RTI Manual

Introduction

August 2006

Overview

The Individuals with Disabilities Education Improvement Act of 2004 (P.L. 108-446) (IDEA 2004) was signed into law on December 3, 2004, by President George W. Bush. IDEA 2004 includes provisions that could lead to significant changes in the way in which students with specific learning disabilities (SLD) are identified. Of particular relevance to the process of SLD determination are the following provisions of the statute:

- Local educational agencies (LEA) shall not be required to take into consideration whether a child has a severe discrepancy between achievement and intellectual ability (IDEA 2004).
- LEAs may consider a student's response to scientific-based instruction.
- Responsiveness to intervention (RTI) is not specifically identified in the law.
- LEAs are given flexibility in determining SLD implementation options.
- Using special education funding to provide early intervening services for all students is permitted.

This movement toward change stems from criticisms of current SLD determination components, procedures, and criteria. These criticisms include irrelevance of aptitude-achievement discrepancy and cognitive measures to instructional planning or outcomes, lack of equitable treatment across educational settings, and delays in disability determination. Another criticism of practices has been that students were judged to have an SLD without an assessment of the availability and use of general education interventions that have proven their effectiveness for students presenting similar behaviors of concern (e.g., limited reading acquisition). One could not be confident that the achievement and behavior problems that a child presented were inherent to the child or attributable to shortcomings in the instructional settings.

Earlier statutes regarding the determination of SLD included a provision for evaluating the extent to which students had received appropriate learning experiences. However, no systematic process was outlined in the earlier regulations for ensuring that the learning experiences provided before referral for evaluation were those that have been found to be typically effective for the child's age and ability levels. The responsiveness to scientific-based intervention concept in IDEA 2004 is an elaboration or greater specification of this basic concept. With this emphasis, school staffs may consider how a student's performance in general education and, more specifically, the student's performance in response to specific scientific, research-based instruction informs SLD determination.

NRCLD is a joint project of researchers at Vanderbilt University and the University of Kansas. This document was produced under U.S. Department of Education Grant No. H324U010004. Renee Bradley served as the project officer. The views expressed herein do not necessarily represent the positions or policies of the Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service or enterprise mentioned in this publication is intended or should be inferred.

What is RTI?

The definition of responsiveness to intervention (RTI), on which the National Research Center on Learning Disabilities' (NRCLD) writing is based, follows:

> RTI is an assessment and intervention process for systematically monitoring student progress and making decisions about the need for instructional modifications or increasingly intensified services using progress monitoring data. The following is the fundamental question of RTI procedures: Under what conditions will a student successfully demonstrate a response to the curriculum? Thus, interventions are selected and implemented under rigorous conditions to determine what will work for the student.

Researchers have endorsed the incorporation of a scientific, research-based intervention process as an identification criterion because it combines the important features of assessment and instruction and addresses many of the limitations currently associated with aptitude-achievement discrepancy models of SLD identification. The RTI concept is conceptually connected to previous federal statutes regarding the determination of SLD. Those previous statutes included a provision for evaluating that students had received appropriate learning experiences. The RTI concept in IDEA 2004 is an elaboration or greater specification on this basic concept. In addition to the provision of appropriate learning experiences for all students, essential features of RTI also include the early identification of students as being at risk for academic failure.

Optimal learning outcomes occur when students' skills and abilities closely match the curriculum and instruction within the classroom. When a mismatch occurs, student outcomes and learning suffer. Quality classroom instruction usually provides a good match for most students. But for other students, success is not easy. The hypothesis is that, with RTI, these struggling students can be identified early and provided appropriate instruction, thus increasing the likelihood that they can be successful and maintain their class placement.

RTI can be used as a process that is one part of the evaluation for the determination of SLD. A strong RTI process includes the following critical features:

- High-quality, scientifically based classroom instruction
- Student assessment with classroom focus
- School-wide screening of academics and behavior
- Continuous progress monitoring of students
- Implementation of appropriate research-based interventions
- Progress monitoring during interventions (effectiveness)
- Teaching behavior fidelity measures

RTI Within the Process of SLD Determination

Although RTI addresses some significant shortcomings in current approaches to SLD identification and other concerns about early identification of students at risk for reading problems, RTI should be considered to be one important element within the larger context of the SLD determination process. RTI as *one* component of SLD determination is insufficient as a sole criterion for accurately determining SLD. RTI provides the following information about a student:

1. Indication of the student's skill level relative to peers or a criterion benchmark
2. Success or lack of success of particular interventions
3. Sense of the intensity of instructional supports that will be necessary for the student to achieve

Incorporating this information into SLD determination procedures has the potential to make important contributions to identifying students with SLD in schools. In addition to an RTI process that helps ensure appropriate learning experiences and early intervention, identification of SLD should include a student-centered, comprehensive evaluation that ensures students who have a learning disability are accurately identified.

Although IDEA 2004 provides flexibility to LEAs in determining SLD identification procedures, the following recommendations by the National Joint Committee on Learning Disabilities (NJCLD) should help guide the development of these procedures (NJCLD, 2005):

- Decisions regarding eligibility for special education services must draw from information collected from a comprehensive individual evaluation using multiple methods, including clinical judgment and other sources of relevant information.

- Students must be evaluated on an individual basis and assessed for intra-individual differences in the seven domains that comprise the definition of SLD in the law: listening, thinking, speaking, reading, writing, spelling, and mathematical calculation.
- Eligibility decisions must be made through an interdisciplinary team, must be student centered and informed by appropriate data, and must be based on student needs and strengths.
- As schools begin to execute a process of decision making that is more clinical than statistical in nature, ensuring through regulations that this team of qualified professionals represents all competencies necessary for accurate review of comprehensive assessment data will be critical.

Processes for SLD identification have changed and will continue to do so. Within that context, remembering that RTI is but one resource for use in the SLD determination process is important. More broadly speaking, RTI procedures have the distinction that when implemented with fidelity, they can identify and intervene for students early in the educational process, thereby reducing academic failure among students.

Purpose of this RTI Manual

Responsiveness to Intervention (RTI): How to Do It (*RTI Manual*) is offered as a tool for implementing RTI. The *RTI Manual* can help you understand, design, and evaluate the RTI features that you will implement. This *RTI Manual* is based on current research regarding the features of RTI. Although we believe it provides comprehensive coverage of the critical features of RTI, we also have included numerous resources for pursuing further information.

As you use this *RTI Manual*, please keep the following points in mind:

- At this time, information from scientific, research-based interventions is primarily focused on early reading. This is understandable when one considers that, according to the President's Commission on Excellence in Special Education (2002), the reason that most students identified as having learning disabilities were in special education was that they had reading difficulties. In addition, research has indicated that the number of students identified for special education and as having learning disabilities decreased after the implementation of early and rigorous reading programs (Fletcher, Coulter, Reschly & Vaughn, 2004).
- As the research base expands, this *RTI Manual* and the tools contained within can be modified for other domains, such as social behavior, math, and writing.
- The RTI components featured in this *RTI Manual* extend beyond the regulations and are included to help you facilitate implementation rather than only guide you in regulation adherence.
- The items that are listed in the evaluation tools contained within each section are based on a review of school-based and research-based RTI implementation procedures (e.g., Bradley, Danielson, & Hallahan, 2002; NRCLD Symposium on RTI, 2003; Vaughn & Fuchs, 2003).

How this RTI Manual is Organized

The *RTI Manual* includes the following sections:

1. School-wide screening
2. Progress monitoring
3. Tiered service delivery
4. Fidelity of implementation
5. School examples, student case studies, and research examples

Within each of the first four sections of the *RTI Manual*, we have followed a consistent format for presenting information and tools to implement RTI.

We first present overviews, definitions, and features of the relevant RTI component. This helps orient the reader to each RTI component and develops an understanding of its critical features and role within the larger system of RTI. Included in each component section is an evaluation tool outlining the features that currently define best practice. These tools are meant to provide both formative and summative evaluations of your RTI process.

Next, we provide a planning tool that your school can use to determine specifics about implementing the essential tasks for each RTI component. This planning tool follows the same general framework:

- Personnel roles and responsibilities within the RTI component
- Implementation
  - essential tasks for the RTI component
  - standards for judging whether you have met the criteria for implementation
- Resources
  - internal resources you will need to consider for implementation
  - external resources available for the RTI component

Finally, the last section of this manual, *School Examples, Student Case Studies, and Research Examples,* presents descriptions of how model sites identified through an NRCLD research study have implemented specific components of RTI, the resources required, and the challenges they faced. The section also describes longitudinal data from individual students who have received services under an RTI delivery model. It concludes with descriptions of research studies in which RTI models have been implemented.

Conclusion

Although RTI represents a promising way of addressing many issues associated with SLD identification, unanswered implementation questions remain. We must ask how many issues relevant to SLD determination are due to the specific assessment components as well as the limited fidelity with which those components have been implemented. Further, we must consider how well schools could implement an assessment process that incorporates significant changes in staff roles and responsibilities while lengthening the duration of disability determination assessment.

Another significant consideration is that current research literature provides scant scientific evidence for how RTI applies in curricular areas other than early reading and beyond primary or elementary school-age children. In conjunction with the standards that have been developed (National Committee on Science Education Standards and Assessment [NCSESA], 1996, and National Council of Teachers of Mathematics [NCTM], 2000), science-based research needs to be conducted using the RTI construct in the areas of later reading (e.g., reading comprehension) as well as science and mathematics. Using an RTI framework across educational disciplines as well as grade levels is consonant with the No Child Left Behind Act of 2001 (P.L. 107-110) (NCLB 2001) and promotes the values that schools have an obligation to ensure that all students participate in strong instructional programs that support multifaceted learning.

Our goal in providing this manual is to help you think about implementing RTI in terms of manageable concrete steps. We believe you will find this manual helpful as your school considers implementation of RTI.

References

Bradley, R., Danielson, L., & Hallahan, D.P. (Eds.) (2002). *Identification of learning disabilities: Research to practice.* Mahwah, NJ: Lawrence Erlbaum Associates.

Fletcher, J.M, Coulter, W.A., Reschly, D.J., & Vaughn, S. (2004). Alternative approaches to the definition and identification of learning disabilities: Some questions and answers. *Annals of Dyslexia, 54*(2), 304-331.

Individuals with Disabilities Education Improvement Act of 2004 (Public Law 108-446).

National Committee on Science Education Standards and Assessment, National Research Council, (1996). *National science education standards*. Washington, DC: National Academy Press.

National Council of Teachers of Mathematics (2000). *Principles and standards for school mathematics.* Reston, VA: Author.

National Joint Committee on Learning Disabilities (2005). *Responsiveness to intervention and learning disabilities: Concepts, benefits and questions.* [Report] Alexandria, VA: Author.

No Child Left Behind Act of 2001 (Public Law 107-110).

NRCLD Symposium on Responsiveness to Intervention (2003, December). Papers and proceedings from the NRCLD Symposium on Responsiveness to Intervention, Kansas City, MO, retrieved April 3, 2006, from http://www.nrcld.org/symposium2003/index.html

President's Commission on Excellence in Special Education (2002, July). *A new era: Revitalizing special education for children and their families.* Report pursuant to Executive Order 13227, as amended. Jessup, MD: ED Pubs, Education Publications Center.

Vaughn, S., & Fuchs, L.S. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Research & Practice, 18*(3), 137-146.

Johnson, E., Mellard, D.F., Fuchs, D., & McKnight, M.A. (2006). *Responsiveness to intervention: How to do it.* Lawrence, KS: National Research Center on Learning Disabilities.

Section 1

School-Wide Screening

August 2006

Overview

Patterned on public-health models, responsiveness to intervention (RTI) is a multitiered instructional delivery and intervention process frequently used to prevent chronic learning problems. An important first step in any prevention approach is the school-wide (also known as universal) screening of students to accurately identify those who are at risk for learning difficulties. In this section, we define school-wide screening, outline important features of a screening process, describe the role screening plays within an RTI model and its significance, provide detailed information about implementation, and list resources for obtaining further information.

NRCLD is a joint project of researchers at Vanderbilt University and the University of Kansas. This document was produced under U.S. Department of Education Grant No. H324U010004. Renee Bradley served as the project officer. The views expressed herein do not necessarily represent the positions or policies of the Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service or enterprise mentioned in this publication is intended or should be inferred.

Features
Definition and Features

Screening is a type of assessment that is characterized by providing quick, low-cost, repeatable testing of age-appropriate critical skills (e.g., identifying letters of the alphabet or reading a list of high frequency words) or behaviors (e.g., tardiness, aggression, or hyperactivity).

The basic question in a screening measure is whether or not the student should be judged as "at risk." For example, the school nurse who uses the Snellen eye chart (Snellen, 1862) wants a quick indicator of students who might have difficulty seeing from a distance. If a student has difficulty reading the eye chart, a referral is made for a more in-depth assessment. In a similar way, the classroom teacher uses a screening measure to identify students who meet the screening criteria for possible at-risk status. These students are then considered for a more in-depth assessment, such as monitoring their progress during the next six weeks with specific assessments.

For a screening measure to be useful, it should satisfy three criteria (Jenkins, 2003):

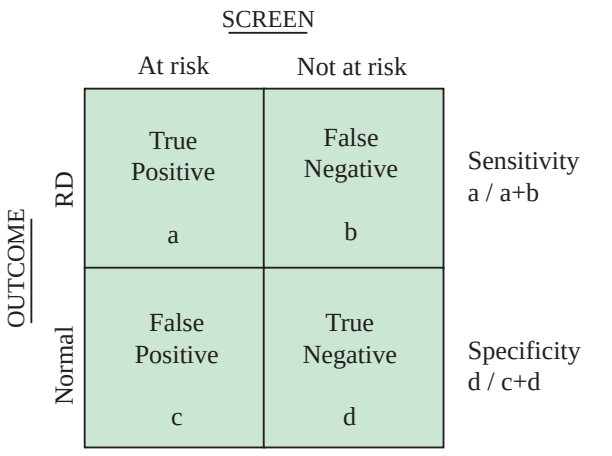
1. It needs to identify students who require further assessment
2. It needs to be practical
3. It needs to generate positive outcomes (accurately identifies students without consuming resources that could be put to better use)

For each of these criteria, several considerations are part of the selection of appropriate screening measures. These considerations are described below and the reader is referred to a paper presented by Joseph Jenkins at the 2003 RTI Symposium and accessible on the National Research Center on Learning Disabilities' web site (http://www.nrcld.org/symposium2003/jenkins/index.html) for more detailed information about these considerations.

Accuracy. The main purpose of a screening instrument is to identify students whose performance on the measure warrants further investigation. Because screening does not directly result in diagnosis, it is better for a screening instrument to err on the side of false positives (students identified as at risk, who through more intense assessment are found to have been misidentified) than on the side of false negatives (students not identified through screening who later turn out to be at risk). Therefore, a wider net with which to capture potentially at-risk students can be cast with screening measures. A potential drawback of having more false positives is the added expense of the additional testing and the provisions of services to more students, while a drawback of having more false negatives is that those students miss the opportunity to benefit from early intervention services. Ultimately, however, a school will want to find a measure that reaches an acceptable balance of efficiency and accuracy. To do this, schools will need to maintain data on how well the measure identifies students as at risk (e.g., track the number of false positives and false negatives). Such fine-tuning can help save resources.

One way to attempt to establish an acceptable balance is to use a decision-making model, which displays the distribution of true positives and true negatives, as well as the false positives and false negatives. A decision-making model also provides a mechanism for calculating the sensitivity and specificity of your screening tool. Sensitivity is the probability that the screening tool identifies those students who do have SLD, and specificity is the probability

Figure 1.1. Clinical Decision-Making Model



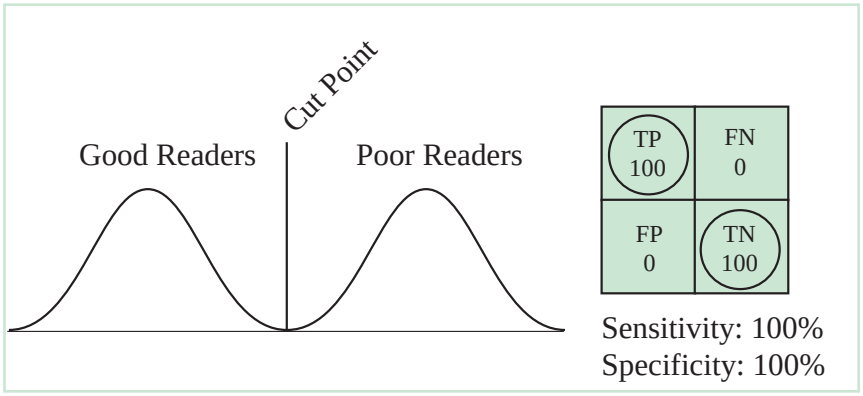
(Catts, 2006)

that the tool does not incorrectly identify those students who do not have SLD. See Figure 1.1 for an example of a decision-making table.

Cut score. Accuracy of screening also is determined by what cut scores are used. A cut score, also called cut point, is the score that represents the dividing line between students who are not at risk and those who are potentially at risk. The goal of school-wide screening is to identify those students who may be at risk for not acquiring the relevant skill and who may require further intervention. Schools will need to consider the emphasis given to particular levels of criteria performance when establishing cut scores. Additionally, some students perform on the "edge" of either side of the cut score, and guidelines will need to be established for determining when a student's performance warrants further investigation.

Adjusting cut scores directly affects the distribution of true positives, true negatives, false positives, and false negatives. Figures 1.2, 1.3, and 1.4 provide examples of changes in this distribution resulting from changes in the cut score.

Figure 1.2. The Ultimate Screen



(Catts, 2006)

Figure 1.3. Typical Screen

(Catts, 2006)

Figure 1.4. Typical Screen (Change in Cut Score)

(Catts, 2006)

Criterion versus norm referenced. Screening measures can use either a criterion referenced or normative comparison standard of performance. In the former, a specific criterion level of skills is specified as indicating an acceptable level of proficiency or mastery. In the normative comparison, the screening results are compared to an appropriate peer group (e.g., other students in first grade). Criterion measures are preferred because they give more accurate information about performance on relevant skills. In selecting an appropriate criterion measure, the school should attempt to link the measures at each grade level to appropriate existing performance measures, including existing performance standards in the school's curriculum. The content will need to be relevant to age/grade level and the skill in question.

