Schooling and High-Risk Populations: The Chicago Longitudinal Study." *Journal of School Psychology* 37(4) (1999).

Reynolds, A. J., Miedel, W.T., and Mann, E.A. "Adopting Innovation in Early Childhood Education: Lessons from the Chicago Child-Parent Centers." *Young Children*, in press.

Temple, J.A., and Reynolds, A.J. "School Mobility and Achievement: Longitudinal Findings from an Urban Cohort." *Journal of School Psychology*, 37(4), 355-377 (1999).

For information on the study, e-mail Oliver_Moles@ed.gov. For copies of the publication, e-mail jtemple@niu.edu

Preschool Programs Affect Rural Drop-out Rate

From 1968 to 1971, AEL conducted a preschool education project called Home-Oriented Preschool Education (HOPE). Intended to provide parents and children with information and skills that would assist school readiness, the HOPE field experiment followed as many participants as possible throughout their K-12 schooling. Findings in the early years showed HOPE children coming into kindergarten better prepared than many of their peers, regardless of ability level or socioeconomic status.

In later years, grade failure and graduation rates of HOPE children were compared to predicted outcomes for children outside the program. While the general population of children experienced a 22% rate of failure in at least one grade, only about 9.8% of the HOPE children were ever held back. The general graduation rate was just below 73%; HOPE students achieved an effective rate of more than 87%.

These results with rural children, when considered in conjunction with the Chicago study's urban results, reinforce the importance of well-designed preschool programs to student success.

Gotts, E. E. *HOPE Revisited: Preschool to Graduation, Reflections on Parenting and School-Family Relations.* Charleston, WV: AEL, Inc., 1989. ERIC Document Reproduction Service No. ED 305 147.

Grant Opportunities

Guide to Funding Opportunities

The U.S. Department of Education has created an on-line guide to funding opportunities in 19 programs. The *Promising Initiatives to Improve Education in Your Community* site also describes exemplary projects and includes links to related resources. Visit the site at <http://www.ed.gov/pubs/promisinginitiatives>.

Computers for Learning Program

In order to ensure that American children have the skills they need to succeed in the 21st century, this program streamlines the transfer of excess federal computer equipment to schools and educational nonprofit organizations.

All public, private, parochial, and home schools that serve pre-kindergarten through grade 12 students are eligible to receive equipment, with preference given to those located in empowerment zones and enterprise communities or that demonstrate the greatest need.

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Federal Programs

Class-Size Reduction Program

Purpose: To help school districts hire and train teachers to reduce class size to a national average of 18 in grades 1-3.

States must apply for formula-based funding, then school districts will apply to states. Funds will be provided for teacher recruitment, hiring, and training; for new teachers to take competency tests; and for professional development.

Deadline: Mid-May 2000 (states apply for funds by this date; district deadlines will be announced by state agencies)

Application information available on-line at <http://www.ed.gov/offices/OESE/ClassSize>, by phone from Robert Stonehill at 202-260-8228, or by e-mail at classsize@ed.gov.

Elementary School Counseling Demonstration Program

Purpose: To establish or expand counseling programs in elementary schools.

Grants will be given to local education agencies that demonstrate the greatest need, propose the most innovative and promising approaches, and show the greatest potential for replication and dissemination.

Grants are expected to average from \$325,000 to \$400,000.

Deadline: June 2000

Application guidelines and information available on-line at <http://www.ed.gov/offices/OESE/SDFS>, or contact Loretta Riggins by e-mail at Loretta_Riggins@ed.gov or by phone at 202-260-2661.

Smaller Learning Communities Program

Purpose: To provide competitive grants for local education agencies to plan, develop, and implement smaller learning communities for students in large high schools.

LEAs may submit applications on behalf of individual high schools with enrollments of 1,000 or more students or to fund districtwide programs.

One-year planning grants will range from \$25,000 to \$50,000; three-year implementation grants will total \$250,000-\$500,000 per project.

Deadline: July 2000

Application information is available on-line at <http://www.ed.gov/offices/OESE/SLCP>, or contact Jeff Wilde at 202-260-1475.

Foundations

Toshiba America Foundation: Grades 7-12 Science Education

Purpose: To contribute to the quality of science education by investing in projects designed by and with classroom teachers.

Priority will be given to submissions from individual or groups of classroom teachers that present programs, projects, and activities that have the potential to improve classroom teaching and learning of science, mathematics, and the science and mathematics of technology.

Grant awards range from \$4,000 to \$9,500.

Deadline: Open

Application guidelines and information available on-line at <http://www.toshiba.com/about/taf/grant.html>, by e-mail at foundaton@tai.toshiba.com, or by phone at 212-588-0820.

The For All Kids Foundation

Purpose: To support at-risk and disadvantaged children by funding nonprofits that provide child care, health care, education, and other programs in underserved communities.

Preference is given to organizations that provide direct child care services. Grants may be awarded to child care centers for tuition scholarships, improving facilities, and upgrading equipment and also to help retain teachers and child care professionals who have demonstrated proficiency.

