

R&D A L E R T

Discovering WHAT WORKS And Why

Decide What Your Students Need and Look for Curricula With a Proven Track Record

With a myriad of daily responsibilities and so many curriculum programs to choose from, it is no wonder that principals and their instructional staff struggle to identify the best programs to meet their students' needs. But with stakes high, selecting the best possible program is today more important than ever. The key, says WestEd Evaluation Research Director Naida Tushnet, is deciding what your students need and finding a program that fits.

"How can an administrator know that a textbook or program will meet his or her criteria? Ask the program's developer or publisher for impact data — information that shows what students learned from the materials," says Tushnet. Given each school's priority to ensure that all its students are learning, it is essential that schools and districts evaluate their students' progress, she adds. The most effective route is to incorporate evaluations into the district's work.

Tushnet and her staff recently completed a four-year evaluation of the National Science Foundation's (NSF's) Instructional Materials Development (IMD) Program, closely examining the development, dissemination, adoption, implementation, and impact of 30 selected products — mathematics and science textbooks for elementary, middle, and high school students, and some supplementary materials. In this study, evaluators learned that many schools do not

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"The first step for districts is to say, 'We want data.' If enough districts were to ask for such information, the publishers would include it or be forced to admit they don't have it."

Naida Tushnet,
WestEd Evaluation Research Director

WestEd

*Improving education through research,
development, and service*

FROM THE CEO: Evaluation for Learning



Welcome to the Winter 2001 issue of *R&D Alert*.

We all suffer when classroom efforts don't have the desired result — when students don't learn. Because students should succeed and thrive, we cannot afford to make the wrong choices when selecting the materials we use to teach.

It is our obligation to know what works and, as importantly, why. Educators charged with helping students learn are faced with so many alternatives — in approach, curricula, textbooks, and pedagogy. Solid evaluation of the available options is critical to understanding which approaches work best.

At WestEd, we are committed to helping schools gather and report data about student outcomes — and then developing steps to act on that knowledge. Our work includes assisting districts as they assess what their students need, examining what programs are available to meet those needs, and then deciding how to make the most informed choices for the improvement of instruction and learning.

Similarly, WestEd's Evaluation Research program is also committed to working with community-based

programs and organizations, and with partnerships between education and social service agencies. Our evaluation of the federally funded Educational Partnerships Program, for example, yielded important findings about what works — findings that are now informing our study of the California Academic Partnership Program.

In the following pages, we highlight our agency's work in evaluation and some of the lessons learned from those efforts. At the core of this work is a commitment to helping schools, districts, community organizations, and other agencies understand whether a program is doing what it was intended to do, whether it was implemented properly, and how it could be improved.

Drawing from our Evaluation Research program's recent examination of the National Science Foundation's Instructional Materials Development Program, the lead article discusses what education decision-makers should look for when choosing instructional materials and how proven, research and development-based programs impact student learning.

Another article examines evaluation work undertaken by Learning Innovations at WestEd — how Massachusetts schools and districts are using their state's Comprehensive Assessment System results to change their curriculum, instruction, assessment, and allocation of resources. Other articles highlight tools and standards that can be used to evaluate curriculum programs effectively, what to look for when hiring an evaluator, and how to make the most out of that relationship.

We hope you will find the approaches described in this issue of *R&D Alert* helpful in your own work.

Glen H. Harvey
Chief Executive Officer, WestEd

Looking to boost academic performance in the state, the Massachusetts legislature in the early 1990s launched a high-stakes testing program for 4th, 8th, and 10th graders. Passing the Massachusetts Comprehensive Assessment System (MCAS) tests will be a graduation requirement beginning with this year's 10th graders — the class of 2003.

Such tests, of course, are not without controversy or opposition. Knowing how test results are and can be used has become vital to MCAS supporters and critics alike. Enter Learning Innovations at WestEd, hired by the Massachusetts Education Reform Review Commission (MERRC) to do just that: find out how schools are using MCAS results to change curriculum, instruction, assessment, and allocation of

For example, a group of sixth-, seventh-, and eighth-grade science teachers in one district, through their analysis of MCAS results, discovered that they were teaching the same aspects of the curriculum across the grades and that whole portions were being left untaught.

MASSACHUSETTS COMPREHENSIVE Assessment system

MCAS has provided schools and districts with evidence about where local curricula do not match the state frameworks. Necessary instruc-


Research shows how test results can support reform

resources. WestEd staff Ann Abeille, who directs Learning Innovations' research and evaluation program, and Nancy Hurley, Evaluation Associate, conducted the study.