Efficiency. A screening procedure must be brief as well as simple enough to be implemented reliably by teachers. Teachers must view the procedures as reasonable and important, or they may not reliably implement them (Jenkins, 2003). School-wide train-

ing on implementation and school-wide scheduling of screening procedures may be helpful in ensuring they are completed reliably.

School-Wide Screening Within an RTI Model

In the RTI model, screening is used to designate students who might be in need of closer monitoring in their general education curriculum or of a more intense intervention.

Screening is important as it represents the first gate or point of entry into subsequent tiers of RTI instruction. Screening is not a one-time process but an iterative system during the school year and across grade levels. During the course of primary instruction (Tier 1), the school uses school-wide screening (consistency) in essential academic areas to identify each student's level of proficiency (usually three times per year). The screening data are organized to allow for comparison of both group and individual performance on specific skills (National Association of State Directors of Special Education [NASDSE], 2005). In this way, the screening can serve three purposes:

1. Identify individuals in need of further assessment and possible movement to Tier 2 intervention
2. Provide feedback about class performance to help school leadership identify when a teacher might require support
3. If implemented on a regular basis across grade levels, identify false negatives, students who slip through the screening at one level but are then identified at later points in their school years.

The following excerpt from Fuchs & Fuchs (2006) summarizes the recommendations for best practice of school-wide screening within an RTI model:

> *How to target students for preventative intervention.* Regardless of the number of tiers employed within the RTI system, a second procedural dimension concerns how students are targeted to enter the RTI process and receive preventative intervention. Some RTI systems employ one-time school-wide screening, whereby all children in a school are assessed on a brief measure at the beginning of the school year. Students who score below a norm-referenced cut point (e.g., less than 25th percentile on the Woodcock Reading Mastery Tests – Word Identification) or below a performance benchmark associated with poor long-term outcome (e.g., less than 15 on curriculum-based measurement word identification fluency at the beginning of first grade) enter preventative intervention. In systems that rely on one-time school-wide screening to identify students who enter preventative intervention, the assumption is that low performance relative to the normative cut point or the performance benchmark at the beginning of a school year constitutes evidence that the child has failed to respond to Tier 1 general education during previous school years and therefore requires preventative intervention.
>
> In other versions of RTI, school-wide screening is conducted to identify a subset of students whose response to Tier 1 general education is then monitored for a relatively short period of time to (dis)confirm the risk status indicated via school-wide screening. Only the subset of students who (a) first meet the school-wide screening cut point and (b) then evidence poor rates of improvement over five to eight weeks of Tier 1 general education are deemed in need of a preventative intervention.
>
> Our *recommendation* is that schools use school-wide screening in combination with at least five weeks of weekly progress monitoring in response to general education to identify students who require preventative intervention. Our *rationale* is that one-time universal screening at the beginning of the year can over-identify students who require preventative intervention. For example, in our research (Compton, Fuchs, Fuchs & Bryant, 2006), conducted in reading at first grade, 50 percent of students identified on the basis of one-time screening spontaneously "recovered," i.e., made good progress over the course of first grade without preventative intervention. Identifying students for preventative intervention based on one-time screening means that schools are pressed to deliver costly preventative intervention to large numbers of students who do not need those services, thereby watering down the nature of preventative intervention. By contrast, our research (Compton et al., 2006) shows that five weeks of weekly progress monitoring can reduce or even eliminate the provision of preventative intervention to these "false positives"; hence, our recommendation to incorporate short-term progress monitoring in response to general education for determining students who require preventative intervention. (pages 39-40)

Changes
Changing Structures, Roles, and Responsibilities

As with most elements within the RTI model, the implementation of school-wide screening procedures necessitates a closer collaboration among general education and specialist staff. School leaders will need to effectively plan for the implementation of school-wide screening to include both the acquisition of resources and the time (scheduling) needed to administer screening. Schools will need to identify a standard procedure for identifying students as at risk (e.g., create a table of cut points or patterns of performance). Finally, schools will need to review screening results to inform the process of selection and cut-point determination—this is an iterative, continual process. Table 1.1 divides school personnel into three main areas and describes some of the responsibilities that personnel within these areas may be expected to undertake in school-wide screening.

Table 1.1: Changing Structures/Responsibilities

General Education*	Specialist/Support Staff*	Administration*
Administer school-wide screening measurements across content (reading, writing, math) areas according to schedule. Administer assessments, chart results, and evaluate results. Identify students for further monitoring for intervention by comparing results to predetermined cut points. Provide information to parents if using the results for reporting student progress.	Assist general education teachers in implementation efforts. Collect data on a screening tool and associated cut points to help inform the process. Collaborate with the general education teacher to assist in determination of students for further assessment. Present students identified as at risk during screening to school teams as candidates for more intensive progress monitoring at Tier 1 and possible entry to Tier 2 and beyond.	Lead effort to create infrastructure for school-wide screening. Provide necessary technology, materials, resources, and professional development to staff. Provide initial and continuing professional development opportunities for new staff and refresher training. Ensure fidelity of implementation through routine, periodic observation and discussions with staff. Research the availability of screening tool options with staff committee (or entire staff) to select appropriate tools/methods. Coordinate this system so that it meets multiple requirements, including determination of adequate yearly progress reports for the No Child Left Behind Act of 2001 (P.L. 107-110) (NCLB 2001). Determine when/whether classroom performance warrants intervention (e.g., entire class performance is considerably lower than other classes in the same grade level). Provide aggregated data from school-wide screening results to teachers and district personnel.

* General Education includes the general education teacher
* Specialist/Support Staff includes the special education teacher, reading or learning specialists, related services personnel, paraprofessionals
* Administration includes building principals and assistants as well as curriculum or assessment specialists at building or district levels

Activities/Tools

Methods and Procedures

The following three activities (*Activity 1.1: Essential Task List for School-Wide Screening*, *Activity 1.2: Standards to Judge High-Quality School-Wide Screening*, and *Activity 1.3: Internal Resources Needed to Implement School-Wide Screening*) provide a way for your school to think about implementing school-wide screening.

Activity 1.1

Essential Task List for School-Wide Screening

Directions: In the second column, write the name(s) of the individual or team who will assume responsibility for the task identified in the first column. In the third column, write the deadline for or status of the task.

Task	Responsible Individual/Team	Timeline/Status
Review your screening instrument's items to be certain that content is aligned with the curriculum for each grade level.		
Once a tool has been selected, determine and secure the resources required to implement it.		
Determine initial professional development needs and continuing professional development support.		
Administer the screening measure three times a year (e.g., early fall, mid-term, and late spring).		
Create a database that aligns with the screening instrument to hold student information and scores.		
Organize the screening results (e.g., graphs and tables) to provide a profile of all students and their comparisons with each other.		
Monitor results at the classroom level and make decisions about when teachers/instructional programs require more scrutiny and support.		
Add screening results to a database so that students' performance can be monitored over time.		
Specify written steps to follow when further scrutiny is needed for students judged to be at risk.		

Activity 1.2

Standards for Judging High-Quality School-Wide Screening

Directions: Read each of the standards for judging high-quality school-wide screening. The checklist is formatted so that you can indicate current and planned implementation.
- If the practice has been implemented, indicate that with a checkmark (√).
- If the practice is being developed, rank its priority: 1 = highest priority through 3 = lowest priority.

Standard	Status	
	In Place (√)	Priority (1-2-3)
Screening is school-wide, meets accepted psychometric standards[1], and has evidence of documented reliability[2] and concurrent[3] and predictive validity[4] within the particular school setting.		
Individuals involved in the screening measures' administration, scoring, and interpretation are appropriately trained.		
The site obtains reading screening data or information about reading skills following a designated fixed schedule.		
At least 95 percent of the students participate in the school-wide screening. Reasons for excluding students from the school-wide screening are reasonable and appropriate (e.g., severe/profound disabilities).		
Alternative methods to obtain information about reading skills for students excluded from reading assessments have individual curricular relevance and allow students' achievement to be measured and evaluated.		

[1] Psychometric standards are the theoretical approaches and procedures used to measure the difference between individuals' knowledge, attitudes, abilities, and personality traits.

[2] Documented reliability is the extent to which a measurement yields consistent results over repeated testing of the same measure under identical conditions.

[3] Concurrent validity occurs when a new measurement or test correlates well with a previously validated measure. These two concurrent measures may be for the same construct or for different but related constructs.

[4] Predictive validity is the extent to which quantitative attributes predict scores on some criterion measure where one measure occurs earlier and is meant to predict some later measure.

Activity 1.3

Internal Resources Needed to Implement School-Wide Screening

Directions: In *Activity 1.2: Standards for Judging High-Quality School-Wide Screening*, you identified which school-wide screening standards had been implemented in your school and which standards still need attention. In the space below, list the resources (material, curriculum, space, equipment, and people) your school will need to effectively implement school-wide screening.

Material/Curriculum	Space/Equipment	People

Resources

Resources

The following five tables (1.2 to 1.6) list measures that hold potential as screening tools for reading ability (Jenkins, 2003).

Table 1.2. Early and Mid-kindergarten Screens

Measure/Study	Sample	Type of Evidence	Result			
Letter Identification (Scanlon & Vellutino, 1996)	1407 Early-Mid K	Classification	At Risk	Sensitivity	Specificity	Criterion
			10%	32%	95%	Severe reading difficulty grade 1 (teacher-identified)
Letter Identification (Scanlon & Vellutino, 1996)	1407 Early-Mid K	Classification	At-Risk	Sensitivity	Specificity	Criterion
			35%	75%	75%	Severe reading difficulty grade 1 (teacher-identified)
Combination of: Phoneme Segmentation Letter Naming Fluency Syllable Elision (O'Connor & Jenkins, 1999)	129 Nov. K	Classification	At-Risk	Sensitivity	Specificity	Criterion
			18 %	100%	88%	Below 8th percentile Woodcock Reading Mastery Test (WRMT Basic Rd.) Scale Grade 1
Same combination with revised cut scores	101 Nov. K	Classification	At-Risk	Sensitivity	Specificity	Criterion
			20%	100%	86%	Same
Same combination with revised cut scores	215 Nov. K		At-Risk	Sensitivity	Specificity	Criterion
			18 %	91%	86%	Same

(Continued on page 1.12)

Table 1.2. Early and Mid-kindergarten Screens (Continued)

Measure/Study	Sample	Type of Evidence	Result			
Texas Primary Reading Inventory (TPRI) Combination of: Letter Sound Identification Blend Onset-Rimes and Phonemes (Foorman, Fletcher, et al., 1998)	421 December K	Classification	At-Risk	Sensitivity	Specificity	Criterion
			56%	95%	56%	Below 23rd percentile Woodcock Johnson (WJ) Broad Reading Spring Grade 1
DIBELS-Oral Reading Fluency (OnRF) (Good, Simmons, & Kame'enui, 2001)	353 Winter K	Concurrent Validity	.36 WJ-R Reading Readiness Cluster			
		Predictive Validity	.36 WJ-R Reading Cluster			
	378 Winter K	(Mid K - Spring Grade 1)	.45 CBM-ORF			

Table 1.3. Late Kindergarten

Measure/Study	Sample	Type of Evidence	Result			
Dynamic Assessment Combination of: (1) Letter Naming Fluency (LSF) (2) Phoneme Segmentation (3) Sound Repetition (O'Connor & Jenkins, 1999)	129 April K	Classification	At Risk	Sensitivity	Specificity	Criterion
			19%	100%	87%	Below 8th percentile
						WRMT Basic Reading - Spring Grade 1
Same combination with revised cut-scores (O'Connor & Jenkins, 1999)	101 April K		At-Risk	Sensitivity	Specificity	Criterion
			17%	100%	91%	Same
TPRI (1) Letter Sound Identification (LSI) (2) Blending Phonemes (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998)	421 April K	Classification	At-Risk	Sensitivity	Specificity	Criterion
			50%	90%	62%	Below 23rd percentile
						WJ-Broad Reading Grade 1
Composite of CTOPP-Blending and Elision (Speece, Mills, Ritchey, & Hillman, 2003)	39 Spring K	Classification	At-Risk	Sensitivity	Specificity	Criterion
			25%	66.7%	81.8%	Below 26th percentile
				42.9%	78.1%	WJ-R Word Attack
						CBM-ORF
		Concurrent Validity	.68 WJ-R Letter-Word ID			
		Predictive Validity	.73 WJ-R Letter-Word ID			
		Spring Grade 1	.73 WJ-R Word Attack			
			.62 CBM-ORF			
DIBELS-Phoneme Segmentation Fluency (PSF) (Good et al., 2001)	353 Spring K	Concurrent Validity	.62 NWF			
		Predictive Validity	.68 WJ-R Reading Cluster			
		Spring K-Winter Grade 1	.62 CBM-ORF			
		Spring K-Winter Grade 1	.54 WJ-R Reading Readiness Cluster			

(Continued on page 1.14)

Table 1.3. Late Kindergarten (Continued)

Measure/ Study	Sample	Type of Evidence	Result			
Letter Name Fluency (LNF) (Speece et al., 2003)	39 Spring K	Classification	At-Risk	Sensitivity	Specificity	Criterion Measure
			25%	50.0	78.8	WJ-R Word Attack
				87.5	87.5	CBM-ORF
		Concurrent Validity	.55 WJ-R Letter-Word ID			
		Predictive Validity	.55 WJ-R Letter-Word ID			
		Spring Grade 1	.44 WJ-R Word Attack			
			.69 CBM-ORF			
		Other Predictions Spring Grade 1	(1) LNF accounted for no unique variances in Letter Word ID, Word Attack, or CBM-ORF, after controlling for Phonological Awareness and NWF.			
DIBELS-Nonsense Word Fluency (NWF) (Speece et al., 2003)	39 Spring K	Classification	At-Risk	Sensitivity	Specificity	Criterion
			(Lowest 25% of sample on NWF in Spring K)	50.0	72.7	Below 26th percentile
				85.7	81.3	WJ-R Word Attack
						CBM-ORF
		Concurrent Validity	.91 WJ-R Letter-Word ID			
		Predictive Validity	.59 WJ-R Letter-Word ID			
		Spring K-Spring Grade 1	.59 WJ-R Word Attack			
			.71 CBM-ORF			
		Other Prediction Spring Grade 1	(1) NWF did not account for significant variances in WJ-R Letter-Word ID once phonology awareness was controlled.			
			(2) NWF accounted for significant variance in WJ-R Word Attack and CBM-ORF, after Phonological Awareness was controlled.			
			(3) NWF accounted for significantly more variance than LNF in Word Attack and CBM-ORF.			

Table 1.4. Early First Grade

Measure/Study	Sample	Type of Evidence	Result			
Letter-Sound Fluency (LSF) (Speece & Case, 2001)	142 Fall Grade 1	Classification	At-Risk	Sensitivity	Specificity	Criterion Measure
			25% on LNF	55.9	83.7	Dually (Level and Slope) Discrepant (-1 Standard Deviation) on CBM-ORF
Combination of: (1) Letter Naming Fluency (2) Phoneme Segmentation (3) Sound Repetition (O'Connor & Jenkins, 1999)	215 Oct. Grade 1		At-Risk	Sensitivity	Specificity	Criterion Measure
			17%	100%	87%	Same
TPRI Combination of: (1) Word Reading (2) Blending Phonemes	599 Fall Grade 1	Classification	At-Risk	Sensitivity	Specificity	Criterion
			48%	93%	63%	WJ-Broad Reading Grade 1
DIBELS-NWF (Fuchs, Fuchs, & Compton, 2003)	151 Fall and Spring Grade 1 at-risk (defined by Letter Naming Fluency)	Concurrent Validity				
		Fall Grade 1	.58 WRMT-R Word ID .50 WRMT-R Word Attack			
		Spring Grade 1	.64 WRMT-R Word ID .51 WRMT-R Word Attack .80 CRAB Fluency			
		Predictive Validity				
		Fall-Spring Grade 1	.57 WRMT-R Word ID .46 WRMT-R Word Attack .64 CRAB Fluency			

(Continued on page 1.16)

Table 1.4. Early First Grade (Continued)

Measure/ Study	Sample	Type of Evidence	Result
DIBELS-NWF (Good et al., 2001)	342 Winter Grade 1	Concurent Validity	.36-.59 WJ-R Reading Readiness
		Predictive Validity	
		Spring Grade 1	.82 CBM-ORF
		Spring Grade 2	.60 CBM-ORF
		Spring Grade 2 (?)	.66 WJ-Reading Cluster
Word Identification Fluency (WIF) (Fuchs et al., 2003)	151 Fall and Spring Grade 1 at-risk	Concurrent Validity	
		Fall Grade 1	.77 WRMT-R Word ID .59 WRMT-R Word Attack
		Spring Grade 1	.82 WRMT-R .52 WRMT-R .93 Comprehensive Reading Assessment Battery (CRAB) Fluency
		Predictive Validity	
		Spring Grade 1	.63 WRMT-R Word ID .45 WRMT-R Word Attack .80 CRAB Fluency

Table 1.5. Late First Grade and Early Second Grade

Measure/Study	Sample	Type of Evidence	Result			
TPRI Combination of: (1) Word Reading (2) Blending Phonemes (Foorman et al., 1998)	376 Spring Grade 1	Classification	At-Risk	Sensitivity	Specificity	Criterion
			38%	92%	77%	Below 36th percentile WJ Broad Reading - Spring Grade 2
TPRI Word Reading (Foorman et al., 1998)	537 Fall Grade 2	Classification	At-Risk	Sensitivity	Specificity	Criterion
			29%	91%	85%	Below 36th percentile WJ Broad Reading Spring Grade 2
CBM-ORF (Speece & Case, 2001)	144 Fall Grade 2	Classification	At-Risk	Sensitivity	Specificity	Criterion
			25% on CBM-ORF	77%	80%	Dually (Level and Slope) Discrepant (-1 Standard Deviation) on CBM-ORF

Table 1.6. CBM-ORF and MAZE

Measure/Study	Sample	Type of Evidence	Result			
CBM-ORF (Stage & Jacobson, 2001)	173 Sept Grade 4	Classification	At-Risk	Sensitivity	Specificity	Criterion
			32%	66%	76%	Not meeting standard on state test
Basic Academic Skills Samples (BASS)-Maze (Jenkins & Jewell, 1991)	322 Fall Grades 2–6	Concurrent Validity	Gates-McGinitie Total Reading			
			.65	Grade 2		
			.63	Grade 3		
			.75	Grade 4		
			.76	Grade 5		
			.72	Grade 6		
	374 Spring Grades 1–6	Concurrent Validity	Metropolitan Achievement Test Total Reading			
			.78	Grade 1		
			.76	Grade 2		
			.66	Grade 3		
			.72	Grade 4		
			.72	Grade 5		
			.67	Grade 6		
	322 Fall Grades 2–6	Concurrent	Bottom 15% of students on BASS-MAZE			
		Percent Overlap	and Gates-McGinitie Total Reading			
			57%	Grade 2		
			75%	Grade 3		
			54%	Grade 4		
			50%	Grade 5		
			65%	Grade 6		
	374 Spring Grades 1–6	Concurrent	Bottom 15% of students on BASS-Maze and			
		Percent Overlap	Metropolitan Achievement Test Total Reading			
			38%	Grade 1		
			57%	Grade 2		
			62%	Grade 3		
			54%	Grade 4		
			62%	Grade 5		
			60%	Grade 6		

Web

The following web-based resources may be helpful in researching, selecting, and implementing school-wide screening. NRCLD does not endorse these products; these resources are intended to be a source of information about programs and publications that will help teachers, principals, and district personnel in their choice of materials that can be used by skilled teachers to provide effective instruction and successfully implement an RTI program. Whether or not a program or publication has been listed does not constitute endorsement or lack of endorsement by NRCLD. These resources do not constitute an "approved" or "required" list. Also, many potentially useful programs or publications may not be listed here.We hope that readers will complete careful reviews of available alternatives.

