RESEARCH
Connections
in Special Education

Using Data

Innovative Ways to Improve Results for Students with Disabilities

Spurred, in part, by requirements in the Individuals with Disabilities Education Act (IDEA) and the No Child Left Behind Act (NCLB), the use of scientifically derived information—or data—has become a significant part of educational programming for children with disabilities. Looking at data helps us to understand what is working and what is not. It provides an objective window by which we can examine our goals and approaches, and take action where it is needed.

The use of data has always been at the center of individualized instruction. Indeed, special educators have long used data to assess student strengths and needs, appropriately plan their educational programs, and monitor progress to ensure success. However, scientifically derived information increasingly is being used by practitioners not only to make educational and instructional decisions and chart progress, but also to plan behavioral interventions at both the individual student and schoolwide levels. School leaders have come to rely on data as a cornerstone of school improvement efforts, finding that the use of reliable information greatly enhances results for all children.

While most agree that data-based decision making is valuable, there is often a reluctance to use it. The paperwork associated with data collection can be time-consuming and burdensome. Frequently, data are not offered to address daily issues. Worse, data collected about schools are sometimes used to justify punishment of them. But, as University of Oregon researchers **George Sugai**, **Robert Horner**, and their colleagues point out, "Data need not be a four-letter word." Data can be used efficiently and effectively to make decisions that benefit everyone. And, researchers are helping us identify strategies for doing so.

Over the years OSEP has made an investment in promoting research that uses scientifically derived information to improve results for students with disabilities. However, rather than looking solely at how data can be used, the trend has been for researchers to develop interventions and approaches in which the use of data is an integral component. By positioning data use at the heart of change and improvement efforts, researchers are finding more practical and effective uses of data. This *Research Connections* takes a look at how researchers with OSEP support are discovering innovative uses of scientifically derived information in instructional and administrative decision making, along with strategies for enhancing its usability.

WHAT WE'VE LEARNED

Data-Based Decision Making—A Core Feature of Implementing Interventions

With OSEP support, researchers are investigating how data-based decision making enhances results when developing schoolwide positive behavioral support systems, using high stakes assessment scores for school improvement, and integrating curriculum-based measurement into the instructional program.

DATA INFORM SCHOOLWIDE POSITIVE BEHAVIOR SUPPORT PROGRAMS

"Data-based decision making is critical to addressing schoolwide discipline and safety issues effectively," says **George Sugai**. "To sustain the use of a systematic approach to positive behavioral support, procedures must be in place to enable informed and accurate decisions about whether adequate gains are being achieved and what actions should occur next."

In effective systems of behavior support, student behavior is monitored continuously, and data are used by staff as a basis for decisions. For example, Sugai and his colleagues have developed a system that uses scientifically derived information about office referrals along with other data to evaluate the effectiveness of a comprehensive schoolwide discipline and violence prevention program. Sugai's work is one of the first attempts to link a systematic analysis of office discipline referral data to inform discipline program reform efforts.

"Research suggests that office referrals provide a useful index to assess school discipline needs and monitor intervention effects," Sugai points out. "We found that school-based teams using
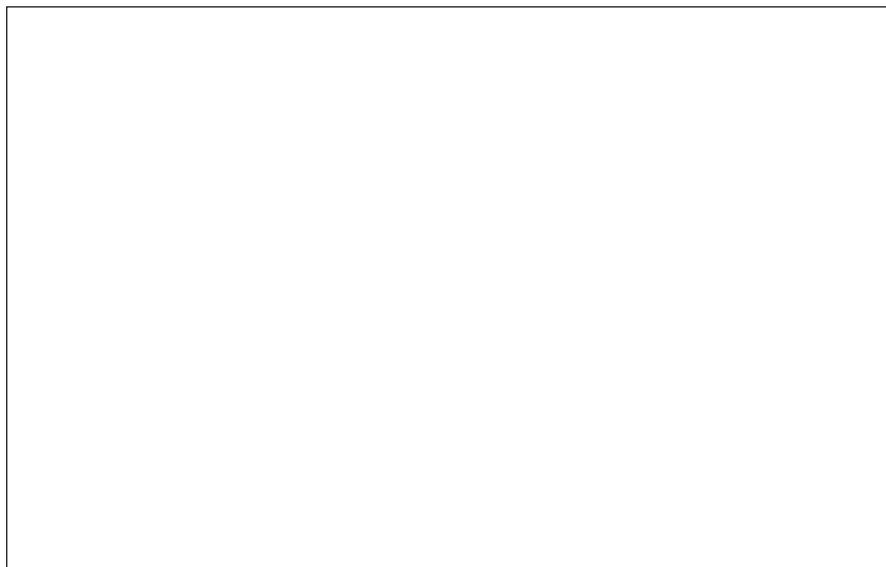
When used effectively and efficiently, data can help educators better identify and define problems that need to be addressed, select appropriate interventions, and evaluate their success.