"There was an assumption that MCAS would have a diagnostic value, but it needed to be proven," says Paul Reville, MERRC Chairman and Executive Director of Harvard's Pew Forum on Standards-Based Reform. "We called upon Learning Innovations at WestEd to test that assumption. Was the testing having an impact on education changes? Were teachers constructively using the data? We're pleased to say the research says yes."

Abeille found that a wide range of educators were using the test results, some for the first time. "In the past, it usually was just somebody like the assistant superintendent who looked at this kind of data," she says. "Now we see people across the board, including teachers, using the data to identify gaps in what their students are learning."

tional changes have been identified as well. One result: a greater emphasis on writing in the classroom. Overall, Abeille notes that more than 70 percent of the teachers surveyed say that using MCAS data has influenced the way they teach.

For more information, contact Abeille at 781.481.1101 or e-mail, aabeill@WestEd.org 



In the early stages of almost every education and social service program, the question arises: How are things going? Sometimes it is asked by those running the program, sometimes by the people who are funding it.

The search for answers often leads to WestEd's Evaluation Research staff. Director Naida Tushnet, Senior Project Director Jordan Horowitz, and Project Director Jerry Hipps, all veteran evaluators, perform dozens of analyses each year, scrutinizing programs involving everything from national school reform to community-based social service. *R&D Alert* invited the three of them to sit for an interview about their work.

Evaluation as a tool for change: Helping clients **ACHIEVE** results



Naida Tushnet, Evaluation Research Director

What is your basic approach to evaluation?

Tushnet: The most important issue for us is how we can help our clients move forward. Our evaluations start from the issues that are important to them. We ask a lot of questions and try to find out what each client wants to learn. Then we ask more questions. We seldom enter with a specific method; rather, we bring a toolkit to the job. Identifying a specific approach appropriate to the issue at hand is the only way to do a proper evaluation.

Hipps: Because our staff have been in many schools, in lots of different places, we have a sense of what to ask and what to look for. We have learned how to recognize a healthy student-teacher interaction or a program that works.

The first question clients want answered by an evaluation is: How are we doing? But, beyond addressing that concern, how deeply do most evaluations go? Do they usually address, for example, personnel issues?

Tushnet: Our evaluations make recommendations about program options that can affect classroom practice (or the equivalent in social services) but do not address personnel. We evaluate how well programs are operating, what impact there is. And, depending on the desired outcome, we look at the range of effects.



Jerry Hipps, Project Director

Hipps: The number of content areas we might address is quite varied, but what ties it together is the way we do evaluation research. It's more than just seeing if a program is working. We find out why it does or doesn't work.

A lot of what we evaluate are demonstration projects, and we attempt to learn all we can about the best way to operate them. We often are asked: What are the barriers? What needs to be done to make a program work properly?

So, usually you're looking at something that's new or novel, that hasn't been tried before?

Horowitz: Those requesting evaluations usually are looking to us to bring a certain knowledge to the table that may not be there, or a different perspective. It is our job to look at the situation, the components of a program, its infrastructure, and see if it all works together or if it lacks something that might help it survive or thrive. We know schools, reform, and how to help make things work.

When you meet a potential client for the first time, where do you start?

Tushnet: A lot of programs contain an evaluation component written as part of their proposal for funding. We ask about what's already been pro-

posed. We ask the client to describe their expectations of the evaluation process, what it will look like.

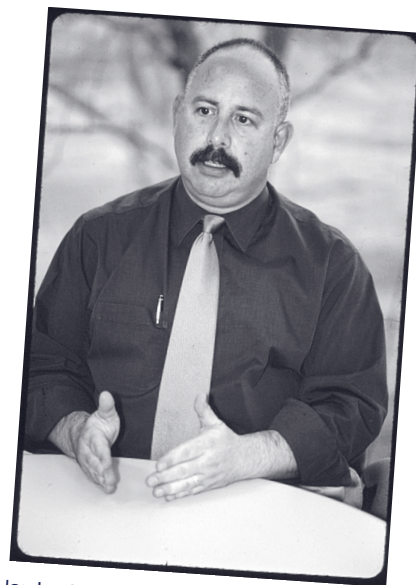
What we often hear is this: that the client wants to know if, after our work is done, they will learn how they might do things better on Monday morning. We try to meet that expectation.

Do clients hope you will validate their programs? Do they fear bad news?