EdCheckup
http://www.edcheckup.com/

The site offers an assessment system for screening student performance and measuring student progress toward goals in reading. Generic passages, which are independent from any particular basal reading series, also may be used to evaluate the effectiveness of reading instruction through the graphing of student reading data. Browsers must pay to view materials from this site.

EdProgress
http://www.edprogress.com/index.htm

EdProgress focuses on assessment, large-scale testing and accountability, and systemic reform. With research-proven training materials, measurement tools, reporting systems, and teacher training interventions, EdProgress helps teachers become more focused on teaching and learning for all students. Browsers must pay to view materials from this site.

Evidence-Based Progress Monitoring and Improvement System
http://www.aimsweb.com

AIMSweb® is a formative assessment system that informs the teaching and learning process by providing continuous student performance data and reporting improvement to students, parents, teachers, and administrators to enable evidence-based evaluation and data-driven instruction. Browsers must pay to view materials from this site.

Intervention Central
http://www.interventioncentral.org

This web site offers free tools and resources to help school staff and parents promote positive classroom behaviors and foster effective learning for all children and youth. The web site was created by Jim Wright, a school psychologist from Syracuse, N.Y.

Monitoring Basic Skills Progress (MBSP)
http://www.proedinc.com/store/index.php?mode=product_detail&id=0840

Developed by Lynn Fuchs, Carol Hamlett, and Douglas Fuchs, MBSP is a computer program for automatically conducting curriculum-based measurement and for monitoring student progress in reading, math computation, and math concepts and applications. The computer program provides immediate feedback to students about their progress and provides individual and class-wide reports to teachers to help them plan more effective instruction. Browsers must order and pay for materials from this site.

National Center for Learning Disabilities
http://www.ncld.org/index.php?option=content&task=view&id=571

NCLD works to ensure that the nation's 15 million children, adolescents, and adults with learning disabilities have every opportunity to succeed in school, work, and life. Materials on this site are free.

National Center on Student Progress Monitoring
http://www.studentprogress.org

This center's mission is to provide technical assistance to states and districts and to disseminate information about progress monitoring practices proven to work in different academic content areas (grades K–5). Materials on this site are free.

National Consortium on Oral Reading Fluency
http://nc-orf.uoregon.edu/orflinks.html

The purpose of this web site is to help integrate measurement within the decision-making process. Site developers believe that the profession needs to have immediate access to data, as primary information from research studies, as participants in research and development efforts to collect such data, and as end users who would like to upload or download normative performance levels. This web site is designed to serve all three purposes. Materials on this site are free.

Reading Success Lab
http://www.readingsuccesslab.com

The Reading Success Lab provides software solutions for identifying reading problems and improving reading skills. Some screening materials on this site are free, but browsers must order and pay for other materials from this site.

References

Catts, H. (2006, April). *School-wide screening*. Presentation at the National SEA Conference on Responsiveness to Intervention: Integrating RTI within the SLD Determination Process, Kansas City, MO. Retrieved July 12, 2006, from http://www.nrcld.org/sea/presentations_worksheets/screening/Catts_screening.pdf

Compton, D.L., Fuchs, D., Fuchs, L.S., & Bryant, J.D. (2006). Selecting at-risk readers in first grade for early intervention: A two-year longitudinal study of decision rules and procedures. *Journal of Educational Psychology, 98,* 394-409.

Foorman, B.R., Fletcher, J.M., Frances, D.J. Carlson, C.D., Chen, D., Mouzaki, A., Schatschneider, C., Wristers, K., & Taylor, R. (1998). *Technical report: Texas primary reading inventory technical 1998 ed.* Houston, TX: Center for Academic and Reading Skills and University of Houston.

Foorman, B.R., Francis, D.J., Fletcher, J.M., Schatschneider, C., & Mehta, P. (1998). The role of instruction in learning to read: Preventing reading failure in at-risk children. *Journal of Educational Psychology, 90,* 37–55.

Fuchs, L.S., & Fuchs, D. (2006). Implementing responsiveness-to-intervention to identify learning disabilities. *Perspectives on Dyslexia, 32*(1), 39-43.

Fuchs, L.S., Fuchs, D., & Compton, D. (2003). Longitudinal study of alternative methods of LD identification. Paper presented at the Annual International Conference of the Learning Disabilities Association, Chicago, IL.

Good, R.H., Simmons, D., & Kame'enui, E. (2001). The importance and decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. *Scientific Studies of Reading, 5*, 257–288.

Jenkins, J.R. (2003, December). Candidate measures for screening at-risk students. Paper presented at the NRCLD Responsiveness-to-Intervention Symposium, Kansas City, MO. Retrieved April 3, 2006, from http://www.nrcld.org/symposium2003/jenkins/index.html.

Jenkins, J.R., & Jewell, M. (1992). An examination of the concurrent validity of the Basic Academic Skills Samples (BASS). *Diagnostique, 17*(4), 273–288.

National Association of State Directors of Special Education, Inc. (2005). *Response to intervention: Policy considerations and implementation.* Alexandria, VA: Author.

O'Connor, R.E., & Jenkins, J.R. (1999). The prediction of reading disabilities in kindergarten and first grade. *Scientific Studies of Reading, 3,* 159–197.

Scanlon, D.M., & Vellutino, F.R. (1996). Prerequisite skills, early instruction, and success in first grade reading: Selected results from a longitudinal study. *Mental Retardation and Development Disabilities, 2,* 54–63.

Snellen, H. (1862). Eye examination chart originally created by Dutch ophthalmologist Hermann Snellen, M.D., in 1862.

Speece, D., & Case, L. (2001). Classification in context: An alternative approach to identifying early reading disability. *Journal of Educational Psychology, 93,* 735–749.

Speece, D., Mills, C., Ritchey, K., & Hillman, E. (2003). Initial evidence that letter fluency tasks are valid indicators of early reading skill. *Journal of Special Education, 36,* 223–233.

Stage, S.A., & Jacobsen, D.M. (2001). Predicting student success on a state-mandated performance-based assessment using oral reading fluency. *School Psychology Review, 30,* 407–419.

Section 2

Progress Monitoring

August 2006

Overview

Progress monitoring is a set of assessment procedures for determining the extent to which students are benefiting from classroom instruction and for monitoring effectiveness of curriculum. A fundamental assumption of education is that students will benefit from high-quality instruction. That is, typically, students will learn and achieve the skills and content taught in the classroom. For students who are not responsive to classroom instruction, alternative interventions can be provided and again the students' response to that instruction can be monitored. Progress monitoring is a valid and efficient tool for gauging the effectiveness of instruction, determining whether instructional modfications are necessary, and providing important information for eventual classification and placement decisions.

Information about progress monitoring is rapidly expanding. The National Center on Student Progress Monitoring, sponsored by the U.S. Office of Special Education Programs (OSEP), provides an array of free, web-based progress monitoring resource materials at www.studentprogress.org.

NRCLD is a joint project of researchers at Vanderbilt University and the University of Kansas. This document was produced under U.S. Department of Education Grant No. H324U010004. Renee Bradley served as the project officer. The views expressed herein do not necessarily represent the positions or policies of the Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service or enterprise mentioned in this publication is intended or should be inferred.

Features
Definition and Features

Progress monitoring is the scientifically based practice of assessing students' academic performance on a regular basis for three purposes:

1. To determine whether children are profiting appropriately from the instructional program, including the curriculum;
2. To build more effective programs for the children who do not benefit; and
3. To estimate rates of student improvement.

In a responsiveness to intervention (RTI) paradigm, progress monitoring assists school teams in making decisions about appropriate levels of intervention (National Center on Student Progress Monitoring, 2006).

The National Association of State Directors of Special Education (NASDSE) (2005, pp. 25-26) has identified nine essential characteristics for progress monitoring to be useful in an RTI context. Progress monitoring should do the following:

1. Assess the specific skills embodied in state and local academic standards
2. Assess marker variables that have been demonstrated to lead to the ultimate instructional target
3. Be sensitive to small increments of growth over time
4. Be administered efficiently over short periods
5. Be administered repeatedly (using multiple forms)
6. Result in data that can be summarized in teacher-friendly data displays
7. Be comparable across students
8. Be applicable for monitoring an individual student's progress over time
9. Be relevant to development of instructional strategies and use of appropriate curriculum that addresses the area of need

Progress Monitoring

Progress Monitoring Within an RTI Model

Progress monitoring serves an important function in specific learning disabilities (SLD) determination. If applied rigorously, progress monitoring addresses the federal legal stipulation that students who are determined to have a disability have not benefited from general education instruction. If the student receives high-quality instruction, progress monitoring procedures can help school staff and parents determine the extent to which the student benefited.

Several types of assessments can provide information about the status of students' knowledge, skills, and abilities. Although practitioners sometimes interchange various progress monitoring procedures with school-wide screening and diagnostic tests, differentiating among these types of assessments is important. Table 2.1 highlights several distinguishing features of these three types of assessments.

Within an RTI model, progress monitoring serves various functions at each tier. The following sections describe the roles progress monitoring can play within each tier.

Progress Monitoring in Tier 1

In Tier 1, progress monitoring procedures serve several functions.

Progress monitoring versus general screening. Proactive assessment procedures are best employed at least three times per year (beginning, middle, and end) and are used as general screening procedures for all students. School-wide screening and progress monitoring can serve a similar function in this regard. Screening of all students is used to determine those students who may be at risk by comparing their performance relative to a criterion measure. Progress monitoring displays individual student growth over time, to determine whether the student is progressing as expected in the generally effective curriculum.

Curriculum-based measurement (CBM) as

Table 2.1. Purposes of Three Types of Assessment

	Screening	Progress Monitoring	Diagnostic Tests
Population	School-wide	Class/small group/student	Individual student
Uses	Broad Index	Specific academic skill or behavioral target	Specific academic domains of knowledge, skills, or abilities
Frequency	Yearly/3x/monthly	≤ 3 weeks/weekly/daily	Yearly
Purpose	Identify students who are at risk	Regroup students	Identify specific student deficits
Focus	School focus	Student/class focus	Student focus
Instruction	Class/school instruction and curriculum decisions	Within intervention (curriculum/instruction)	Selecting curriculum and instructional methods
Implications	As first step for intervention planning	Continue or revise placement	Planning or specifying intervention

primary method of progress monitoring. In addition to general screening measures, a system of progress monitoring is recommended at Tier 1 for all students. CBM assesses the different skills covered in the annual curriculum in such a way that each weekly test is an alternate form. The assumption is that these alternate forms are comparable in difficulty. For example, in September, a CBM mathematics test assesses all of the computation, money, graphs/charts, and problem-solving skills to be covered during the entire year. In November and/or February and/or May, the CBM tests the annual curriculum in exactly the same way (but with different items). Therefore, scores earned at different times during the school year can be compared to determine whether a student's performance is increasing, decreasing, or staying the same (National Center on Student Progress Monitoring, 2006). If the scores are increasing, this indicates that the student's skills are improving. If the scores are remaining the same or decreasing over time, this indicates that a student is not benefiting from the intervention (instruction or curriculum) and a change is needed in the student's intervention program. The following are examples of CBM for reading and math:

- Monitoring Basic Skills Progress (Pro-Ed Online, 2006)
- Dynamic Indicators of Basic Early Literacy Skills (DIBELS, 2006)
- Intervention CBM probes (Intervention Central, 2006)

The results of progress monitoring in Tier 1 inform decision making about classroom instruction in two main ways:

1. At the class level, average performance of all students combined and their rate of growth can help a teacher or administrator determine how to create instructional and curricular change so that all students reach proficiency on the skill.
2. At the individual student level, schools use predetermined cut points to identify students in need of more extensive and intensive interventions in Tier 2 and beyond.

Progress Monitoring in Tier 2 and Beyond

In Tier 2 and beyond, the purpose of progress monitoring shifts slightly. The main purpose of progress monitoring of Tier 2 and beyond interventions is to determine whether the intervention is successful in helping the student learn at an appropriate rate. Decision rules need to be created to determine when a student might no longer require Tier 2 and beyond services and can be returned to the general classroom (Tier 1), when the intervention needs to be changed, or when a student might be identified for special education. Timely decisions about student progress at this tier are critical for the student's long-term achievement. The following research-based recommendations are made to facilitate timely decision making:

1. Assess student progress using CBM in Tier 2 and beyond twice per week
2. Chart these results and analyze student progress regularly
3. Use preset rules to determine when a student is not adequately responding to an intervention (commonly suggested rules are that four consecutive data points below the goal line warrant changes to the intervention; four above the goal line warrant raising the goal.)

(Fuchs, Fuchs, Hintze, and Lembke, 2006; National Association of State Directors of Special Education, 2005)

Progress Monitoring in Special Education

In special education, progress monitoring also serves other purposes. First, the progress monitoring done to this point provides systematic, reliable, and multiple data points that can inform the eligibility determination decision and subsequent development of specially designed instruction to meet the student's individual needs. Second, progress monitoring is a requirement of the individualized education program (IEP) and provides information about student progress toward short-term objectives and annual goals.

Changes
Changing Structures, Roles, and Responsibilities

The implementation of a progress monitoring system within an RTI model will require shifts in school structures as well as in the roles and responsibilities of educators.

Impact on conceptualizations of SLD. Under a system of progress monitoring, SLD is primarily regarded as low achievement relative to classroom-peer functioning. If, for example, the bottom 25 percent of the class is selected for further progress monitoring or for placement in secondary interventions, then a student's designation for Tier 2 and beyond intervention could vary depending upon what class he or she is in. The use of a dual-discrepancy model to identify students whose performance is low *and* have low rates of progress can help remove some of this variability. Continued progress monitoring is required through the tiers to be sure that students are responsive to all tiers of instruction. If a student responds (or makes progress) in secondary or tertiary levels of intervention, the school will have to decide whether progress is great enough that the student is ready to return to Tier 1 (general education class) or whether the student should remain in the more intense instruction to maintain levels of performance comparable to peers. Students identified as in need of secondary or tertiary interventions still may require more in-depth assessment to determine appropriate instructional interventions. As progress is measured, educators obtain information about the student's level of performance and rate of gain. The measures, however, do not provide information to help educators make decisions about the student's ability or processing deficits associated with learning and performance.

School structural changes. General education teachers will need to consider and create (or select) appropriate assessments. These assessments will need to be consistent and similar in structure and appropriate to grade level. Another consideration is the relationship of these tools to school content and performance standards. Because best practice suggests that assessments be conducted at least on a weekly basis, teachers and schools need to develop the infrastructure to do this. A process for analyzing results at both the classroom level (to determine individual student performance) and the school level (to determine classroom performance) also will need to be developed. Table 2.2 on page 2.6 describes changes that will need to occur across different areas of the school under progress monitoring.

Teacher training issues. The individual assessments and recording of information comprise a fairly straightforward process. Many teachers already may be familiar with the concepts or be able to quickly learn and implement them after a professional development session. (See Resources on page 2.21 for information about web sites, published software, and texts for materials to provide professional development.) Teachers will need to learn to analyze results to determine which students require the next tier of intervention and when such a move should take place. Incoming teachers also will require professional development on the particulars of the school's system of progress monitoring.

Table 2.2. Changing Different Areas of the School Under Progress Monitoring

General Education*	Specialist/Support Staff*	Administration*
Implement the system of progress monitoring across content (reading, writing, math) areas Administer assessments at least every three weeks or more frequently (weekly or twice a week, if needed); chart and evaluate results Identify students for diagnostic testing or for secondary intervention Provide aggregate data of classroom results to principal Provide information to parents if using the results for reporting student progress Collaborate in selecting/creating progress-monitoring tools	Monitor progress of students in secondary/tertiary tiers of intervention in a particular content area Administer relevant assessments; chart and evaluate results Identify when a student is making adequate progress in a more intense instructional level Collaborate with the general education teacher to assist in determination of students for secondary/tertiary tier intervention and to provide suggestions/consultation on instructional strategies for students Incorporate progress monitoring goals into IEP development	Lead effort to create infrastructure for progress monitoring Provide necessary technology, materials, and resources Provide initial and continuing professional development opportunities for new staff and refresher training for other staff Ensure fidelity of implementation through routine, periodic observation and discussions with staff Research the availability of CBM options with staff committee (or entire staff) to select appropriate tools and methods. Ensure this system meets multiple requirements, including determination of adequate yearly progress (AYP) for No Child Left Behind Act of 2001 (P.L. 107-110) (NCLB 2001) Determine when/whether classroom performance warrants intervention (i.e., entire class performance is considerably lower than other classes in the same grade level) Review aggregate data of classrooms and provide feedback to teachers

*General Education includes the general education teacher
*Specialist/Support Staff includes the special education teacher, reading or learning specialists, related services personnel, paraprofessionals
* Administration includes building principals and assistants as well as curriculum or assessment specialists at building or district levels

Examples
CBM with Reading

The figures on these pages (2.1 through 2.4) are offered as illustrations based on a variety of research activities. We do not endorse a particular progress monitoring method. To find an evaluative report about the many and varied progress monitoring systems, refer to the tools on the OSEP-sponsored National Center on Student Progress Monitoring web site (www.studentprogress.org and www.studentprogress.org/chart/chart.asp).