Deadline: Open (funds are disbursed in February and September)

Application information available on-line at <http://rosieo.warnerbros.com/cmp/allkids/grant.htm> or by mail from The For All Kids Foundation, P.O. Box 225, Allendale, NY 07401.

Other

Hobby Industry Association: Creative Lesson Plan Contest

Purpose: To expand hands-on learning when teaching core curriculum.

Educators may submit a lesson plan for grades K-8 that incorporates crafting and core curriculum.

First prize is a \$500 gift certificate for school craft supplies; honorable mentions will receive \$50 certificates.

Deadline: July 1, 2000 postmark

Mail entries (finished lesson plans) to NCM Lesson Plan, P.O. Box 217, Rockaway, NJ 07866. More information available on-line at <http://www.i-craft.com/teachers/contest.html>.

gURL.com: gURL Grants

Purpose: To help teenage girls explore and pursue their creative and intellectual interests in an in-depth way.

Grant requests can include such special projects as educational programs, summer camp, travel expenses, or equipment and materials to conduct a project. No previous experience in the area of interest is required. Winners will be expected to present a description of the project to the gURL.com Web site.

Grants start at \$1,000 and may go as high as \$3,000.

Deadline: July 1, 2000, for fall grants
Application available on-line at <http://www.gurl.com/grants>.

National Gardening Association: Youth Garden Grants

Purpose: To encourage children to directly learn and work in an outdoor garden.

Schools, neighborhood groups, community centers, camps, clubs, and intergenerational programs may apply. Groups must plan to garden in 2001 with at least 15 children between the ages of 3 and 18 years. Selection criteria include leadership; need; sustainability; community support; innovation; and educational, environmental, and/or social programming.

Grant awards consist of an assortment of tools, seeds, and garden products valued at more than \$750.

Deadline: November 1, 2000
Application available on-line at <http://www.garden.org/edu/nga-edu6.htm> or by phone at 800-538-7476.

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To apply for donated computers, visit the Computers for Learning Web site at <http://www.computers.fed.gov> and register your school. If the school does not have Internet access, designate someone who does to register on the school's behalf or register by phone with the Computers for Learning Administrator at 202-501-3846.

At the Web site, use the technology tutorial to assess the suitability of available computer equipment and find out how to contact volunteers who can help with upgrading computers.

The only cost to a school may be for shipping, however, a number of transportation systems and movers belong to the Computers for Learning Partnership and may provide free shipping. The Partnership Web site is at <http://hhgfaa.org/partnership>. By phone, contact the program Administrator at the number shown above.

Publications of Interest

Summer Reading

With education being such a hot topic, many books are appearing on library and book store shelves. Here are some that might be included on educators' reading lists.

- *The Students Are Watching: Schools and the Moral Contract* by Theodore R. Sizer and Nancy Faust Sizer
- *The Educated Child: A Parent's Guide from Preschool through Eighth Grade* by William J. Bennett, Chester E. Finn, Jr., and John T. E. Cribb, Jr.
- *The Big Test: The Secret History of the American Meritocracy* by Nicholas Lemann
- *The Schools Our Children Deserve: Moving Beyond Traditional Classrooms and Tougher Standards* by Alfie Kohn
- *Intelligence Reframed: Multiple Intelligences for the 21st Century* by Howard Gardner
- *Lessons of a Century: A Nation's Schools Come of Age* by the reporters and editors of *Education Week*

High Stakes Testing

The High Stakes of High Stakes Testing, a policy brief from WestEd (<http://www.wested.org>), addresses both the benefits and concerns raised by the growing use of high stakes testing. It offers specific recommendations for policymakers wishing to incorporate these tests in state accountability systems.

Assessment Resources

Two new products have been created by the Assessment Lab Network Program, in which AEL participates. The *Assessment Software Database* includes descriptions of electronic grade books, test generators, resource assistance, electronic portfolios, and more. Information on program features, specifications, implementation issues, and vendors is provided with each entry.

The *Promising Practices in Assessment Database* contains a variety of high-quality, assessment-focused materials developed by the 10 regional educational laboratories. The lab-created materials include toolkits, assessment instruments, how-to guides, research papers, audio and videotapes, and more.

Both databases can be accessed from the Assessment Core Work Team home page at <http://www.wested.org/acwt>.

Education Research and Promising Practices

The Office of Educational Research and Improvement (<http://www.ed.gov/offices/OERI>) recently unveiled its overhauled Web site. It includes a topical index of links to education research; news about OERI-supported research, publications, and funding opportunities; education improvement activities; library and information services; and more.

Research Reports from the National

Research and Development Centers (<http://research.cse.ucla.edu>) links to more than 600 research reports on education issues from 12 national research and development centers funded by OERI. Reports are often available here before appearing in print.

The Knowledge Loom (<http://knowledgeloom.org>) provides a searchable collection of promising practices on a range of topics. Special features, such as one on professional development, present research-based practices and examples of those practices in real schools. Users may participate in a panel discussion, ask questions of an expert, and post ideas or stories.