Horowitz: Maybe a little of both. Some clients just want someone to say their program is great, but that's not what we're about. We work very hard to maintain objectivity and provide the feedback that will help people achieve their objectives.

Tushnet: Sometimes that means being the bearer of bad news. When that happens, we attempt to offer the information in a way that it can be heard and acted on. Some evaluators like to list all of the things wrong with a program to show how smart they are. That's not a productive approach. At the first glimmer of bad news, we inform the client.

Horowitz: Having information early that something isn't working usually isn't a problem. Such early news is a friend. It means that there is time to act. **W**



Jordan Horowitz, Senior Project Director

Selecting a curriculum that really does the job

Which curriculum or model program should we select? How do we go about the process of selection?

Considering all the available choices and the consequences of making a poor choice, the prospect of deciding, itself, can be daunting. Here are a few tips on how to assess your needs and identify a curricular program that fits:

- Be clear what your students need to learn in order to meet or exceed state standards. Begin your search for curricula with those goals or standards.
- When considering a specific text or program, ask the curriculum developers for evidence that students have learned by using the materials. Request impact data disaggregated by key demographic factors.
- Form a selection committee that includes not only school district administrators and teachers, but communities, businesses, and parents/legal guardians as well. Compare as many options as you have time to consider — certainly no fewer than three different texts or programs.
- If several programs offer genuine potential for meeting your goals or standards, try out those judged to be most promising on a small scale before making a major commitment — and investment — in any one of them.
- Be clear what you are getting. What specific services, training materials, and products are included in the total package?
- Use student assessments as your base guide in determining how well the newly accepted innovation is working.

(continued from page 1)

engage in much, if any, of their own comparative research when choosing materials and programs.

Forming a small curriculum selection committee, ensuring availability of a few different texts to compare, and insisting on evidence of student achievement from publishers, says Tushnet, are important steps toward finding an effective program.

Why insist on student outcome data? Because, she explains, many large curriculum publishers do not evaluate how effective their products are as they develop them. In an effort to reach a broader range of students, products touch on many standards applied across the country, rather than focusing deeply on specific areas identified as critical by individual states or districts.

Programs often are developed based on research about effective learning principles and technologies. But evaluation of student learning using the resulting research-based materials often is not available. Even in cases when such evidence is offered, it is still important for districts to evaluate the effectiveness of materials in the context of their schools and students.

“One of the things we found in the NSF study is that the actual evaluation of learning is short-changed in some ways,” says Tushnet. “The first step for districts is to say, ‘We want data.’ If enough districts were to ask for such information, the publishers would include it or be forced to admit they don’t have it.”

Another valuable step can be trying out one or a few programs on a small scale before fully committing. In the NSF study, evaluators found that the city of Kalamazoo, Michigan benefited from testing three programs before making a choice.

Tushnet acknowledges that trying out programs on a pilot basis requires major effort on the part of a district and that larger districts may have a harder time conducting such an experiment. On the other hand, large districts are better positioned to demand — and receive — impact data from curriculum developers.

Finally, says Tushnet, in spite of heavy testing in schools, administrators should evaluate whether their students are benefiting from a chosen program. While it is critical for publishers to gather student data on learning, it is also important for schools and districts to do so.

Tushnet stresses the value of districts knowing what their particular students and teachers need, and then seeking the appropriate tools to meet those needs. This approach, she says, is at the core of how WestEd evaluators conduct each evaluation. In some cases, evaluators help their clients clarify the goals of the evaluation.

Tushnet is hopeful that the prevalence of thoughtful evaluations will increase across the country.


“We think the client’s questions are key,” she says. “Answering their needs distinguishes pure research from evaluation research. In the latter, we are generating answers to questions that clients have. Our work is responding to client needs.”

When conducting evaluations such as the IMD Program, WestEd evaluators employ methods from sociology, psychology, and organizational theory and always work with an advisory panel of experts in the content area at hand. Choosing the most appropriate method for the kinds of questions they are answering, evaluators use case studies, surveys, experimental design, and field-based observation.

In addition to their work evaluating curricula and other school programs, WestEd’s Evalua-

tion Research staff are nationally acknowledged for their evaluations of community-based programs and of partnerships or collaborations among education and social service agencies. Their work in this area has yielded many important findings, chief among them the fact that successful, cross-agency partnerships pay at least as much attention to their internal relationships as to their shared activities and goals.

That knowledge is now informing the group’s evaluation of the California Academic Partnership Program. Also ongoing are evaluations of Orange County’s Families and Children Together, 21st Century Community Learning Centers in Oakland, and the Los Angeles Unified School District’s after-school programs.