Figures 2.1 through 2.4 (Fuchs & Fuchs, 2006) illustrate the use of curriculum-based measurement to monitor progress in reading. As students read passages, such as the one depicted in Figure 2.1, an education professional (teacher or paraprofessional, for example) records the number of words read correctly per minute. The student's scores are graphed, as in Figures 2.2 and 2.3 on page 2.8. Over time, the graphs will depict whether the student is mak-

Figure 2.1. CBM Passage for Correct Words per Minute

Mom was going to have a baby. Another one! That is all we need thought Samantha who was ten years old. Samantha had two little brothers. They were brats. Now Mom was going to have another one. Samantha wanted to cry.

"I will need your help," said Mom. "I hope you will keep an eye on the boys while I am gone. You are my big girl!"

Samantha told Mom she would help. She did not want to, though. The boys were too messy. They left toys everywhere. They were too loud, too. Samantha did not want another baby brother. Two were enough.

Dad took Samantha and her brothers to the hospital. They went to Mom's room. Mom did not feel good. She had not had the baby. The doctors said it would be later that night. "I want to wait here with you," said Samantha. "Thank you Samantha. But you need to go home. You will get too sleepy. Go home with Grandma. I will see you in the morning," said Mom.

That night Samantha was sad. She knew that when the new baby came home that Mom would not have time for her. Mom would spend all of her time with the new baby.

The next day Grandma woke her up. "Your mom had the baby last night," Grandma said. "We need to go to the hospital. Get ready. Help the boys get ready, too."

Samantha slowly got ready. She barely had the heart to get dressed. After she finished, she helped the boys. They sure were a pain! And now another one was coming. Oh brother!

Figure 2.2. Sarah's Progress: Words Read Correctly

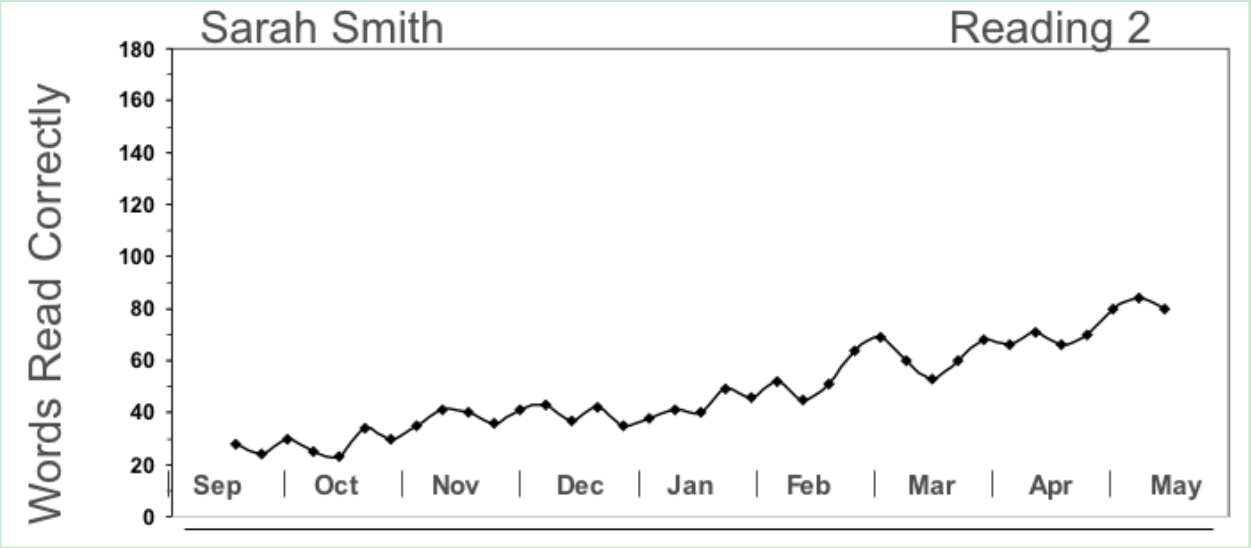
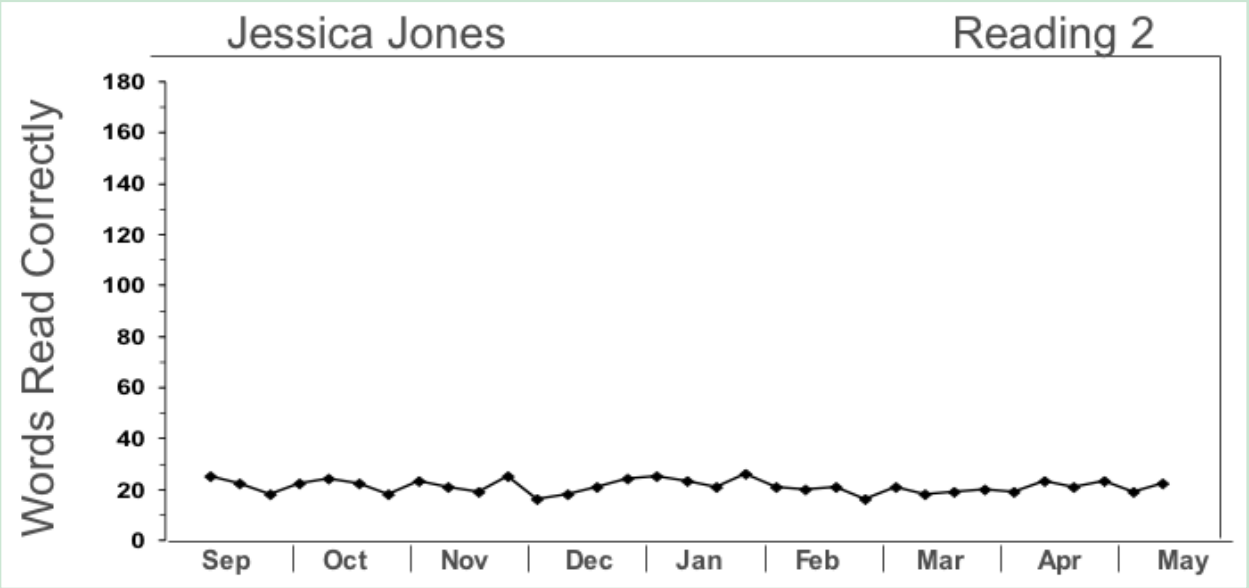


Figure 2.3. Jessica's Progress: Words Read Correctly



ing progress, as shown in Sarah's graph in Figure 2.2, or not making progress, as shown in Jessica's graph in Figure 2.3. School teams can then use these graphs to help determine student groups or to make decisions about possible changes in instruction or curriculum.

Figure 2.4 illustrates how cut scores can be used in considering whether a student is at risk. At the beginning of second grade, if a student scores fewer than 15 words read correctly per minute, educators may suspect the child is at risk and implement weekly monitoring of the child's progress. After five weeks of Tier 1 (general education) instruction, if the CBM graph shows the student's rate of increase is less than one word read correctly per week, the student is determined to be at risk and is moved to Tier 2 instruction.

If at the end of Tier 2 instruction, the graph continues to show less than one word a week increase in reading fluency *and* the student is reading fewer than 40 words correctly per minute, he or she is considered to be a nonresponder and is referred for a comprehensive evaluation.

Figure 2.4. Grade 2 CMB Passage Reading Fluency

Beginning of year

< 15 words per minute (suspected risk)

Weekly monitoring

First 5 weeks of Tier 1 instruction

< 1 word weekly increase (risk)

Tier 2 instruction

End Tier 2 instruction

< 1 word weekly increase *and* < 40 words per minute (nonresponder)

Comprehensive evaluation

Examples
CBM with Mathematics

The figures on these pages (2.5 through 2.10) are offered as illustrations based on a variety of research activities. We do not endorse a particular progress monitoring method. To find an evaluative report about the many and varied progress monitoring systems, refer to the tools on the OSEP-sponsored National Center on Student Progress Monitoring web site (www.studentprogress.org and www.studentprogress.org/chart/chart.asp).

Figures 2.5 through 2.10 (Fuchs & Fuchs, 2006) illustrate the use of curriculum-based measurement to monitor progress in mathematics. Each CBM assessment contains problems representative of all of the concepts that will be covered during the year (Figure 2.5). Numerals within problems are chosen at random, depending on the specifications of the problem types. In addition, problem types are placed randomly on the page.

Figure 2.5. CBM Assessment in Mathematics

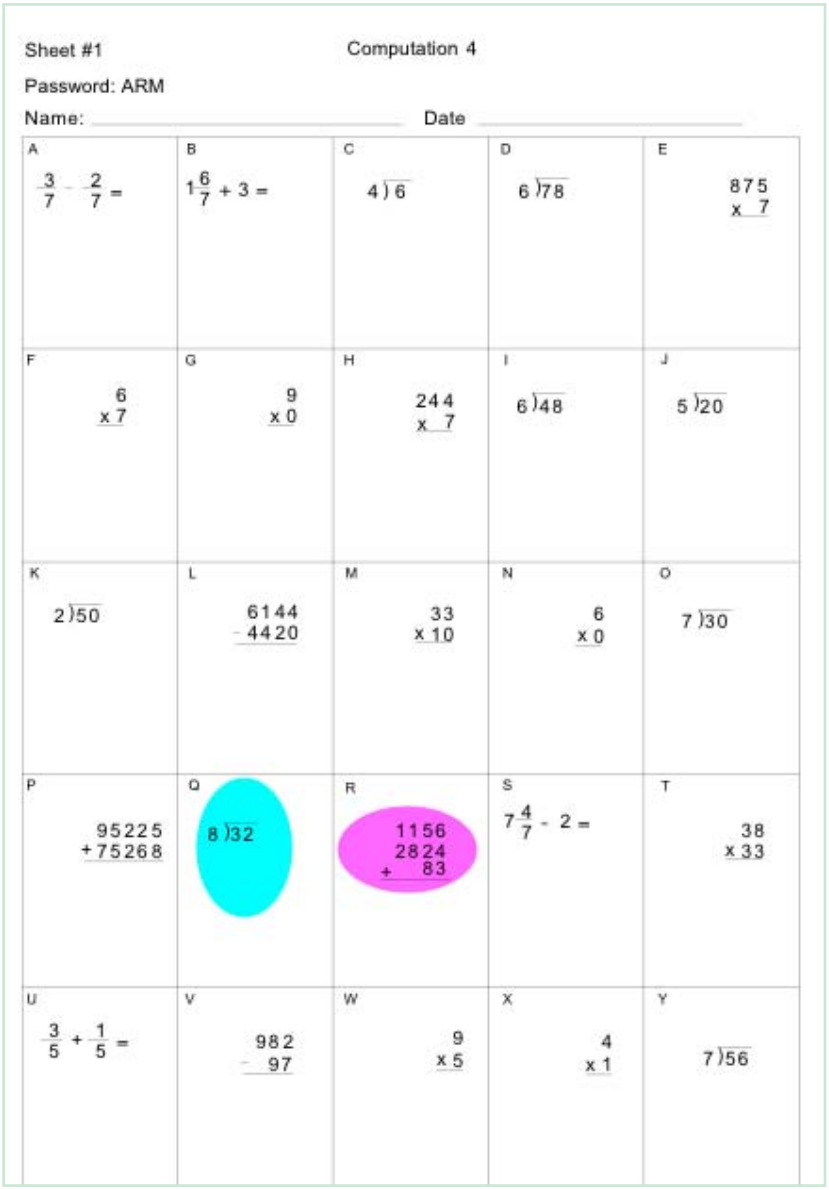


Figure 2.6 shows the results of a computer-based CBM assessment for an individual student. For students whose progress is unacceptably poor, CBM is used for individual decision making. In this figure, more data points are needed before a decision can be made about this student's progress.

Figure 2.7 shows a class summary of a computer-based CBM assessment. In general education, the progress-monitoring focus is on the class report to enhance instruction for *all* students and to identify which students need more help. Figure 2.7 specifies this information clearly for Mrs. Smith's class.

Figure 2.6. Student Report of CBM Mathematics Assessment Scores

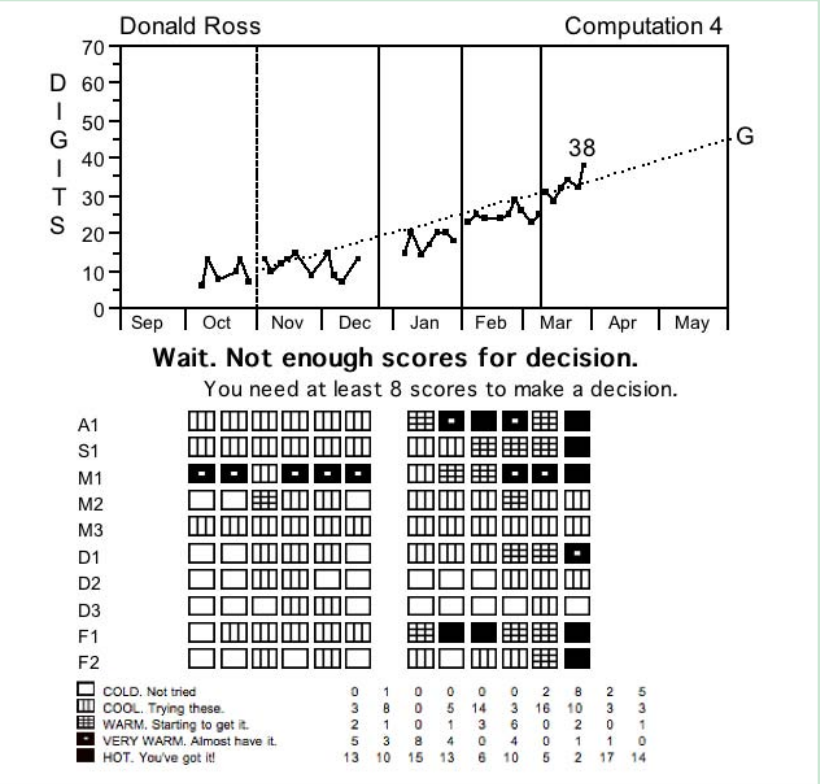
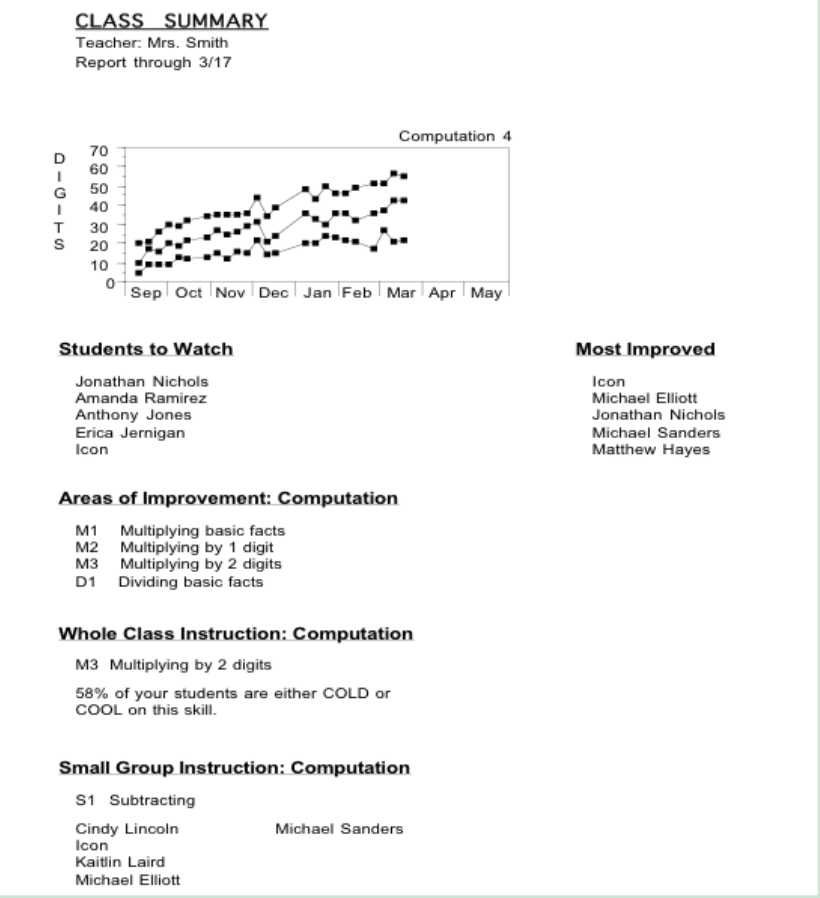


Figure 2.7. Class Summary of CBM Mathematics Assessments



Another report available through this CBM tool is the class skills profile (Figure 2.8), which clearly illustrates each student's progress toward mastery of the mathematics concepts tested. The report uses icons to show level of achievement (from "not tried" to "you've got it!"), allowing the teacher to see the big picture of her students' accomplishments at a glance.

Figure 2.9 on page 2.13 shows a report ranking the scores of every student in Mrs. Smith's class. The ranked scores consist of an average of each student's last two CBM scores. The last column, Growth, is each student's average weekly increase, or slope.

The final report in this CBM tool, Figure 2.10 on page 2.13, provides the overall class scores and identifies students whose progress is poor compared to peers. Identification is based on dual discrepancy, in which the student's overall score is low and rate of growth is flat.