Math and Science Challenge for 8th Graders

Eighth-grade students can compare their performance in math and science to that of their peers worldwide on an interactive Web site that presents a version of the Third International Mathematics and Science Study. Developed by the Council on Competitiveness, the Internet Learning Network site (<http://www.getsmarter.org>) is in its "beta" phase. Feedback for improving the site and guiding its development is requested (using forms at the site).

Reading Panel Report

On April 13, the National Reading Panel released its report on scientific research-based reading instruction and its readiness for application in the classroom. The report outlines the most effective approaches to teaching children to read, the status of the research on reading, and reading instruction practices that are ready to be used by teachers in classrooms across the country. Secretary Riley welcomed the addition of this report "to the growing body of knowledge about the teaching of reading." He noted that the "report supplements the solid

foundation presented by the National Research Council” by reinforcing the call for a balanced approach to reading instruction: “This is further evidence that the reading wars are over.” *Report of the National Reading Panel: Teaching Children to Read* is available on-line at <http://www.nichd.nih.gov/publications/nrppubskey.cfm>.

Math Standards on CD-ROM

The Eisenhower National Clearinghouse for Mathematics and Science Education (ENC) has issued a CD-ROM set of the full text and graphics of the National Council of Teachers of Mathematics Curriculum and Evaluation Standards. Also included are standards from several states and content from ENC publications. Schools may receive one free copy; contact the Clearinghouse by phone 800-621-5785, fax 614-292-2066, or e-mail info@enc.org.

On-line Technology Journal

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“It is necessary but not sufficient to provide avenues to information and knowledge. What is more important is to empower people with appropriate educational, cognitive and behavioral skills and tools to access... acquire...apply...and upgrade their knowledge continuously and systematically.”

—Wadi D. Haddad, Editor
“Is the Divide Digital” in

TechKnowLogia, March/April 2000

Instructional Strategies

Ridding Math Word Problems of Language Barriers

By Elizabeth Lanou

It’s a nearly universal experience—sitting in math class wondering how to solve a complex word problem.

Imagine how much more difficult it must be for students with limited English proficiency. Some of these students may have had limited or interrupted schooling in their native countries, and now find themselves in a linguistically and culturally unfamiliar environment. They must construct understanding without the previous knowledge their classmates employ.¹

Some students who are learning English as a second language may know a written language that uses symbols and characters rather than numbers and letters—their experiences with word problems may be very different from those of Americans. Some

students may not be familiar with incorporating abstract concepts to solve word problems, and others have simply had no experience with word problems.

Teachers face the challenge of helping all students to overcome the fears, anxieties, or obstacles mathematical word problems present. Part of this challenge lies in teaching the students how to best comprehend the problems. Understanding and solving problems is an important real-world skill to acquire.

Fortunately, there are teaching strategies that work. Whether their students are culturally and linguistically diverse or simply find math difficult, teachers can take some of the pain out of solving word problems.

- **Choose relevant contexts in which to incorporate mathematical calculations.**²

(continued on page 12)

Notes: Math Problems

1. K. Buchanan and M. Helman, *Reforming Mathematics Instruction for ESL Literacy Students*. (Washington, DC: U.S. Department of Education, 1997). http://www.ed.gov/databases/ERIC_Digests/ed414769.html (5 January 2000).
2. S. Celedon-Pattichis, “Nine ESL Students’ Think-aloud Protocols on Five English and Spanish Word Problems.” Paper presented at the meeting of the National Council of Teachers of Mathematics, Research Pre-session, Chicago, IL, April 2000.
3. See note 1 above.
4. See note 2 above.
5. See note 1 above.
6. See note 1 above.

Math Anxiety

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Resources

Eisenhower National Clearinghouse for Mathematics and Science Education <http://www.enc.org>

Center for Research on Education, Diversity & Excellence <http://www.crede.ucsc.edu>

Center for Research on Cultural Diversity and Second Language Learning <http://www.ncbe.gwu.edu>

The problem will be less intimidating if the student can apply prior knowledge. Although textbooks don't normally incorporate word problems into contexts, thematic units can do this.

- Be cautious with the use of abstract concepts. They may be difficult for students, especially those who come from cultures that use concrete concepts rather than abstract ones.

ERIC Clearinghouse for Science, Mathematics, and Environmental Education <http://www.ericse.org>

Help! They Don't Speak English <http://www.ael.org/cac/helpkit.htm>
An excellent source of teaching strategies, lesson plans, and materials to help busy primary teachers more effectively include, instruct, and nurture LEP students. Most strategies promoted here are recommended for all students, not just LEP students.

- Help students grasp the problems by putting them in their own words. This can be done in small groups or whole class discussions.³
- Simplify the word problems by highlighting the main words and important ideas. Organize data logically.⁴
- Use manipulatives. Tools such as Cuisenaire rods, which use different colored rods to help students separate data, are powerful because they enable the students to literally see how data piece together.
- Access prior knowledge.⁵ Use pictures to elicit meanings of words.

Educators who work with culturally and linguistically diverse students consider their specific needs as they design a mathematics curriculum.⁶ Selecting strategies that address these needs can help every student in the classroom become more proficient. For more classroom strategies, consult the resources listed at left.

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