For more information about WestEd’s Evaluation Research program, contact Tushnet at 562.799.5118, or e-mail, ntushne@WestEd.org, or visit www.WestEd.org 

uestions to ask when choosing a program evaluator

As with purchasing anything, when choosing a program evaluator, it is always prudent to ask questions.

“Don’t sign a contract if there are any areas of concern or uncertainty,” says Naida Tushnet, Director for WestEd’s Evaluation Research program. “You should feel comfortable and confident that everyone is on the same page, that everyone understands what’s needed and required.”

Here are some suggested queries customers should have for any potential evaluator, courtesy of Tushnet and her staff:

- Have you ever worked on a project funded by this funding agency?
- Describe your previous evaluation work with this client population.
- Describe your previous work with schools and/or school districts, and community and/or business leaders.
- Do you work alone or do you have assistants?
- How do you coordinate the work of your assistants?
- How many other projects are you currently evaluating?
- How do you maintain quality control over the evaluation tasks?
- What is your experience with institutional review boards and/or human subjects committees?
- How were you trained in evaluation research?
- Do you belong to any professional organizations? If yes, to which professional organizations do you belong?
- What journals do you read?
- Do you write articles for publication in journals?
- May I see a copy of a final evaluation report you’ve written for another project?

Resources

Helping students go to college

For many children from disadvantaged backgrounds, attending college seems out of reach. The California Academic Partnership Program (CAPP) aims to change that. A partnership between California higher education institutions and public schools, CAPP helps improve academic programs so that more students are prepared for college. Administered by the California State University (CSU) Chancellor's office, CAPP is a program of the CSU,

University of California, and community college systems. As principal evaluator for CAPP, WestEd works with policy-makers and program developers to determine necessary changes in curriculum and instruction, professional development, and other student services. Specifically, WestEd has evaluated the effectiveness of programs intended to help tar-

geted students and their families prepare for college. With increasing statewide focus on standards and CAPP's efforts to support standards-based instruction, WestEd is now evaluating such reform in the targeted schools. For more information, contact Senior Project Director Jordan Horowitz at 562.799.5122 or e-mail, jhorowi@WestEd.org

Evaluating NSF education efforts

Since 1994, WestEd has been evaluating National Science Foundation (NSF) projects and programs, all of which have the overarching goal of ensuring the quality and diversity of the nation's scientific workforce. WestEd conducts program evaluations for NSF at all levels of education, from K-12 curriculum development to graduate education. As a result, WestEd's findings have informed NSF policy and practice. For ex-

ample, NSF has revised the eligibility criteria for those applying for the Graduate Research Fellowship Program so that a greater variety of students can be accepted. In addition, WestEd has identified innovative approaches to assisting non-mathematics majors succeed in math. For more information, contact Senior Research Associate Sharon Goldsmith at 562.799.5106 or e-mail, sgoldsm@WestEd.org

Looking at science education

Enduring concerns about science literacy among elementary and high school students spurred the National Science Foundation's creation of the Instructional Materials Development (IMD) program, designed to improve the quality of science education through instructional tools and techniques. WestEd's Evaluation Research program is now determining how well that effort is working. Evaluators already have determined the quality of the IMD curriculum materials. Now, they are focused on increasing the dissemination of materials and determining their impact on student learning. WestEd is doing this through multiple focus groups and classroom observations in the western United States. Early indications suggest a greater need to beef up dissemination activities in a coherent, systemwide way. For more information, contact Evaluation Research Program Director Naida Tushnet at 562.799.5118 or e-mail, ntushne@WestEd.org

Now more than ever, mathematics and science are critical to our students' education, affecting both their scholastic path and the career choices they later make. But how can we best prepare future teachers of mathematics and science to be able to instill the necessary knowledge? And how can we ensure that practicing teachers take full advantage of current research on teaching and learning?

One way is to create centers devoted to furthering teachers' development in mathematics and science. The National Science Foundation (NSF) recently funded two centers to address emerging and ongoing issues in mathematics, science, and technology education — kindergarten through college.

Mary Ann Huntley and Senta Raizen of WestEd's National Center for Improving Science Education (NCISE) are evaluating one of those centers — the Mid-Atlantic Center for Mathematics Teaching and Learning (MAC-MTL). It is a consortium formed by three research universities and three school-system partners from Maryland, Delaware, and Pennsylvania.