office referral data have successfully established and maintained schoolwide discipline systems that resulted in a 50 to 60 percent reduction in rates of office discipline referrals." Sugai goes on to say that schools should use data to identify their specific needs and to determine if selected programs and interventions match their needs. When creating a data-based decision making system, Sugai suggests that educators consider the guidelines found in the sidebar, *Guidelines for Creating a Data-Based Decision Making System.*

Flossmoor Elementary School District 161, IL, has implemented positive behavior support programs districtwide and uses systematic data to target their efforts. "Teams in our district regularly review student data," **Judith Green**, assistant superintendent, tells us. "By using data, we know what to target, and how and when to intervene." Since implementing the approach, the district

has seen a significant improvement in behavior.

Teachers complete referral forms when students violate discipline guidelines. A secretary enters the information into a database. Teams in each school meet monthly to review the data and make decisions. To assist their efforts, each school has access to the School-Wide

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GUIDELINES FOR CREATING A DATA-BASED DECISION MAKING SYSTEM

- Data should be readily available.

- Procedures for collecting data must be easy to use and not require excessive staff time and resources. According to Sugai, data collection systems should not consume more than one percent of someone's time each day.

- Purposes for collecting data must be relevant to ongoing activities.

- Only a small number of questions should be addressed.

Information System (SWIS) [http://SWIS.org], a web-based information system.

"Having a database with information is helpful in focusing attention on where and when the problem is occurring," Green points out. "For example, after reviewing the data from the elementary schools, we found that many infractions were happening during recess. This enabled us to target that setting for intervention."

Statewide Positive Behavioral Support Initiative Features Data-based Decision Making

Hawaii has launched a statewide initiative to prepare *all* schools to use Sugai's positive behavioral support model. According to **Jean Nakasato**, educational specialist in the Hawaii Department of Education, a major element of the positive behavioral support system is data-based decision making.

"Our goal is for everyone to be *data smart*, to be able to analyze and interpret behavioral data," Nakasato tells us. "We need to know if we are meeting student needs and data help us do this."

To this end, the use of data is built into the training process. School-based teams bring data (e.g., about office referrals) to the state-sponsored training sessions where they learn how to use it. In teams, participants use the data to self-assess and problem solve. The process results in action plans that participants are expected to implement in their schools.

USING LARGE SCALE ASSESSMENT DATA FOR SCHOOL IMPROVEMENT

"The benefits of having students with disabilities participate in state and districtwide assessments will never be fully

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RESOURCE

TEACHING STUDENTS WITH DISABILITIES TO USE DATA FOR DECISION MAKING

"There's a saying—*In God we trust, from all else we expect data*," asserts **Tanis Bryan**, researcher at the Southwest Institute for Families and Children.

To this end, Bryan and her colleagues with OSEP support developed and successfully field-tested **Amazing Discoveries**. In the **Amazing Discoveries** curriculum, students with and without disabilities in Grades 5 through 12 learn how to conduct scientific research about a topic of high interest to them—themselves! Data collection, analysis, and presentation are integral elements of the curriculum.

"Using the **Amazing Discoveries** approach, we have engaged youth in using data to achieve personal goals that they set for themselves," Bryan explains. "We found that once youth catch on, they quickly find other ways of using data for making decisions about even more important goals."

For more information on the **Amazing Discoveries** curriculum, visit the publisher's web site at **www.exinn.net** or contact Bryan at **TanisHBr@aol.com**.

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achieved if educators do not actually look at, explore, and use the data for making decisions about educational programs," says **Martha Thurlow**, director of the OSEP-funded National Center on Educational Outcomes (NCEO). "Those schools, districts, and states making the most progress are going to be the ones that thoroughly and carefully use their assessment results."