Figure 2.8. CBM Class Skills Profiles

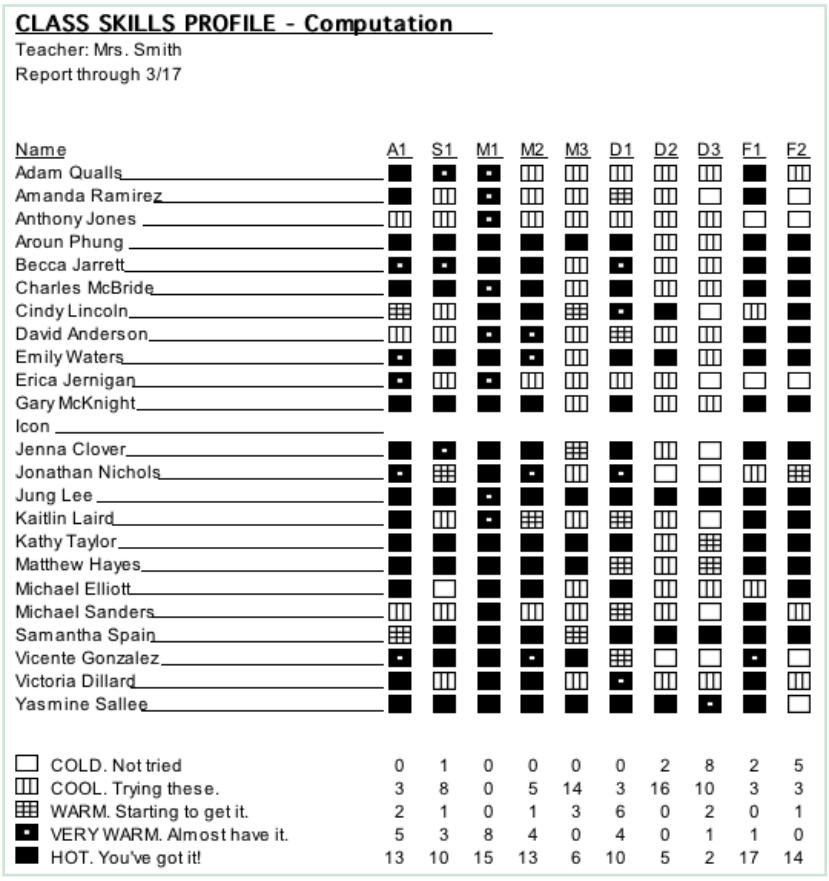


Figure 2.9. Rankings Showing Average of Last Two CBM Scores and Slope

RANKED SCORES — Computation
Teacher: Mrs. Smith
Report through 3/17

Name	Score	Growth
Samantha Spain	57	+1.89
Aroun Phung	56	+1.60
Gary McKnight	54	+1.14
Yasmine Sallee	53	+1.34
Kathy Taylor	53	+1.11
Jung Lee	53	+1.23
Matthew Hayes	51	+1.00
Emily Waters	48	+1.04
Charles McBride	43	+1.12
Michael Elliott	42	+0.83
Jenna Clover	42	+0.78
Becca Jarrett	41	+1.14
David Anderson	38	+0.79
Cindy Lincoln	36	+1.04
Kaitlin Laird	35	+0.71
Victoria Dillard	34	+0.64
Vicente Gonzalez	29	+0.28
Adam Qualls	26	+0.60
Michael Sanders	25	+0.70
Jonathan Nichols	25	+2.57
Amanda Ramirez	23	+0.85
Anthony Jones	19	+0.05
Erica Jernigan	18	+0.23

Figure 2.10. Overall Class Scores

CLASS STATISTICS: Computation
Teacher: Mrs. Smith
Report through 3/17

Score

Average Score	39.5
Standard deviation	12.6
Discrepancy criterion	26.9

Slope

Average slope	+0.98
Standard deviation	0.53
Discrepancy criterion	+0.45

Students identified with dual discrepancy criterion

	Score	Slope
Anthony Jones	19.0	+0.05
Erica Jernigan	18.0	+0.23

Activities/Tools

Methods and Procedures

The following activities (*Activity 2.1: Essential Task List for Progress Monitoring, Activity 2.2: Standards for Judging High-Quality Progress Monitoring,* and *Activity 2.3: Internal Resources Needed to Implement Progress Monitoring*) provide ways for your organization to think about implementing progress monitoring.

Activity 2.1

Essential Task List for Progress Monitoring

Directions: In the second column, write the name(s) of the individual or team who will assume responsibility for the task identified in the first column. In the third column, write the deadline for or the status of the task.

Tier 1

Task	Responsible Individual/ Team	Timeline/Status
Within the relevant content area, review the progress monitoring measure or tool selected for Tier 1 to determine whether content is aligned with your curriculum.		
Once a tool has been selected, determine and secure the resources required to implement it (e.g., computers, folders/copies, testing areas).		
Determine initial professional development needs and continuing professional development support.		
Implement a system of data collection and progress monitoring that includes determining both level and growth rate.		
Administer the progress monitoring measure frequently enough to assess a learner's responsiveness. At Tier 1, screening is three times a year, with routine monitoring weekly or twice weekly.		
Monitor results at the individual student level and make decisions about reasonable cut scores to determine movement to Tier 2 and beyond.		
Monitor results at the classroom level and make decisions about when teachers or instructional programs require more scrutiny and support.		

Tier 2 and Beyond

Task	Responsible Individual/ Team	Timeline/Status
Implement a system of data collection and progress monitoring that includes determining both level and growth rate.		
Within the relevant area of focus for the intervention, review the progress monitoring measure or tool selected for Tier 2 and beyond to determine whether content is aligned with the intervention.		
Administer the progress monitoring measure frequently enough to assess a learner's responsiveness. At Tier 2, two to five times per week is the research-based recommendation.		
Organize results to provide a profile of the student's progress within this tier. This could be a graph of test scores supplemented with student work samples.		
Monitor results to determine whether a student is responding to the intervention.		
Develop decision rules about when to return a student to Tier 1, when to continue with Tier 2 and beyond, and whether further scrutiny of student performance for special education is warranted.		

Special Education

Task	Responsible Individual/ Team	Timeline/Status
Implement a system of data collection and progress monitoring that includes determining both level and growth rate.		
Include progress monitoring records from Tier 1 and Tier 2 and beyond when making decisions regarding special education evaluation/eligibility.		
Ensure that the special education teacher receives progress monitoring results for the individual student *along with* evidence gathered during the eligibility process.		
Develop progress monitoring measures aligned with the students' annual goals and short-term objectives and include these measures on the individualized education program (IEP).		
Administer the measure frequently enough to assess a learner's responsiveness.		

Activity 2.2

Standards for Judging High-Quality Progress Monitoring

To find an evaluative report about the many and varied progress monitoring systems, refer to the tools on the OSEP-sponsored National Center on Student Progress Monitoring web site (www.studentprogress.org and www.studentprogress.org/chart/chart.asp).

Directions: Read each of the standards, which have been identified as mechanisms for judging high-quality progress monitoring. The checklist is formatted so that you can indicate current and planned implementation.

- If the practice has been implemented, indicate that with a checkmark (√).
- If the practice is being developed, rank by priority: 1 = highest priority through 3 = lowest priority.

Standard	Status	
	In place (√)	Priority (1-2-3)
Scientific, research-based instruction includes the continuous progress monitoring of student performance across all tiers.		
Teachers follow a designated procedure and schedule for progress monitoring and for regrouping students as needed.		
Measures are administered frequently to inform instruction and curricular placement decisions (i.e., in Tier 1, at least every three weeks; in Tier 2 and beyond, one to three times per week; in special education, three to five times per week).		
Progress monitoring occurs in all tiers (including general education).		
Progress monitoring measures are appropriate to the curriculum, grade level, and tier level.		
Data resulting from progress monitoring are documented and analyzed.		
Progress monitoring uses a standardized benchmark by which progress is measured and determined to be either sufficient or insufficient.		
Teachers use progress monitoring data to evaluate instructional effectiveness and to be informed about the potential necessity for changing the instruction.		
An established data-management system allows ready access to students' progress monitoring data.		
After progress monitoring, a graph is completed to display data for analysis and decision-making and to indicate percentages of students at risk, at some risk, and at low risk.		

Continued on page 2.19

Standards for Judging High-Quality Progress Monitoring, Continued

Standard	Status	
	In place (√)	**Priority (1-2-3)**
Staff members receive training in the administration and interpretation of progress monitoring measures.		
The school designates reasonable cut scores and decision rules for the level, slope, or percentage of mastery to help determine responsiveness and distinguish adequate from inadequate responsiveness.		
Cut scores are reviewed frequently and adjusted as necessary.		
The school provides a rationale for the cut scores and decision rules (e.g., normative or specific criterion reference).		

(Mellard & McKnight, 2006)

Activity 2.3

Internal Resources Needed to Implement Progress Monitoring

Directions: In *Activity 2.2: Standards for Judging High-Quality Progress Monitoring,* you identified which progress monitoring standards had been implemented in your school and which standards still need attention. In the space below, list the resources (material, curriculum, space, equipment, and people) your school will need to effectively implement progress monitoring.

Material/Curriculum	Space/Equipment	People

Resources/Materials

The following resources may support your implementation of progress monitoring efforts. NRCLD does not endorse these products; these resources are intended to be a source of information about programs and publications that will help teachers, principals, and district personnel in their choice of materials that can be used by skilled teachers to provide effective instruction and successfully implement an RTI program. Whether or not a program or publication has been listed does not constitute endorsement or lack of endorsement by NRCLD. These resources do not constitute an "approved" or "required" list. Also, many potentially useful programs or publications may not be listed here.We hope that readers will complete careful reviews of available alternatives.

Dynamic Indicators of Basic Early Literacy Skills (DIBELS)
http://dibels.uoregon.edu/index.php

This site offers an assessment system for screening student performance and measuring student progress toward goals in reading. Generic passages, which are independent from any particular basal reading series, also may be used to evaluate the effectiveness of reading instruction through the graphing of student reading data. Browsers must pay to view materials from this site.

EdCheckup
http://www.edcheckup.com

This site offers an assessment system for screening student performance and measuring student progress toward goals in reading. Generic passages, which are independent from any particular basal reading series, also may be used to evaluate the effectiveness of reading instruction through the graphing of student reading data. Browsers must pay to view materials from this site.

EdProgress
http://www.edprogress.com

EdProgress focuses on assessment, large-scale testing and accountability, and systemic reform. With research-proven training materials, measurement tools, reporting systems, and teacher training interventions, EdProgress helps teachers become more focused on teaching and learning for all students. Browsers must pay to view materials from this site.

Evidence-Based Progress Monitoring and Improvement System
http://www.aimsweb.com

AIMSweb® is a formative assessment system that informs the teaching and learning process by providing continuous student performance data and reporting improvement to students, parents, teachers, and administrators to enable evidence-based evaluation and data-driven instruction. Browsers must pay to view materials from this site.

McGraw-Hill Digital Learning
http://www.mhdigitallearning.com

McGraw-Hill Digital Learning provides research-based, standards-aligned technology solutions that improve student performance and teacher productivity.

Intervention Central
http://www.interventioncentral.org

This site offers free tools and resources to help school staff and parents promote positive classroom behaviors and foster effective learning for all children and youth. The site was created by Jim Wright, a school psychologist from Syracuse, N.Y. Materials on this site are free.

Minnesota Reading Excellence Act
http://education.umn.edu/CI/MREA/CBM/cbmMOD.html

This is a progress-monitoring module written by Stan Deno. The purpose of this module is to provide an introduction to procedures for monitoring student reading progress in the classroom based on curriculum-based measurement (CBM). It also introduces the steps required to implement a system for screening and monitoring students in the area of reading and presents a summary of research on the effectiveness of these procedures. Throughout this module, the focus is on students who are not making satisfactory progress and are at risk of failing to develop basic reading skills. Materials on this site are free.

Monitoring Basic Skills Progress (MBSP)
http://www.proedinc.com/store/index.php?mode=product_detail&id=0840

Developed by Lynn Fuchs, Carol Hamlett, and Douglas Fuchs, the MBSP is a computer program for automatically conducting curriculum-based measurement and for monitoring student progress in reading, math computation, and math concepts and applications. The computer will provide immediate feedback to students on their progress and provide individual and classwide reports to teachers to help them plan more effective instruction. Browsers must order and pay for materials from this site.

National Center on Accessing the General Curriculum
http://www.cast.org/ncac/Curriculum-BasedEvaluations2913.cfm

This link goes directly to an article titled "Curriculum-Based Evaluations," by Tracey Hall, Ph.D., Senior Research Scientist, NCAC, and Missy Mengel, RA. The article contains links to several web sites related to progress monitoring.

National Consortium on Oral Reading Fluency
http://nc-orf.uoregon.edu/orflinks.html

The purpose of this web site is to help integrate measurement within the decision-making process. Site developers believe that the profession needs to have immediate access to data, as primary information from research studies, as participants in research and development efforts to collect such data, and as end users who would like to upload or download normative performance levels. This web site is designed to serve all three purposes. The final use of the web site is to link with others, both directly as regional contacts and through the links to other sites that reflect similar efforts elsewhere. Materials on this site are free.

Read Naturally
http://www.readnaturally.com/

Read Naturally combines three research-proven strategies to develop the reading fluency of students served in special education, as English language learners (ELL), in Title I, and in general education. Browsers must order and pay for materials from this site.

References

References

Dynamic Indicators of Basic Early Literacy Skills (DIBELS) (2006). Retrieved March 9, 2006, from http://dibels.uoregon.edu

Fuchs, D., & Fuchs, L.S. (2006, April) Progress monitoring. Presentation at the National SEA Conference on SLD Determination: Integrating RTI within the SLD Determination Process, Kansas City, Mo. Retrieved July 12, 2006, from http://www.nrcld.org/sea/presentations_worksheets/progress/Fuchs_progress.pdf

Fuchs, L.S., Fuchs, D., Hintze, J., & Lembke, E. (2006, July). Progress monitoring in the context of responsiveness-to-intervention. Presentation at the Summer Institute on Student Progress Monitoring, Kansas City, MO.

Intervention Central (2006). Retrieved March 9, 2006, from http://www.interventioncentral.org.

Mellard, D.F., & McKnight, M.A. (2006). RTI implementation tool for reading: Best practices [Brochure]. Lawrence, KS: National Research Center on Learning Disabilities.

National Association of State Directors of Special Education, Inc. (2005). *Response to intervention: Policy considerations and implementation.* Alexandria, VA: Author.

National Center on Student Progress Monitoring (2006). Retrieved March 9, 2006, from www.studentprogress.org.

No Child Left Behind Act of 2001 (Public Law 107-110).

Pro-Ed Online (2006). Retrieved March 9, 2006, from http://www.proedinc.com/.

Johnson, E., Mellard, D.F., Fuchs, D., & McKnight, M.A. (2006). *Responsiveness to intervention (RTI): How to do it.* Lawrence, KS: National Research Center on Learning Disabilities.

Section 3

A Tiered Service-Delivery Model

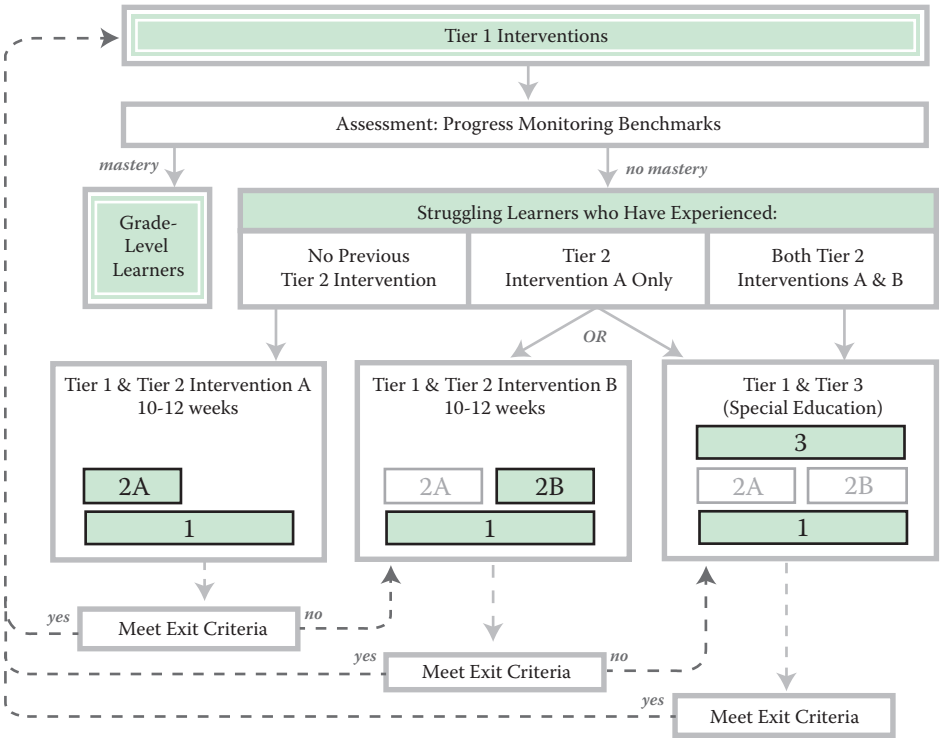
August 2006

**Note: Each of the above sections includes background information, descriptive information, activities, and resources. See the first page of each section for a complete listing of that section's content.*

Overview

Responsiveness to intervention (RTI) is a multitiered service-delivery model. Although much discussion continues surrounding the issues of how many tiers constitute an adequate intervention (O'Connor, Fulmer, & Harty, 2003; Tilly, 2003; Vaughn, 2003; Marston, 2003), RTI is most frequently viewed as a three-tiered model, similar to those used for service-delivery practices such as positive behavioral support. Figure 3.1 depicts a three-tiered model as conceived in an RTI framework.