The idea behind MAC-MTL, says Huntley, NCISE Research Associate, is to produce the next wave of mathematics and science experts. MAC-MTL is designing an innovative doctoral and postdoctoral program to produce specialists prepared for jobs as teacher educators, curriculum developers, policy leaders, and mathematics education researchers. A related center activity is the development of models for mathematics teacher preparation and professional development.

NCISE's role will be to complement and inform internal evaluation activities of MAC-MTL, says Raizen, NCISE's Director. It will help MAC-MTL staff identify project activities whose operation and impact should be documented, design relevant data collection, and write evaluation reports.

"This five-year project is just getting started," says Raizen, "and we're excited about being involved at the ground level."


improving *Science & Math* education

NCISE evaluates two cutting-edge projects

NCISE also has been asked to evaluate an NSF-funded project designed to improve teacher education in science and mathematics. The five-year Pennsylvania Collaborative for Excellence in Teacher Preparation (CETP-PA) is one in a series of projects NSF has funded to reform teacher preparation nationwide.

NCISE evaluators will look at the changes made in the science and mathematics preparation programs in the 14 campuses of the Pennsylvania State System of Higher Education. These universities and colleges prepare roughly one third of the mathematics and science teachers certified in Pennsylvania, and interact with most of the state's 501 school districts.

Among the issues being addressed: the content and instructional methods used in preservice courses — both those taught by science and math faculty and by education faculty — and how these courses might be improved. NCISE also will examine how the courses and other components of the teacher preparation program relate to the real world of classroom teaching.

For more information, contact Raizen or Huntley at 202.467.0652 or e-mail, sraizen@WestEd.org or mhuntle@WestEd.org 

EVALUATION RESEARCH *Resources*



Final Report on the Evaluation of the National Science Foundation's Instructional Materials Development Program

Naida C. Tushnet, Mary Ann Millsap, Noraini Abdullah-Welsh, Nancy Brigham, Elizabeth Cooley, Jeanne Elliot, Karen Johnston, Alina Martinez, Marla Nierenberg, & Sheila Rosenblum

National Science Foundation, 2000

This report offers insight to the National Science Foundation, developers and publishers, and others interested in developing and using high-quality materials in science, mathematics, and technology education. Materials development, dissemination, adoption, implementation, and impact are all discussed within the pages of this report.

193 pages Price: \$8 Order #: EVAL-00-01



Mathematical Sciences and Their Applications Throughout the Curriculum: Final Report

Naida C. Tushnet, Mary Ann Millsap, Jeanne Elliot, Beth Gamse, Marc Moss, & Sheila Rosenblum

National Science Foundation, 2000

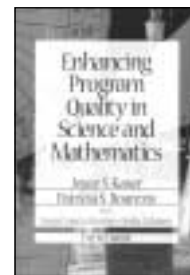
A must-read for mathematics faculty members and deans of undergraduate education, this final report summarizes the findings of seven National Science Foundation-funded projects expected to serve as national models for undergraduate mathematics reform. The report concludes that most of these projects improved undergraduate student understanding of mathematics by integrating the subject matter into other disciplines and incorporating other disciplinary perspectives into mathematics teaching.

29 pages Price: \$4 Order #: EVAL-00-02

Enhancing Program Quality in Science and Mathematics

Joyce Kaser & Patricia Bourexis, with Susan Loucks-Horsley & Senta A. Raizen

Corwin Press, Inc., 1999



The evaluation tools in this book draw upon current research and were used to evaluate and improve dozens of mathematics and science education programs that cost from hundreds to millions of dollars. These profiling techniques can improve programs for teacher development, teacher research, student research, systemic programs, and more.

224 pages Price: \$24.95 Order #: L-9827

Award-Winning Math Team Joins WestEd

The national award-winning Middle-School Math through Applications Project (MMAP) has recently joined WestEd's Science and Mathematics Program, further boosting our agency's efforts to help improve student academic performance in mathematics. Created at the Institute for Research on Learning in conjunction with Stanford University, MMAP taps the immense potential of technology in the classroom as it meets the learning needs of students underserved by traditional approaches to teaching mathematics. Specifically, MMAP offers the following services:

Pathways Curriculum Support Center helps teachers use Pathways to Algebra and Geometry, an MMAP-developed middle school mathematics curriculum that has won the highly coveted "promising" designation from two Expert Panels appointed by the U.S. Department of Education. In winning the technology in education designation, Pathways is one of only seven education programs in the country to be singled out as "promising" or "exemplary." For more information, visit <http://mmap.wested.org/>