Since 1998, Thurlow and her colleagues have been studying how states and localities are implementing the IDEA requirement that students with disabilities participate in state- and districtwide assessments, with accommodations as

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RESOURCE

TECHNOLOGY STREAMLINES DATA COLLECTION AND ANALYSIS

The latest **Technology in Action** issue from the Technology and Media Division (TAM) of the Council for Exceptional Children focuses on how technology can be used to manage data for school-wide and individual student behaviors. *Solving Behavior Problems: Technology Can Help!* outlines suggestions for using data to determine communicative function, identifying a pattern of behavior, and analyzing and displaying group data. The issue is available on the TAM web site at **www.tamcec.org**.

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necessary. Of particular interest is the IDEA provision requiring the public reporting of scores of students with disabilities with the same frequency as for other students.

"Reporting the scores of students with disabilities is one element of a truly inclusive accountability system" Thurlow says. "Once scores are reported, they should be used to make programmatic and instructional decisions."

To understand and use state and/or district assessment data, Thurlow suggests that educators first reflect on why it is important to look at data and how knowing such information may prove relevant for evaluating whether decision making is producing the expected results. From here, educators can decide where they might want to start their efforts and how far into the data they want to dig. According to Thurlow, this step involves knowing the data elements that are used to generate district or state reports.

"A thorough understanding of the information provided also enables us get more out of the data that are given," Thurlow adds. "It allows us to explore trends in performance—e.g., changes in

Data-Based Decision Making (continued)

test scores across grades within a given year, changes in the scores of students within specific grades across years, and performance of the same students as they progress across grades. It also is important to keep track of mobility in and out of special education, and to look at data in varied ways," Thurlow says. "This is especially true when trying to reach conclusions about improvements in the performance of students with disabilities."

A District Looks at Statewide Data for School Improvement

Judy Elliott, assistant superintendent in the Long Beach Unified School District, California, has worked with Thurlow for a number of years. Her district looks closely at statewide data when making school improvement policy decisions.

"Our district's standards are aligned with the state assessment so we are very interested in our students' results," Elliott reports. Every principal in the district receives a schoolwide profile of trend lines, participation rates, and test scores. The profile shows parallel data for students with disabilities. "Data help us determine where students are making gains and where they need additional support."

According to Elliott, at first there was some concern around getting data for students who were not typically counted. IEPs were revamped to include information about the particular assessment accommodations that were being used during instruction and classroom testing. "We used this information to help us plan the best use of accommodations on the statewide assessment," Elliott explains.

To support principals in using the data, the district paid attention to information dissemination and relationship building. "We made a conscious effort to help everyone understand that the reporting requirements in IDEA and NCLB were intended to help all children achieve better results," Elliott adds.

CURRICULUM-BASED MEASUREMENT

Fact: When teachers use curriculum-based measurement (CBM)—a form of systematic progress monitoring—to track their students' progress in reading, mathematics, or spelling, they are better able to identify students in need of additional or different forms of instruction, they design stronger instructional programs, and their students make greater gains.

Fact: More than 200 empirical studies published in peer-review journals provide evidence of CBM's reliability and validity for assessing the development of competence in reading, spelling, and mathematics and document CBM's capacity to help teachers improve student outcomes.

"CBM is a powerful tool that can help teachers monitor their students' academic progress and design more effective instructional programs," says **Lynn Fuchs**, researcher at Vanderbilt University. "Using CBM, teachers can

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RESOURCE

DIGITAL TEXTS WITH EMBEDDED AND INDIVIDUALIZED READING STRATEGY AND DECODING SUPPORTS

Imagine a software program that presents instructional media with embedded flexible supports for learning comprehension strategies. A software program that records student data during instruction and acts on it immediately, as well as makes the data available to the teacher. Sound too good to be true? OSEP-supported researchers **Bart Pisha**, **Bridget Dalton**, and their colleagues at the Center for Applied Special Technology (CAST) have made the technology a reality, and in the coming months, it may be commercially available.

"We have been building reciprocal teaching and an array of supports into electronic copies of selected novels from a large urban school district's reading list," Pisha tells us. "The software gathers and analyzes ongoing data from the student user and scaffolds instruction accordingly." Because the soft-

ware is on a network, teachers can check at any time to see how individual students are progressing. Using the data, they determine if students need additional intervention and support.

"Enhanced electronic texts can extend the capacity of teachers to support students with learning disabilities and develop the capacity of students so that they have access to, and are making progress in, the general curriculum," Pisha explains.