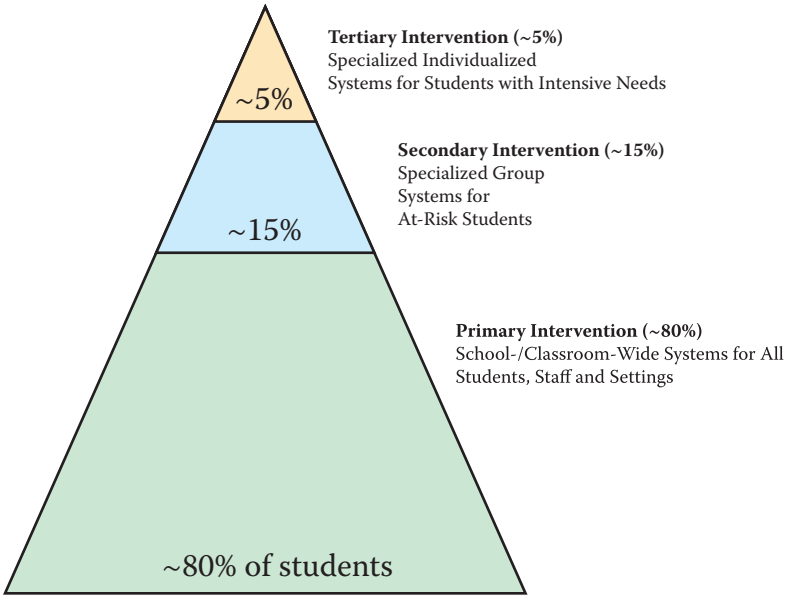
Figure 3.1. Responsiveness to Intervention: Tier 1, Tier 2 and Beyond, Special Education



Adapted from Vaughn (2003)

NRCLD is a joint project of researchers at Vanderbilt University and the University of Kansas. This document was produced under U.S. Department of Education Grant No. H324U010004. Renee Bradley served as the project officer. The views expressed herein do not necessarily represent the positions or policies of the Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service or enterprise mentioned in this publication is intended or should be inferred.

Figure 3.2. Continuum of Intervention Support for At-Risk Students



Adapted from "What is School-Wide PBS?" OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports.

In attempting to adequately discuss the multitiered nature of RTI, and knowing that schools may decide to implement more than three tiers of intervention, we will refer to Tier 1 as primary supports for students in the general education classroom. Tier 2 and beyond will refer to secondary-level interventions in specialized groups for at-risk students, that is students who have not been responsive in a Tier 1 intervention or who are predicted to be at risk based on screening results. Our tier labeling allows for districts to organize multiple levels of targeted interventions that are distinct from special education. For example, schools might implement three or more tiers. We will refer to the tertiary level of specialized and individualized interventions for students with intensive disabilities as special education. Figure 3.2 depicts this continuum of school-wide support and indicates the approximate percentage of students whose service delivery will be provided at each level.

Like other models, RTI is meant to be applied on a school-wide basis, in which the majority of students receive generally effective, scientifically based instruction in Tier 1, the general classroom. Within Tier 1 instruction, schools can use special funding allocations attached to early intervening services. Students in Tier 1 who are at risk for reading and other learning disabilities are identified through school-wide screening for more intense support in Tier 2 and beyond interventions. Students who have been identified as having specific learning disabilities (SLD) are not eligible to receive early intervening services. Students who fail to respond to the interventions provided in Tier 2 and beyond may then be referred for an individualized, comprehensive evaluation and, depending upon the results, be considered for specialized instruction in special education (adapted from Vaughn, 2003).

In multitiered models of service delivery, instruction is differentiated to meet learner needs at various levels. Several specific factors or dimensions help distinguish among interventions at the various tier levels. In general, a higher degree of specificity and intensity is associated with a higher tier of intervention. For example, instructional grouping could vary from whole class (Tier 1) to one-on-one (special education). The following features are used throughout this section's description of the instructional strategy, design, and approach in the various tiers:

- Size of instructional group
- Mastery requirements of content
- Frequency of progress monitoring
- Duration of the intervention (weeks)
- Frequency with which the intervention is delivered
- Instructor's skill level
- Focus of the content or skills

In Parts One, Two, and Three of *Section 3: A Tiered Service-Delivery Model*, we elaborate on the features that comprise Tier 1, Tier 2 and beyond, and special education in the context of RTI. You will gain a heightened appreciation for the application of school-wide screening and progress monitoring in the multitiered service-delivery model. The importance of incorporating data-based decision making in service delivery will be addressed as will the benefits of parent involvement.

Part One
Tier 1
(Primary Supports and Interventions)

Part One Contents

Background

An RTI approach incorporates a multitiered model of educational service delivery in which each tier represents increasingly intense services that are associated with increasing levels of learner needs. The various tier interventions are designed to provide a set of curricular/instructional processes aimed at improving student response to instruction and student outcomes. In this system, primary supports and interventions, commonly known as Tier 1 interventions, represent the *least-intensive* level of service delivery. Tier 1 is designed to serve *all* students in the school with well-supported instructional programs. Tier 1 interventions are intended to be proactive and preventive (National Association of State Directors of Special Education [NASDSE], 2005). This means that the core foundation of curriculum, instruction, and school organization increases the likelihood of improved student achievement and success for all students and may reduce the number of students who are referred for special education services and supports. In this section, we describe the components and processes necessary to provide high-quality Tier 1 instruction. Additionally, we provide activities and tools to guide schools during Tier 1 implementation.

Features
Definition and Features

In the RTI framework, Tier 1 occurs in the general education classroom. General educators are expected to assume responsibility for instruction at this level. This tier is considered the high-quality instruction that is the focus of the No Child Left Behind Act of 2001 (P.L. 107-110) (NCLB 2001). The language of the Individuals with Disabilities Education Improvement Act of 2004 (P.L. 108-446) (IDEA 2004) indicates that students must receive appropriate learning experiences before a disability can be considered as a basis for achievement or behavioral difficulties. In Tier 1, general education teachers adopt scientifically-based instructional programs in reading, writing, and math and ensure accurate and consistent instructional delivery through measures of fidelity of implementation. In Tier 1, general educators are expected to participate in regular and rigorous professional development to continuously build their professional competencies. In effect, instruction in Tier 1 is instruction using a standard treatment protocol.

Tier 1 includes the following features:

Size of instructional group. Tier 1 instruction is provided to the whole class.

Mastery requirements of content. Cut points identified on screening measures and continued growth as demonstrated by routine progress monitoring are indicators of content mastery.

Frequency and focus of screening. In general, screening assessments occur at least three times per year, are school wide, use a broad index, and are used to identify students who are at risk and to inform school or class-wide instruction and curriculum decisions.

Frequency and focus of progress monitoring. Recommendations on progress monitoring vary. In general, progress monitoring occurs at least once every three weeks, often as frequently as weekly, twice weekly, or even daily. Progress monitoring takes place in all tiers. At-risk students in Tier 1 need to be monitored at a more frequent rate than the three times per year rate provided by screening. Some researchers (Fuchs, 1989) suggest the monitoring of student progress at Tier 1 either weekly or twice a week. It is likely that students who receive Tier 2 and beyond or special education interventions will require progress to be monitored at least weekly and often more frequently. Progress monitoring assessments are focused on a class, small group, or individual student and target a specific academic skill. Results of progress monitoring provide data that can be used to make decisions about regrouping students or about continuing, revising, or changing an intervention.

Duration of the intervention. Students remain in Tier 1 throughout the school year unless found eligible for special education and specially designed instruction that cannot be provided in the general classroom.

Frequency with which the intervention is delivered. Instruction in Tier 1 intervention occurs according to school schedules and curriculum guidelines.

Instructor qualifications. Tier 1 instruction is provided by general educators who are "highly qualified" as defined by NCLB 2001 legislation.

Tier 1 intervention is characterized by high-quality, scientifically based instruction that occurs in the general education classroom and is implemented by the general education teacher. The use of scientifically based programs and practices ensures that student difficulties cannot be attributed to inappropriate or ineffective, poor-quality classroom instruction. Moreover, NCLB 2001 mandates the use of "scientifically-validated instruction" among practitioners.

Several resources are available to assist consumers in evaluating whether an educational intervention is supported by scientifically based research. For example, the Coalition for Evidence-Based Policy (2003) advances the following three-step process in its guide, "Identifying and Implementing Educational Practices Supported by Rigorous Evidence: A User Friendly Guide," to evaluate whether an educational intervention is supported by rigorous evidence:

1. *Is the intervention backed by strong evidence (quality and quantity needed) of effectiveness?*
2. *If this intervention is not backed by "strong" evidence, is it backed by "possible" evidence of effectiveness?*
3. *If the answers to both questions above are "no," one may conclude that meaningful evidence does not support the intervention.*

Tier 1 Within an RTI Model

In RTI systems, Tier 1 instruction is the base level of educational service delivery aimed at meeting the needs of most students in the school setting. Accordingly, most students will achieve academic success when provided Tier 1 instruction as described in this section. Tier 1 reduces the incidence of "instructional casualties" by ensuring that students are provided high-quality instruction and monitoring.

Tier 1 is particularly important as this intervention level represents the first "gate" in a system designed to better accommodate the diverse learning needs of all students. Tier 1 provides the foundation for instruction upon which all supplementary interventions (e.g., Tier 2 and beyond, special education) are formulated in a system of responsiveness to intervention. An important benefit of Tier 1 instruction is that the high-quality instruction and monitoring highlights students who need supplemental support (e.g., small-group or individualized instruction that is more intense or frequent).

Changing Structures, Roles, and Responsibilities

Tier 1 will require significant changes to many staff roles and responsibilities and to school structures.

RTI models are intended to provide needed interventions to students in a timely manner. These models work in the context of general education and as such help ensure that students do make adequate yearly progress toward the state's learner outcomes. For many schools, this shift differs from special education as the primary service model for students with learning or performance problems. In RTI models, general education staffs have responsibility for examining student progress and achievement through a system designed to support student success and "catch" all students who experience trouble. Such a system requires an integrated approach to service delivery that includes "leadership, collaborative planning, and implementation by professionals *across* the education system" (NASDSE, 2005, p. 3). This approach represents a significant change in typical roles within the school structures. In Tier 1, general educators take a more active role in the screening, identification, and intervention processes of students judged as at risk (as evidenced by predictive screening measure results) or not meeting adequate progress (as evidenced by progress monitoring measure results). Table 3.1 divides school personnel into three main areas and describes some of the responsibilities that personnel within these areas may be expected to undertake in Tier 1.

In the RTI framework, student progress/achievement is monitored very closely—revealing a subset of students who are at risk for school failure. Some of these at-risk students will require specialized interventions within general education while others may have a disability that will be diagnosed and treated with special education. Regardless, close collaboration between general and special education will promote a more seamless system of service provision that will strengthen both the delivery of high-quality interventions for all students and the integrity of the disability identification process (Learning Disabilities Roundtable, 2002).

Table 3.1. School Personnel and Some of Their Responsibilities

General Education*	Specialist/Support Staff*	Administration*
Provide scientifically based core instructional programs Support implementation of school-wide screening Monitor student progress through curriculum-based measurement (CBM) Use data to inform instructional decision-making; analyze progress monitoring results to determine which students are at risk and require more intense instructional support Participate in regular and rigorous professional development (Fuchs & Fuchs, 2005) Collaborate with designated teams/staff to formulate plans for at-risk students (i.e., students moving into Tier 2 and beyond and students who are referred to special education)	Support implementation of school-wide screening to identify students who may be at risk Collaborate with general education to monitor student progress and assist in analyzing progress monitoring results to determine which students are at risk and require more intense instructional support Participate in regular and rigorous professional development (Fuchs & Fuchs, 2005)	Ensure that scientifically based core instructional programs are provided for the general education teachers Ensure implementation of a school-wide screening program Ensure progress monitoring of students, such as through curriculum-based measurement (CBM) Ensure that measures to monitor fidelity of Tier 1 interventions are in place Oversee analysis of the progress monitoring results to determine which students are at risk and require more intense instructional support Ensure that teachers are provided regular and rigorous professional development (Fuchs & Fuchs, 2005)

* General Education includes the general education teacher
* Specialist/Support Staff includes the special education teacher, reading or learning specialists, related services personnel, paraprofessionals
* Administration includes building principals and assistants as well as curriculum or assessment specialists at building or district levels

Activities/Tools

Methods and Procedures

The following activities (*Activity 3.1: Essential Task List for Tier 1*, *Activity 3.2: Standards for Judging High-Quality Tier 1 Interventions*, and *Activity 3.3: Internal Resources Needed to Implement Tier 1*) provide ways for your school to think about implementing Tier 1 instruction in a multitiered RTI service-delivery model.

Activity 3.1

Essential Task List for Tier 1 Instruction

Directions: In the second column, write the name of the individual or team who will assume responsibility for the task identified in the first column. In the third column, write the deadline for or status of the task. Complete each task identified.

Task	Responsible Individual/Team	Timeline/Status
Identify scientifically based instructional programs in reading, writing, and math		
Select evidence-based curricula/interventions and resources to accompany core instructional programs		
Adopt a system to measure fidelity of implementation		
Select and implement a school-wide academic and behavior screening program		
Identify team and process to manage screening results		
Establish data-collection system and implement systematic monitoring of student progress (such as curriculum-based measurement) to determine both level and growth rate.		
Identify team and process to analyze progress monitoring results.		
Develop decision rules (including cut scores) to determine which students are at risk and require more intense instructional support		
Develop a program of continuous, rigorous professional development experiences related to scientifically based curriculum and teaching practices, progress monitoring, implementing practices with fidelity, and data-based decision-making		
Develop and implement a process for collaborating with the problem-solving team and monitoring student movement between Tier 1 and Tier 2		
Decide when to initiate parent involvement		

Activity 3.2

Standards for Judging High-Quality Tier 1 Instruction

Directions: Read each of the standards, which have been identified as mechanisms for judging high-quality Tier 1 instruction. The checklist is formatted so that you can indicate current and planned implementation.

• If the practice has been implemented, indicate that with a checkmark (√).

• If the practice is being developed, rank its priority: 1 = highest priority through 3 = lowest priority.

Keep in mind that NCLB 2001 defines *scientifically based research* as "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs." Numerous sources (Coalition for Evidence-Based Policy, 2003; Comprehensive School Reform Program Office, 2002; National Research Council, 2002; NCLB, 2001) agree that scientifically based research's defining characteristics include "persuasive research that empirically examines important questions using appropriate methods that ensure reproducible and applicable findings" (Beghetto, 2003).

Standard	Status	
	In Place (√)	Priority (1-2-3)
Scientifically based reading instruction and curriculum emphasize the five critical elements of reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension).		
Core reading program occurs for > 90 minutes each day.		
Professional development focuses on improving instruction methods.		

(Mellard & McKnight, 2006; National Research Center on Learning Disabilities [NRCLD], 2005)

Activity 3.3

Internal Resources Needed to Implement Tier 1 Instruction

Directions: In *Activity 3.2: Standards to Judge High-Quality Tier 1 Instruction*, you identified which Tier 1 intervention standards had been implemented in your organization and which standards still need attention. In the space below, list the resources (material, curriculum, space, equipment, and people) your organization will need to effectively implement the standards.

Material/Curriculum	Space/Equipment	People

Resources

Resources for Tier 1

We have compiled a brief (but not exhaustive) list of materials available to help inform educators about evidence-based interventions that may be appropriate for reading instruction at the Tier 1 level. These resources are intended to be a source of information about programs and publications that will help teachers, principals, and district personnel in their choice of materials that can be used by skilled teachers to provide effective instruction and successfully implement an RTI program. Whether or not a program or publication has been listed does not constitute endorsement or lack of endorsement by NRCLD. These resources do not constitute an "approved" or "required" list. Also, many potentially useful programs or publications may not be listed here. We hope that readers will complete careful reviews of available alternatives.

Corrective Reading (SRA/McGraw Hill)
http://www.sra4kids.com

Corrective Reading provides intensive intervention in grades 4–12 for students who are reading one or more years below grade level. This program delivers tightly sequenced, carefully planned lessons that give struggling students the structure and practice necessary to become skilled, fluent readers and better learners.

Guided Reading (Heinemann Press)
http://books.heinemann.com/search/default.aspx

Authors Gay Pinnell and Irene Fountas wrote *Guided Reading* for grade K–3 educators and administrators. The book explains how to create a balanced literacy program based on guided reading and supported by read aloud, shared reading, interactive writing, and other approaches.

Harcourt Reading/Language Arts Program (Harcourt)
http://www.harcourtschool.com/index.html

Harcourt Reading/Language Arts Program is a balanced, comprehensive program that includes oral language, phonological awareness, literature, comprehension, letter-sound knowledge, vocabulary, and writing.

Literacy Place (Scholastic)
http://teacher.scholastic.com/literacyplace/

Literacy Place is a grades K–6 reading and language arts program offering research-based systematic skills development, great literature, and state-of-the-art technology to make every child a successful reader.

Open Court (SRA/McGraw Hill)
http://www.sra4kids.com/

Open Court Reading is a research-based curriculum grounded in systematic, explicit instruction of phonemic awareness, phonics and word knowledge, comprehension skills and strategies, inquiry skills and strategies, and writing and language arts skills and strategies.

Peer-Assisted Learning Strategies (PALS) (Vanderbilt Kennedy Center for Research on Human Development)
http://kc.vanderbilt.edu/pals/

PALS Reading and *PALS Math* enable classroom teachers to accommodate diverse learners and help a large proportion of these students achieve success. *PALS Reading* and *PALS Math* have been approved by the U.S. Department of Education's Program Effectiveness Panel for inclusion in the National Diffusion Network on effective educational practices.

Phonics for Reading (Curriculum Associates)
http://www.curriculumassociates.com/products/detail.asp?topic=T0R&sub=T0R5&title=PhonicsReading&Type=SCH&CustId=734168798103221505223

Phonics for Reading is a research-based program of direct instruction in phonics for grades 1–3. It provides age-neutral content and a format appropriate for remedial students in higher grades as well as word-recognition instruction, story reading, spelling instruction, and independent reading-related activities.

Read Well K-1 (Sopris West)
http://www.readwell.net/overview.asp

Written by Marilyn Sprick, Lisa Howard, and Ann Fidanque, *Read Well* is a research-based reading program that combines systematic phonics, mastery-based learning, and rich content. *Read Well* is published by Sopris West Educational Services.