Primes Workshops are intended to build parents' confidence about their own math skills and gain insight into the innovative teaching methods that schools are beginning to adopt. For more information, visit <http://primes.wested.org/>

WebMath offers online mathematics instruction for middle school teachers to complement other professional development programs. This five-week credit course helps teachers further develop their understanding of the concepts they teach. *Brush Up on Proportions* is WebMath's first course offering. For more information, visit <http://mmap.wested.org/webmath/>

For more information about MMAP, contact Project Director Shelley Goldman at 510.302.4280 or e-mail, sgoldma@WestEd.org

WHAT'S NEW, **HOT**, and USEFUL



Accountability Dialogues: School Communities Creating Demand from Within

Kate Jamentz, 2001

This book explains some of the common misconceptions about school accountability and provides a strong rationale for including Accountability Dialogues in any accountability system.

Developed from the experience of WestEd's Western Assessment Collaborative (WAC) in working with California schools and districts, the book also describes how Accountability Dialogues propel efforts to implement standards-based reforms and strengthen the relationships among parents, educators, and the community at large. Examples from schools that use Accountability Dialogues provide a real sense of what can happen when responsibility for school improvement is shared among all of the stakeholders in a school community.

A companion videotape visits three schools where Accountability Dialogues are taking place. Used with parent and faculty groups, this video can help a school explore the potential of Accountability Dialogues to strengthen their own community and its work.

71 pages Price: \$13.95 Order #: WAC-01-01

10-minute video Price: \$14.95 Order #: WAC-01-02

Complete set (book and video)
Price: \$24.95 Order #: WAC-01-03

*For ordering information,
please refer to the product
order insert.*

Pathways to Algebra and Geometry

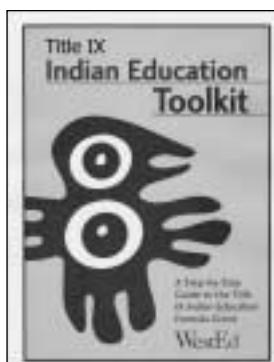
Co-developed with the Institute for Research on Learning
in conjunction with Stanford University

Voyager Expanded Learning, 2000

A middle school mathematics curriculum developed by WestEd staff, Pathways to Algebra and Geometry has won the highly coveted "promising" designation from two Expert Panels appointed by the U.S. Department of Education. In winning the technology in education designation, Pathways is one of only seven education programs in the country to be singled out as "promising" or "exemplary."

This comprehensive two-year curriculum prepares middle school students for algebra and geometry. Students discover how math skills are applicable to the real world and work together to gain a better understanding of mathematical concepts and skills.

To order, visit <http://mmap.wested.org/> or contact Project Director Shelley Goldman at 510.302.4280 or e-mail, sgoldma@WestEd.org; or contact Jennifer Knudsen, WestEd Senior Research Associate, at 510.302.4273 or e-mail, jknudse@WestEd.org



Title IX Indian Education Toolkit

Floyd Beller, 2001

This toolkit is designed to help both new applicants and continuing grantees complete the federally funded Title IX Indian Education Formula Grant application package. These federal formula grants help local education agencies and Indian and Alaska Native tribes provide sound education programs and opportunities for American Indian and Alaska Native students. The toolkit includes tips that help users follow along with the grant application.

31 pages Price: \$20 Order #: LCD-00-01



WestEd's Resource Catalog

For a free copy, call 415.565.3000 or toll-free, (1-877) 4WestEd; or write:
WestEd / 730 Harrison Street / San Francisco, CA / 94107-1242.
The catalog is also available at
www.WestEd.org/pub/docs/81/

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R&D A L E R T

R&D Alert covers issues affecting schools in WestEd's four-state region — Arizona, California, Nevada, and Utah — and nationwide.

Your letters are welcomed. Please send comments to Colleen Montoya, WestEd, 4665 Lampson Avenue, Los Alamitos, CA 90720-5139; fax, 562.799.5138; or e-mail, cmontoy@WestEd.org

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WestEd is a nonprofit research, development, and service agency that works with education and other communities to promote excellence, achieve equity, and improve learning for children, youth, and adults. Drawing on the best knowledge from research and practice, our agency collaborates with practitioners, policymakers, and others, addressing critical education and other human service issues. WestEd, with initiatives throughout the United States and abroad, is one of the nation's designated Regional Educational Laboratories — originally created by Congress in 1966 — serving the states of Arizona, California, Nevada, and Utah. With headquarters in San Francisco, WestEd has offices across the United States.

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