Here's a glimpse at how it works. The student reads the novel (or has the novel read aloud by the computer) and after every episode is prompted to execute a reciprocal strategy, such as summarize, predict, visualize, ask a question, etc. The program provides help prompts as needed according to the student's level, sometimes in the form of an animated helper. Before moving

on, the student completes a work log, which is stored and analyzed. An example of a typical student's work log follows:

> 8:02:30 AM 12/5/02
>
> 23. Gift Giver, Level 1: Chapter Seven, Passage 1
>
> Pages 42-44
>
> Make a **prediction** about what is going to happen.
>
> They are going to find Sherman.

Currently, Pisha and his colleagues also are working with Gallaudet University to include American sign language as an option in the program.

For more information, visit the CAST web site at **www.cast.org**. Or contact Pisha at **bpisha@cast.org**.

infuse ready-made accountability into their instructional design and can streamline the individualized education program (IEP) system to make the IEP into a living document that guides and enhances instructional decision making on a day-to-day basis."

Each CBM test assesses all the different skills covered in the annual curriculum. CBM samples the many curricular skills in such a way that each weekly test is an alternate form. Scores earned at different times during the school year can be compared to determine whether a student's competence is increasing.

"The overall CBM score can be used in three ways," Fuchs explains. "Teachers use CBM scores in universal screening to identify students in need of additional or different forms of instruction, to monitor students' development of academic competence, and to improve instructional programs." Fuchs adds that CBM skills profiles also are used to identify the skills in the annual curriculum in which students require additional instruction and to identify the students who are experiencing problems with maintaining skills after initial mastery was demonstrated.

Helping teachers use CBM also has been a focus of research for Lynn and fellow researcher **Douglas Fuchs**. Their work has addressed how CBM users can keep up with the mechanical tasks of measurement. "Technology can dramatically reduce the need for teachers to conduct the mechanical tasks associated with measurement, such as test administration, test scoring, graphing, and data analysis," Fuchs tells us. "Data collection software used in combination with data management software can entirely eliminate most teachers' time in such tasks." [For information on the use of technology, see the sidebar, *Computer Administered and Scored CBM Resources*.]

RESOURCE

COMPUTER ADMINISTERED AND SCORED CBM RESOURCES

Web-based software reduces the paper and pencil barriers to using CBM. Technology provides us with a way to efficiently analyze results, manipulate data to answer questions, and share data for decision making. Educators have several options when looking for a technology-based information management system to organize and report CBM data.

- Edformation [**www.aimsweb.com**] for reading CBM.

- DIBELS [**www.dibels.uoregon.edu**] for reading CBM.

- McGraw-Hill [**www.mhdigitallearning.com**] for math CBM.

Lynn Fuchs and her colleagues also have developed software. For information, contact Fuchs at the address on page 8.

Although CBM has been commonplace in special education classrooms for years, it was not until the early 1990s that the Fuchses' and their colleagues began integrating CBM into general education classrooms. "General education teachers liked CBM," Fuchs reports, "however, we needed to refocus the attention on classwide reports and skill summaries rather than individual student graphs." In addition, Fuchs found that many teachers benefited more when they received assistance in using the CBM data for decision making.

"Even though analyzing the data is helpful, in order to intervene, most teachers prefer to be given new routine ways to differentiate instruction." To help teachers break beyond their standard instructional routines and identify alternative teaching procedures, Fuchs and her colleagues have developed full-scale instructional approaches, as well as expert systems that provide instructional modifications.

District Uses CBM Data To Improve Student Achievement

We often think about CBM as a classroom intervention. But, its use school- and districtwide is growing. The Pittsfield (MA) Public Schools is a good example.

In 1997, **Michael Meyers**, the special education director, was introduced to **Mark Shinn**, University of Oregon researcher who has received OSEP support for his work in CBM over the years. Shinn's model utilizes school psychologists in key roles in collecting and analyzing the CBM data. Meyers used Shinn's work as a jumping off point to implement CBM throughout the district.

"What started as a special education initiative to identify students needing help with reading has now expanded to include *every* child K-3 and a plan to include all students through Grade 8," Meyers reports. CBM data are used to verify what is working and not working, and to help guide educators in selecting an appropriate curriculum. "Students are assessed every fall, winter, and spring," Meyers says. "With this monitoring, we are able to identify which students are not meeting benchmarks. With CBM we make sure every child is making progress—and if not, we intervene."