Signatures Reading Series (Harcourt)
https://jstore.harcourtschool.com/marketplace/index.html

Signatures offers collections of grades K–6 books, phonics components, English as a second language/Title I libraries, integrated language arts components, assessment opportunities, and integrated technology designed to promote literacy and a lifelong love of literature.

Soar to Success (Houghton Mifflin)
http://www.schooldirect.com/store/ProductCatalogController?cmd=Browse&subcmd=LoadDetail&level1Code=8&level2Code=P0041&frontOrBack=F&division=S01&cmain=003399&cfaded=99CCFF

Grounded in research and classroom tested with powerful results, *Soar to Success* is an intervention program targeted for intermediate (grades 3–8) students who are not reading up to their potentials.

Additionally, several web sites are available to help inform educators about evidence-based interventions.

Campbell Collaboration
www.campbellcollaboration.org

The *Campbell Collaboration* (C2) is an international non-profit organization helping people make well-informed decisions about the effects of social, behavioral, and educational interventions. C2 prepares, maintains, and disseminates systematic reviews of intervention studies.

Promising Practices Network
http://www.promisingpractices.net/

The *Promising Practices Network* is dedicated to providing quality evidence-based information about what works to improve the lives of children, youth, and families. This web site features summaries of programs and practices proven to improve outcomes for children. All information on the site has been screened for scientific rigor, relevance, and clarity.

What Works Clearinghouse
http://www.whatworks.ed.gov/

The *What Works Clearinghouse* (WWC) collects, screens, and identifies effectiveness studies of educational interventions (programs, products, practices, and policies), by reviewing the studies that have the strongest designs and reporting on the strengths and weaknesses of those studies and providing what the best scientific evidence has to say.

Specific resources exist for evaluating the appropriateness and adequacy of reading programs (e.g., *A Consumer's Guide to Evaluating a Core Reading Program Grades K–3: A Critical Elements Analysis*, Simmons & Kame'enui, 2003).

Part Two

Tier 2 and Beyond (Secondary Interventions)

Part Two Contents

Background

RTI is conceptualized as a multitiered service-delivery model similar to a public health or community psychology framework of prevention and intervention. In this conceptualization, Tier 2 and beyond represents a critical juncture in the RTI process. In conjunction with the scientifically based instruction at Tier 1, Tier 2 and beyond forms the school's line of defense for reducing the number of students who are low performing or perhaps later referred for disability determination and special education programs. Providing timely and evidence-based instructional strategies to at-risk students can be the difference between those at-risk students successfully returning to the general education classroom or a referral for special education evaluation (Compton, Fuchs, & Fuchs, 2006). In this section, we review the critical features of Tier 2 and beyond, explain two approaches to implementation, and provide resources and activities for schools to use as a guide for implementation and monitoring.

Features
Definition and Features

When a student's school-wide screening or progress monitoring results indicate a deficit in a specific area, an appropriate instructional intervention is implemented and progress within that intervention is monitored. This is Tier 2 and beyond. The Tier 2 and beyond intervention is for those students for whom Tier 1 instruction is insufficient, who are falling behind on benchmark skills, and who require additional instruction to achieve grade-level expectations.

Tier 2 and beyond consists of general education instruction *plus* specialized intervention that has the following features:

Size of instructional group. Tier 2 and beyond instruction is provided in small groups (two to four students).

Mastery requirements of content. Cut scores identified on screening measures and continued growth as demonstrated by routine progress monitoring are indicators of content mastery.

Frequency of progress monitoring. Although recommendations vary, weekly to three times per week monitoring of progress is typical.

Duration of the intervention. Tier 2 and beyond interventions last for nine to 12 weeks and can be repeated as needed.

Frequency with which the intervention is delivered. Tier 2 and beyond provides for three to four intervention sessions per week, each lasting 30 to 60 minutes.

Instructor qualifications. Instruction is conducted by trained and supervised personnel (not the classroom teacher).

Placement in and completion of Tier 2 and beyond interventions can result in one of three possible outcomes (Vaughn, 2003):

1. Successful progress is made in the area of deficit and the student exits Tier 2 and beyond instruction to return to only Tier 1 instruction.
2. Although progress is being made, the student has not progressed enough to warrant leaving and thus remains in Tier 2 and beyond for continuation of the intervention.
3. The rate and amount of progress or the level of support required for the student warrants referral for special education eligibility determination.

Tier 2 and Beyond Within an RTI Model

We distinguish between Tier 2 and beyond interventions that might be part of an SLD determination process and a Tier 2 and beyond model used in providing early intervention for students who are at risk for failure.

In the former case, the Tier 2 and beyond interventions have an assessment role and address the assessment question of how well a student responds to a specific research-based intervention. In this role, if a student is performing at a lower level of achievement or is learning at a significantly slower rate than his or her peer group, RTI is used to determine whether inadequate instruction would account for this discrepancy.

In the latter case, Tier 2 and beyond is considered to be an intervention intended to remediate the student's deficits and promote participation in Tier 1 with general education students. Other researchers have offered a similar view of this latter purpose. Many people think of Tier 2 and beyond interventions as prereferral interventions, or "prereferral writ large" (Kavale, Holdnack, Mostert, & Schmied, 2003), that provide support to struggling students and prevent referral to special education.

Two approaches to structuring Tier 2 and beyond interventions have been described in the research literature: (1) problem-solving and (2) standard treatment or intervention protocol (Fuchs, Mock, Morgan, & Young, 2003). Although the two vary in their focus and implementation, the goal of each is to provide supplemental instruction to students for whom Tier 1 instruction is insufficient. Some schools may incorporate a combination of these two approaches. In some implementations, the two approaches occur sequentially with the standard intervention protocol occurring first.

Problem-Solving Approach (Individually Designed Instructional Package)

Most schools currently have an existing form of a problem-solving team, such as a student instructional team (SIT), student study teams (SST), or building assistance team (BAT). The purpose of these teams is to develop an accommodation or modification plan for the instructional program in the general education classroom to support the targeted student, while simultaneously providing a positive effect on the instructional program for all students. Under an RTI service-delivery system, these teams would adopt a problem-solving approach that is based on data and a continuing system of evaluation. Problems need to be objectively defined, observed, and measured directly in the general education classroom. The data collected are then analyzed, using information to develop hypotheses about the cause of the problem and the appropriate selection of evidence-based strategies to remedy them. As the interventions are implemented, the student's progress is monitored at regular points in time. The team continues to meet to discuss the outcome data and determine whether the intervention is having its desired effect, whether the specific intervention needs to be revised, or whether the student should be considered for further evaluation.

Some researchers say that the research on the problem-solving approach suggests it will be used most effectively when developed and implemented according to following attributes:

- A scientific approach to problem solving
- Interventions designed for an individual student
- A system for continual monitoring/evaluation of intervention
- Collaborative relationships with general education and special education to develop, implement, and monitor the intervention
- Collection of information from a variety of sources, including teachers, parents, and others who best know the child
- Use of curriculum-based measurement (CBM) to assist in problem identification and for continuing progress monitoring and evaluation of the effectiveness of the intervention
- Interventions embedded in the daily classroom routine so the classroom teacher takes responsibility for implementation

(adapted from Kovaleski, 2003)

At this point, the evidence supporting these attributes is insufficient. Whereas problem solving has been shown to be a scientifically validated approach to help children with behavioral problems, the evidence is insufficient to show effectiveness for children with severe reading and math problems.

Standard-Protocol Approach

Standardized protocols are interventions that researchers have validated as effective, meaning that the experimental applications were completed with the proper experimental and control groups to demonstrate that the interventions work. School staff are expected to implement specific research-based interventions to address the student's difficulties. These interventions are not accommodations to existing curriculum; rather, they are instructional programs targeted to remediate a specific skill. Research for standard protocol interventions should specify the conditions under which the intervention has proven successful, including the number of minutes per day, the number of days per week, and the number of weeks (typically eight to 12) required for instruction with the intervention. Information about each research-based intervention also should describe the specific skills addressed, where the instruction should be provided, who should provide the instruction, and the materials used for instruction and assessing progress (adapted from Fuchs et al., 2003).

Many standardized protocols for reading have been developed. Some are listed in the resources section at the end of this chapter. Some of the key characteristics in a program of Tier 2 and beyond intervention include the following:

- *Focus.* The focus is on students identified with marked reading difficulties and whose response to Tier 1 efforts places them at risk for reading problems. Instruction involves specialized, scientifically based reading programs that emphasize the critical elements of beginning reading.
- *Grouping.* Instruction is provided in homogeneous small groups (teacher-to-student ratios of one-to-three, one-to-four, or one-to-five).
- *Time.* A recommended minimum of 30 minutes of instruction per day in a small group in addition to core reading instruction, generally provided over a period of eight to 12 weeks after which a determination is made about whether the student needs to continue in the program,

move to more intense levels of intervention, or leave the program to receive Tier 1 instruction only.

- *Assessment.* Students in Tier 2 and beyond should have their progress monitored on a weekly basis on the targeted skill to ensure adequate progress and learning. Progress monitoring on Tier 1 skills should continue to be monitored to determine whether the intervention is resulting in improvements in reading.
- *Interventionist.* Personnel are determined by the school, but possible options are the classroom teacher, a specialized reading teacher, or an external interventionist, such as a tutor.
- *Setting.* Instruction is provided in an appropriate setting—either within or outside of the classroom—designated by the school.

(Vaughn, 2003)

Changes

Changing Structures, Roles, and Responsibilities

Tier 2 and beyond interventions will require significant changes to many staff roles and responsibilities and to school structures. Specifically, schools will need to do the following:

- Develop or adopt an aligned system of progress monitoring and screening measures to identify the population of students as at risk or not making adequate progress in the general education curriculum and therefore eligible for Tier 2 and beyond interventions.
- Identify scientifically based interventions across the academic domains that can be implemented as intended.
- Adopt a standardized protocol (i.e., reading intervention curriculum) that is scientifically based.
- Adopt detailed procedures for consistent implementation of a standard treatment protocol or problem-solving framework for tiered intervention (Fuchs et al., 2003).
- Provide teacher and staff development to ensure sufficient staff to provide small-group instruction.
- Adopt a system for continued progress monitoring and review of results along with set criteria for exit, continuation in Tier 2 and beyond, or consideration for movement to special education levels.

The roles and responsibilities of various staff members will depend on the methods adopted by a school or district and the available staff. Table 3.2 provides a list of roles and responsibilities in a Tier 2 and beyond intervention model.

Table 3.2. Roles and Responsibilities in a Tier 2 and Beyond Intervention Model

General Education*	Specialist/Support Staff*	Administration*
Implement Tier 1 level instruction with fidelity Conduct progress monitoring of all students Evaluate and identify students as at risk and eligible for Tier 2 and beyond Depending on protocol adopted by school, provide Tier 2 and beyond interventions Continue progress monitoring within Tier 1 of students in Tier 2 and beyond for comparison of growth with supplementary instruction and when supplementary instruction is discontinued If other interventionist provides Tier 2 and beyond instruction, collaborate with that staff member on instructional methods used in Tier 1, monitoring progress and incorporating some of the intervention in the classroom to provide continued support for targeted students	Provide Tier 2 and beyond instruction to small groups Monitor progress of students within Tier 2 and beyond and analyze results for consideration of continuation of intervention, exit, or movement to increasingly intense levels of instruction Collaborate with general education teacher to understand the Tier 1 instructional program and provide instructional/supplemental activities that can be embedded within Tier 1 to provide additional support to targeted students Promote either a standard treatment protocol or problem-solving model consistently	Provide resources for Tier 2 and beyond, including appropriate reading intervention program, trained staff, system for progress monitoring in both Tier 1 and Tier 2 and beyond, and time for staff collaboration to make decisions about movement of students within the tiers Lead the problem-solving model approach

*General Education includes the general education teacher.
*Specialist/Support Staff includes the special education teacher, reading or learning specialists, related services personnel, paraprofessionals.
*Administration includes building principals and assistants as well as curriculum or assessment specialists at building or district levels.

Activities/Tools

Methods and Procedures

The following activities (*Activity 3.4: Essential Task List for Tier 2 and Beyond*, *Activity 3.5: Standards for Judging High-Quality Tier 2 and Beyond Interventions*, and *Activity 3.6: Internal Resources Needed to Implement Tier 2 and Beyond*) provide ways for your organization to think about implementing Tier 2 and beyond in a multitiered RTI service-delivery model.

Activity 3.4

Essential Task List for Tier 2 and Beyond

Directions: In the second column, write the name of the individual or team who will assume responsibility for the task identified in the first column. In the third column, write the deadline for or status of the task. Complete each task identified.

Task	Responsible Individual/Team	Timeline/Status
Identify structure or make-up of problem-solving team.		
Select resources, curricula, and interventions for use with standard protocol approach in reading (decoding and comprehension), math, and writing.		
Create and continue the development of resources on evidence-based instructional strategies to support identified students.		
Schedule time for general and special education teachers to collaborate, observe, implement, and evaluate strategies.		
Develop decision rules (cut scores, exit criteria) for remaining in or moving out of Tier 2 and beyond (responsiveness vs. unresponsiveness).		
Implement a system of data collection and progress monitoring for Tier 2 and beyond (see Section 2: Progress Monitoring for more information) to determine level and growth rate.		
Provide professional development opportunities for problem solving and protocol approaches.		
Ensure time is scheduled and process is established for teams to meet and review student needs.		
Determine level of intensity of instruction for Tier 2 and beyond (how often, how long, size of instructional group).		
Identify measures and procedures to document fidelity of implentation of interventions.		

Activity 3.5

Standards for Judging High-Quality Tier 2 and Beyond Interventions

Directions: Read each of the standards, which have been identified as mechanisms for judging high-quality Tier 2 and beyond interventions. The checklist is formatted so that you can indicate current and planned implementation.

• If the practice has been implemented, indicate that with a checkmark (√).

• If the practice is being developed, rank its priority: 1 = highest priority through 3 = lowest priority.

Standard	Status	
	In Place (√)	Priority (1-2-3)
Tier 2 and beyond interventions are research-based.		
Tier 2 and beyond interventions differ from the curricular materials used in Tier 1 instruction.		
Tier 2 and beyond interventions begin as soon as possible after identification or selection of those not responding adequately to Tier 1.		
In addition to Tier 1 instruction, students receiving Tier 2 and beyond interventions do so for at least 30 minutes each day for nine to 12 weeks.		
Size of instructional group is no more than a one-to-five teacher-to-student ratio.		
Decisions about students repeating or continuing the Tier 2 and beyond intervention cycle are based on progress-monitoring data.		
Appropriate instructional settings are designated by the school and include areas within the regular classroom, pod areas, separate classrooms, etc.		
Students may have more than one Tier 2 and beyond intervention cycle.		

(Mellard & McKnight, 2006; NRCLD, 2005)

Activity 3.6

Internal Resources Needed to Implement Tier 2 and Beyond

Directions: In *Activity 3.5: Standards to Judge High-Quality Tier 2 and Beyond Interventions,* you identified which Tier 2 and beyond intervention standards had been implemented in your organization and which standards still need attention. In the space below, list the resources (material, curriculum, space, equipment, and people) your organization will need to effectively implement the standards.

Material/Curriculum	Space/Equipment	People

Resources for Tier 2 and Beyond

We have compiled a brief (but not exhaustive) list of materials available to help inform educators about reading, mathematics, and writing resources that may be appropriate for instruction at the Tier 2 and beyond level. NRCLD does not endorse these products. These resources are intended to be a source of information about programs and publications that will help teachers, principals, and district personnel in their choice of materials that can be used by skilled teachers to provide effective instruction and successfully implement an RTI program. Whether or not a program or publication has been listed does not constitute endorsement or lack of endorsement by NRCLD. These resources do not constitute an "approved" or "required" list. Also, many potentially useful programs or publications may not be listed here. We hope that readers will complete careful reviews of available alternatives.

Reading

Accelerated Reader (AR)
http://www.readingonline.org/critical/topping/rolarD.html

Accelerated Reader, developed by Advantage Learning Systems as a computer software program, is a learning information system that enables free-standing computer-assisted assessment of student comprehension of "real" books. The materials are available from various vendors.

Benchmark Word Detectives Program
http://www.benchmarkschool.org/b_available_programs.htm

This program provides students who are bright, struggling readers and writers the tools and strategies they need to become lifelong learners, thinkers, and problem solvers.

Center for Academic and Reading Skills: Effective Early Reading Intervention (EERI)
http://cars.uth.tmc.edu/projects/att/

The goal of this project at the University of Texas-Houston Health Science Center, in collaboration with Region XIII Education Service Center, is to recognize schools that have effective second-grade early reading intervention programs.

Center for Academic and Reading Skills
http://cars.uth.tmc.edu/projects/tpri/tpri_presentation_1.shtml

This site provides a copy of a PowerPoint presentation by Marguerite Held, "After the assessment: Now what?"

Multicultural Reading and Thinking (MCRAT)
http://www.ed.gov/pubs/EPTW/eptw10/eptw10k.html

MCRAT is a development process designed to help teachers infuse higher-order thinking skills and multicultural concepts into existing curriculum for all students and to measure progress through students' writing.

Pearson/Scott Foresman Early Reading Intervention
http://www.scottforesmancatalog.com/program_listing.cfm?site_id=741&discipline_id=819

Based on Project OPTIMIZE, this program was designed for at-risk students in kindergarten and first grade who need intensive intervention in phonological awareness, letter names, letter sounds, word reading, spelling, and simple-sentence reading.

Peer-Assisted Learning Strategies (PALS) (Vanderbilt Kennedy Center for Research on Human Development)
http://kc.vanderbilt.edu/pals/

PALS Reading and *PALS Math* enable classroom teachers to accommodate diverse learners and help a large proportion of these students achieve success. *PALS Reading* and *PALS Math* have been approved by the U.S. Department of Education's Program Effectiveness Panel for inclusion in the National Diffusion Network on effective educational practices.

Phonological Awareness and Literacy Screening (PALS)
http://pals.virginia.edu/

PALS assesses young children's knowledge of several important literacy fundamentals that are predictive of future reading success.