Initially, school psychologists were trained in CBM, but now, all special education teachers also are trained. One of the challenges Meyers and his colleagues faced was how to manage the data. "We found that once we went with a web-based data management program, it freed the psychologists to spend more time with teachers—helping them interpret the data and identify interventions."

VIEWS FROM THE FIELD

Using Data from Participatory Action Research To Support Change and Innovation

Participatory action research is an approach in which researchers and stakeholders (i.e., those individuals who might potentially benefit from the research findings) collaboratively engage in the various stages of the research process. The goal is greater participation and influence of stakeholders in the research process, a major purpose being to support the implementation of research findings in practice. OSEP has supported a number of research studies that used participatory action research methods to support change and innovation. Following are several examples.

GENERATING DATA-BASED STRATEGIES

Philippa Campbell, researcher at Thomas Jefferson University, PA, believes that it is important for related service providers to validate what they do in their daily practice to ensure that services increase the quality of life for children and their families. Her research is showing that participatory action research methodology can help therapists explore questions about the efficacy of pediatric therapy practices within the context of a child's and family's natural environments.

"Occupational therapists and physical therapists volunteer to receive training related to optimal practices in natural environments, data collection, and other aspects of research investigations," Campbell explains. "The nature and type of data to be collected depends upon decisions made by each team; however, much of the data and documentation are already part of the information typically collected for a child's individualized family services plan (IFSP)."

Therapists implement small scale research studies with a child and/or family who are part of their caseload. To support the research process, therapists have access to a research mentor who provides guidance on formulating research questions, conducting the study, interpreting the results, and preparing a presentation on results. "The key is to arrange ongoing contact between the mentors and therapists," Campbell reports. "Mentors need to be present at all stages and feel comfortable sharing their expertise and skills as part of the research process."

PROMOTING INCLUSIVE SCHOOLING PRACTICES

"The process of practitioner directed inquiry capitalizes on the expertise and knowledge of practitioners as those most knowledgeable about local contexts and conditions, and as the primary source of solutions that are most appropriate for those situations," explains **Christine Salisbury**, researcher at the University of Illinois-Chicago. "We started with this basic question: Can we use practitioner directed inquiry to promote inclusion? Our research showed that the approach can improve professional practice and promote the inclusion of students with disabilities, including those with significant challenges, in general classrooms."

Salisbury and her colleagues conducted several studies with elementary school teachers and administrators in several school districts. Teachers and administrators were introduced to participa-

tory action research methods and then guided through the steps of sharing issues, forming issue-focused workgroups that developed action-based and technical support plans. Action plans described the question, the type of information to be collected, and the proposed methods for addressing the issue. Monthly workgroup meetings were held to discuss findings, analyze data, explore emerging issues, and determine next steps.

In a second study, Salisbury studied how building principals might use participatory action research to collect data to inform school improvement initiatives. These administrators used the process to become more reflective administrators and to cultivate a culture of inquiry with their teachers about special education implementation issues.

Throughout the process, Salisbury documented lessons learned about the adoption and use of participatory action research. Examples follow:

- Administrative support—above and beyond endorsement—is essential. Principals should make explicit the value of collaboration.

- Time and opportunity for reflection facilitates the process.

- Research questions and their results must have practical appeal.

CONDUCTING FAMILY RESEARCH

Ursula Markey of the Grassroots Consortium on Disabilities (an OSEP-funded supported center) and **Ann Turnbull** of the Beach Center on Family and Disabilities at the

University of Kansas have established a partnership that provides a participatory action research model for collaboration between researchers and families. "Our shared belief in participatory action research and our commitment to be fully participatory as a partnership is the indispensable means through which we have been working," Turnbull says. Markey adds, "The promise is that participatory action research teams composed of researchers and culturally and linguistically diverse families will discover a new relationship that broadens the scope of their commitment to research as a means of social change and contributes to a deeper understanding of the critical role research plays in finding practical solutions for families."

Turnbull and Markey initiated their work together as part of a project in which researchers supported families of children with behavioral difficulties in learning how to gather data about their child (e.g., strengths, needs, likes, dislikes), develop a functional behavioral assessment for their child, and participate as full partners in the development of a positive behavioral support plan. "Expanding the partnership to include participatory action research was a natural extension," Turnbull tells us. "We experienced several advantages in our implementation of participatory action research." The approach resulted in increased:

- Relevance of research to the concerns of family members.
- Rigor of research.
- Utilization of research by families.

Markey highlights several advantages for family members. "Parents gained a sense that their opinions and experiences were valued. Their concerns were heard and their comments were incorporated into research that will benefit society. Parents also expressed appreciation because the process necessitated their having to think about things they never considered before, such as the determinants of quality of life for them personally and for their families."

STUDYING SOCIAL INCLUSION AT WORKSITES

"Participatory action research can reduce the gap between research and practice, resulting in enhanced outcomes for students with disabilities," says **Hyun-Sook Park**, researcher at San Jose State University. "Collaborative decision making with stakeholders makes the selection of research questions more meaningful to them; it helps them address issues related to the implementation of innovations, which often results in actions that are more doable and sustainable overtime."

Park and her colleagues applied participatory action research to the intervention study of social inclusion at worksites. Stakeholders were involved at various stages in the research process. "In this study, intervention was treated as a process for generating strategies," Park explains. "Researchers and stakeholders reviewed and interpreted the data about students' work and social experiences at their worksites." These discussions led researchers and stakeholders to brainstorm strategies and select those that were eventually implemented. Researchers found that the participatory action research process empowered teachers and job coaches to take ownership of their action changes, and therefore resulted in the increased social inclusion of individuals with disabilities in work environments.

According to Park, the key to making the process work was establishing trust and respect. "Practitioners saw that researchers were really trying to listen and understand their perspectives." ✇

RESOURCE

Focus Groups Yield Useful Data

Rather than waiting until an intervention has been implemented, it helps to find out early on how participants are feeling about it. One way to gauge reactions is through a focus group. Typically, we think of focus groups as being for adults, but educational consultant **Marion Leibowitz** has found that when designed appropriately, focus groups can yield extremely useful data from students, including students with disabilities. "Based on the data, we can make immediate changes and head off, what could be for a youngster, a terrible semester or year," Leibowitz says.

She offers a recent example. A high school decided to change to an alternate-day block schedule and rolled it out at the beginning of the first marking period. Leibowitz convened focus groups with students and found that students with disabilities who were included in general education classes voiced difficulty with the new approach. "As we delved deeper into their views, it became apparent that for many of them, the issue was not in adjusting to change, but was related to a much more practical issue of scheduling their tutors," Leibowitz described.

What makes a focus group a success with students with disabilities? Leibowitz offers the following suggestions:

- Craft questions carefully. Start with open-ended questions (e.g., If you had a friend moving into your high school, what would you tell him or her about how your classes are scheduled?).

- Limit the size of the group to six to eight students.

- Make sure students feel comfortable participating (e.g., protect anonymity; do not pick students from the same class for a group if the issue is schoolwide; select a facilitator who is trusted by the students and who is not perceived by the students as having an agenda; change group composition for each discussion).

- Limit the time to 30 to 45 minutes.

To find out more about using focus groups for school improvement purposes, contact Leibowitz at **mlassociate@aol.com**.

FOR MORE INFORMATION

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Bibliography

Fuchs, L., & Deno, S. (1991). Paradigmatic distinctions between instructionally relevant measurement models. *Exceptional Children, 57*, 488-501.

Horner, R., Sugai, G., & Todd, A. (2001). Data need not be a four-letter word: Using data to improve schoolwide discipline. *Beyond Behavior, 11*(1), 20-26.

Lewis-Palmer, T., Sugai, G., & Larson, S. (1999). Using data to guide decisions about program implementation and effectiveness. *Effective School Practices, 17*(4), 47-53.

Park, Hyun-Sook, Gonsier-Gerdin, J., Hoffman, S., Whaley, S., & Yount, M. (1998). Applying the participatory action research model to the study of social inclusion at worksites. *JASH, 23*(3), 189-202.

Salisbury, C., Wilson, L., Swartz, T., Palombaro, M., & Wassel, M. (1997). Using action research to solve instructional challenges in inclusive elementary school settings. *Education and Treatment of Children, 20*(1), 21-38.

Shinn, M. (1998). *Advanced applications of curriculum-based measurement*. New York: Guilford.

Thurlow, M., Elliott, J., & Ysseldyke, J. (2002). *Testing students with disabilities: Practical strategies for complying with district and state requirements* (2nd ed.). Thousand Oaks, CA: Corwin Press, Inc.

Turnbull, A., Friesen, B., & Ramirez, C. (1998). Participatory action research as a model for conducting family research. *JASH, 23*(3), 178-188.