Reading Partners Group at Washington Research Institute (WIR)
http://www.wri-edu.org/partners

The *Reading Partners Group* is a research team dedicated to the development and dissemination of evidence-based reading instruction.

Reading Recovery® Council of North America
http://www.readingrecovery.org/sections/reading/index.asp

Reading Recovery provides a wide variety of programs and services, including publications, annual conferences, advocacy, technical assistance, and special institutes, which strengthen the implementation of *Reading Recovery* and provide opportunities for *Reading Recovery* professionals to collaborate with early literacy advocates and other education professionals.

Reading Rockets® Launching Young Readers.
http://www.readingrockets.org

Reading Rockets is a national multimedia project offering information and resources about how young children learn to read, why so many struggle, and how caring adults can help.

Scholastic/Read 180
http://teacher.scholastic.com/products/read180/

This is an intensive reading intervention program that helps educators confront the problem of adolescent illiteracy on multiple fronts, using technology, print, and professional development.

Spell Read Phonological Auditory Training (P.A.T.®)
http://www.spellread.com/a/uploads/spellread_pat_overview.pdf

This is a research-based, student-centered, results-driven reading and spelling skill development program.

Strategic Instruction Model (SIM)
http://www.kucrl.org/sim/index.html

SIM, developed at the University of Kansas Center for Research on Learning, is an integrated model to address many of the needs of diverse learners, while helping teachers make decisions about what is of greatest importance, what can help students learn, and how to teach them well.

Texas Primary Reading Inventory
http://www.tpri.org/Teacher%5FInformation/how_to_use_results.asp

TPRI is a valid and reliable assessment tool that provides a comprehensive picture of a student's reading and language arts development. This site offers a slide presentation, "The Differentiated Instruction Difference," about how to use results as resources to plan interventions.

Mathematics

Bell, N., & Tuley, K. (2003). Imagery: The sensory-cognitive connection for math
The article is reprinted with permission from Lindamood-Bell Learning Processes® on LDOnline at http://www.ldonline.org/article.php?max=20&id=413&loc=70

This article deals with mathematics as cognitive process-thinking that requires the dual coding of imagery and language, with imaging as the basis for thinking with numbers and conceptualizing their functions and logic.

Fuchs, L.S., Compton, D.L., Fuchs, D., Paulsen, K., Bryant, J.D., & Hamlett, C.L. (2005). The prevention, identification, and cognitive determinants of math difficulty.
Journal of Educational Psychology, 97, 493-513

In this randomized, controlled field trial, the authors tested the efficacy of a 20-week, small-group preventive tutoring protocol at first grade for use in secondary prevention and documented reliable and important effects on computation, concepts/applications, and story problems. To obtain a manual, with tutor scripts and materials, contact flora.murray@vanderbilt.edu.

Fuchs, L.S., & Fuchs, D. (in press). Progress monitoring within a multi-tiered prevention system: Best practices.
In Grimes, J., & Thomas, A. (Eds.), *Best practices in School Psychology (Vol. 5).* Bethesda, MD: National Association of School Psychologists

This chapter summarizes research on curriculum-based measurement (CBM) in reading and math. As a validated progress-monitoring tool, CBM is an essential tool for screening, designing programs, and indexing student response within an RTI approach to SLD prevention and identification. For additional information, contact flora.murray@vanderbilt.edu.

Fuchs, L.S., Fuchs, D., & Courey, S.J. (2005). Curriculum-based measurement of mathematics competence: From computation to concepts and applications to real-life problem solving.
Assessment for Effective Instruction, 30(2), 33-46

This paper summarizes research on curriculum-based measurement (CBM) in math. As a validated progress-monitoring tool, CBM is an essential tool for screening, designing programs, and indexing student response within an RTI approach to SLD prevention and identification. For additional information, contact flora.murray@vanderbilt.edu.

Fuchs, L.S., Fuchs, D., Finelli, R., Courey, S.J., & Hamlett, C.L. (2004). Expanding schema-based transfer instruction to help third graders solve real-life mathematical problems
American Educational Research Journal, 41, 419-445

This study is one in a series of randomized, controlled field trials documenting the strong, positive effects of a third-grade instructional program designed to enhance mathematical problem solving. The program, called "Hot Math," has two components: one to supplement the core mathematics program at the primary prevention level, and the other for use as a secondary prevention small-group tutoring program. For information about how to obtain scripted manuals and materials (one set of manuals and materials for primary prevention; another for secondary prevention), contact flora.murray@vanderbilt.edu.

Fuchs, L.S., Fuchs, D., Hamlett, C.L., Phillips, N.B., Karns, K., & Dutka, S. (1997). Enhancing students' helping behavior during peer-mediated instruction with conceptual mathematical explanations
Elementary School Journal, 97, 223-250

This study is one in a series of randomized, controlled field trials documenting the strong, positive effects of Peer-Assisted Learning Strategies (PALS) in second through sixth grades, designed to enhance mathematical outcomes. PALS is designed to supplement the core mathematics program at the primary prevention level. With PALS, all students in a class are paired and taught how to work productively about highly structured activities. For information on how to obtain a scripted manual and materials, contact flora.murray@vanderbilt.edu.

Fuchs, L.S., Fuchs, D., & Karns, K. (2001). Enhancing kindergarten children's mathematical development: Effects of peer-assisted learning strategies
Elementary School Journal, 101, 495-510

This randomized, controlled field trial documents strong, positive effects for Peer-Assisted Learning Strategies (PALS) in kindergarten for enhancing mathematical outcomes. PALS is designed to supplement the core mathematics program at the primary prevention level. With PALS, all students in a class are paired and taught how to work productively on highly structured activities. For information about how to obtain a scripted manual and materials, contact flora.murray@vanderbilt.edu.

Fuchs, L.S., Fuchs, D., Yazdian, L., & Powell, S.R. (2002). Enhancing first-grade children's mathematical development with peer-assisted learning strategies
School Psychology Review, 31, 569-584

This randomized, controlled field trial documents strong, positive effects for Peer-Assisted Learning Strategies (PALS) in first grade for enhancing mathematical outcomes. PALS is designed to supplement the core mathematics program at the primary prevention level. With PALS, all students in a class are paired and taught how to work productively on highly structured activities. For information about how to obtain a scripted manual and materials, contact flora.murray@vanderbilt.edu.

Garnett, K. (1998). Math learning disabilities.
Division for Learning Disabilities Journal of CEC, November 1998. The article is reprinted with permission on LDOnline at http://www.ldonline.org/ld_indepth/math_skills/garnett.html

This article breaks math difficulties down into different types, explains why common teaching practices can perpetuate or exacerbate these problems, and provides ways to structure learning experiences to overcome difficulties in math.

Geary, D.C. (1999). Mathematical disabilities: What we know and don't know.
The article is available on LDOnline at http://www.ldonline.org/article.php?max=20&id=538&loc=70

This article discusses some of the basic area deficits that contribute to learning disabilities in mathematics (MD) and how many children have MD.

Gersten, R., & Chard, D. (1999). Number sense: Rethinking arithmetic instruction for students with mathematical disabilities.
The Journal of Special Education, 44, 18–28. Reprinted with permission from PRO-ED, Inc. on LDOnline at http://www.ldonline.org/article.php?max=20&id=537&loc=70

This article discusses the concept of number sense, an analog as important to mathematics learning as phonemic awareness has been to the reading research field.

Hasselbring, T.S., Lott, A.C., & Zydney, J.M. (2006). Technology-supported math instruction for students with disabilities: Two decades of research and development
The article is available on LDOnline at http://www.ldonline.org/article.php?max=20&id=1981&loc=70

The article provides a brief overview of the three basic types of mathematical knowledge required for the development of mathematical literacy and competence: declarative, procedural, and conceptual knowledge.

Jones, E.D., Wilson, R., & Bhojwani, S. (1997). Mathematics instruction for secondary students with learning disabilities
Journal of Learning Disabilities, 30(2), 151–163. The article is reprinted with permission on LDOnline at http://www.ldonline.org/ld_indepth/math_skills/math_jld.html

This article discusses techniques demonstrated to help with secondary students who have learning disabilities in mathematics.

Lock, R.H. (1996). Adapting mathematics instruction in the general education classroom for students with learning disabilities
LD Forum: Council for Learning Disabilities, Winter 1996. The article is reprinted with permission on LDOnline at http://www.ldonline.org/ld_indepth/math_skills/adapt_cld.html

This article provides information about how to adapt and modify mathematics instruction to promote success and understanding in the areas of mathematical readiness, computation, and problem-solving for students with math disabilities.

Reed, M.K. (1995). Making mathematical connections in the early grades
Posted by ERIC Clearinghouse for Science Mathematics and Environmental Education. The article is reprinted with permission on LDOnline at http://www.ldonline.org/article.php?max=20&id=736&loc=70

The article provides samples of activities for use in the early grades to connect mathematics to other subjects.

Research Connections (2002, Fall). Strengthening the third "R": Helping students with disabilities achieve in mathematics
Posted by ERIC Clearing House on Disabilities and Gifted Education. The article is reprinted with permission on LDOnline at http://www.ldonline.org/article.php?max=20&id=685&loc=70

This article addresses recognition of the need for math knowledge—the 1997 Amendments to the Individuals with Disabilities Education Act raised the bar on what students with disabilities are expected to learn.

Rivera, D.P. (1996). Using cooperative learning to teach mathematics to students with learning disabilities.
LD Forum: Council for Learning Disabilities, Spring 1996. The article is reprinted with permission on LDOnline at http://www.ldonline.org/ld_indepth/math_skills/coopmath.html

This article discusses the components of cooperative learning and presents an example of how cooperative learning can be used to teach mathematics skills.

Stein, M., Silbert, J., & Carnine, D. (1997). Designing effective mathematics instruction: A direct instruction approach
Upper Saddle River, NJ: Merrill.

This math methods book provides practical procedures for increasing student success in math by emphasizing specific, proven techniques for teaching major math and needed prerequisite skills, as well as diagnosing and correcting error patterns.

Wright, C.C. (1996). Learning disabilities in mathematics
Reprinted with permission from the National Center for Learning Disabilities Inc. on LDOnline at http://www.ldonline.org/article.php?max=20&id=66&loc=70

This article addresses the combination of difficulties associated with learning disabilities in math, which may include language processing problems, visual spatial confusion, memory and sequence difficulties, or unusually high anxiety.

Writing

Access Center (2006)
http://www.k8accesscenter.org/

The Access Center is a national technical assistance center funded by the U.S. Department of Education's Office of Special Education Programs with a mission to improve educational outcomes for elementary and middle school students with disabilities.

Access to General Curriculum and Universal Design for Learning: Problem Solving Approach—CAST Teaching Every Student (2006)
http://www.cast.org/teachingeverystudent/tools/

CAST is a nonprofit organization that works to expand learning opportunities for all individuals, especially those with disabilities, through the research and development of innovative, technology-based educational resources and strategies.

Berninger, V., Abbott, R., Whitaker, D., Sylvester, L., & Nolen, S. (1995). Integrating low-level skills and high-level skills in treatment protocols for writing disabilities
Learning Disability Quarterly, 18, 293-309.

This article presents research from tutorial instruction in handwriting automaticity, spelling strategies, and the composing process (plan, write, review, revise) for 24 students who had just completed third grade. Students who received extra practice in composing, as well as orthographic and phonological coding, improved at a faster rate (verbal IQ did not predict rate of improvement).

CASL Paper
http://kc.vanderbilt.edu/casl/srsd.html

Harris, K., Graham, S., & Mason, L. (2006). Self-regulated strategy development in writing: Story and opinion essay writing for students with disabilities or severe difficulties in the early elementary grades. [CASL Paper]. Center for Accelerating Student Learning (CASL) is designed to accelerate learning for students with disabilities or severe difficulties in reading, writing, or math in the early grades and thereby provide a solid foundation for strong achievement in the intermediate grades and beyond.

Graham, S., & Harris, K. (2005). Writing better: Effective strategies for teaching students with learning difficulties
Baltimore, MD: Brookes

This book presents research-validated planning, revising, editing, and self-regulation strategies for improving the writing of elementary-grade students who struggle with writing. Writing strategies cover a broad range of genres, including stories, personal narrative, explanation, cause/effect, persuasive, and informative writing.

Graham, S., & Perrin, D. (2006). Writing next: Effective strategies to improve writing of adolescents in middle and high school
Washington D.C.: Alliance for Excellence in Education

This companion report to Reading Next identifies instructional procedures that are effective for teaching writing to adolescents in fourth through 12th grades. Special attention is directed to identifying which instructional strategies improve the overall quality of struggling students' writing.

MacArthur, C.A. (2006). The effects of new technologies on writing and writing processes
In C. MacArthur, S. Graham, & J. Fitzgerald (Eds.), Handbook of Writing Research. (pp. 248-262). New York: Guilford.

This chapter examines how technology enhances students' writing. This includes the use of word processing, computer support for planning and revising, assistive technology (spelling checkers, speech synthesis, word prediction, and speech recognition), hypermedia, and computer–mediated communication.

Mason, L.H., Hickey Snyder, K., Jones, D.P., & Kedem, Y. (2006). TWA + PLANS strategies for expository reading and writing: Effects for nine 4th-grade students
Exceptional Children, 73, 69-90

This article presents research on the benefits of expository comprehension and informative writing instruction for fourth-grade students with disabilities, without disabilities, and who were low-achieving. Student performance, as measured by oral and written retells, improved and was maintained, and the students reported liking the instructional strategies.

Multicultural Reading and Thinking (MCRAT)
http://www.ed.gov/pubs/EPTW/eptw10/eptw10k.html

MCRAT is a development process designed to help teachers infuse higher-order thinking skills and multicultural concepts into existing curriculum for all students and to measure progress through students' writing.

Saddler, B., & Graham, S. (2005). The effects of peer-assisted sentence-combining instruction on the writing performance of more and less skilled young writers
Journal of Educational Psychology, 97, 43-54.

This article presents research on the benefits of sentence-construction instruction designed to improve skills for more- and less-skilled fourth-grade writers as compared to peers receiving grammar instruction. Sentence-construction instruction resulted in more adeptness at combining simple sentences into complex sentences, as well as improved story writing and revising skills.

Strategic Instruction Model (SIM)
http://www.kucrl.org/sim/index.html

SIM, developed at the University of Kansas Center for Research on Learning, is an integrated model to address many of the needs of diverse learners, while helping teachers make decisions about what is of greatest importance, what can help students learn, and how to teach them well.

What Works—Enhancing the Process of Writing Through Technology: Integrating Research and Best Practice and Best Practices for Effective Writing Instruction—enGauge® Resources (2006)
http://www.ncrel.org/engauge/resource/techno/whatworks/sec2.htm

This site is designed to help districts and schools plan and evaluate the system-wide use of educational technology.

Part Three
Special Education (Tertiary Interventions)

Part Three Contents

Schools may choose to establish any number of tiers in their service-delivery models. For example, in research on RTI implementation conducted by the National Research Center on Learning Disabilities (NRCLD), two schools reported using a five-tier model in which the fifth tier was not special education. In this illustration of RTI, we are regarding special education services as the final tier of service delivery. These interventions are considered the most intensive available.

Background

"Recent research has suggested the most productive model for improving outcomes for students with learning disabilities is one in which students' instructional gaps are identified, progress relative to the gaps is monitored, and explicit and intensive instruction provided" (Vaughn & Linan-Thompson, 2003, p. 145). A model requiring this level of intensity and individualization is typically best provided in special education.

In many schools that are organized into multitiered service-delivery systems, the tertiary tier of service may be synonymous with special education. This tertiary level of support and intervention represents an integral step in a multitiered model such as RTI, rather than a last stop or destination for a student who is experiencing school or academic problems. Special education programming and placement become necessary for the student to benefit from his or her educational experiences. As such, special education as the tertiary tier of service is intended to deliver the most intensive, scientifically based instructional programs to address individual student needs. Ideally, this tier is structured to provide flexible service, systematically permitting a student to move in and out of tertiary support as his or her needs change relative to the demands of the general education curriculum (Fuchs & Fuchs, 2006).

Features
Definition and Features

Special Education Within an RTI Model

In some RTI models, special education services are provided to students with intensive needs who are not adequately responding to high-quality interventions in Tier 1 and Tier 2 and beyond. Decisions about students' specific instructional needs are based in part on a student's lack of responsiveness to effective instruction. Eligibility decisions also are informed by individualized, comprehensive evaluations to determine the specific nature and presence of a learning disability. Special education is a data-based, individualized, iterative intervention. Special education can be defined generally as specially designed instruction to meet the unique needs of students with disabilities. To achieve academic success, students with SLD require intensive, iterative (recursive), explicit scientifically based instruction that is monitored on a continuing basis (Learning Disabilities Roundtable, 2002).

Students with SLD require a continuum of intervention options through general and special education across all grades and ages. The provision of these services can occur through accommodations, modifications, intense instruction, and remediation. Whereas accommodations and modifications are generally provided to help the student with SLD achieve expected outcomes in the general education setting, remediation and the development of compensatory strategies are the focus of special education interventions.

A key distinction between general and special education is that special education takes an individualized approach to instruction (Fuchs & Fuchs, 1995). Interventions in special education must be designed to meet the specific learning and behavioral needs of the student, implemented on a timely basis, provided by a highly qualified teacher or specialist, and monitored to determine progress and achievement of desired outcomes.

In summary, the following are critical features of special education as tertiary intervention in an RTI model:

Size of instructional group. Special education instruction is provided to individual students or small groups.

Mastery requirements of content. Special education programs, strategies, and procedures are designed and employed to supplement, enhance, and support Tier 1 and Tier 2 and beyond instruction by remediation of the relevant area and development of compensatory strategies. Mastery is relative to the student's functioning and determined by individualized education program (IEP) goal setting and through results of comprehensive evaluation.

Frequency of progress monitoring. Continuous progress monitoring informs the teaching process.

Duration of the intervention. Special education instruction likely will be considerably longer than the 10 to 12 weeks of supplemental instruction delivered in Tier 2 and beyond.

Frequency with which the intervention is delivered. The frequency of special education instruction depends upon student need.

Instructor qualifications. Special education teachers deliver the instruction.

Exit criteria. Exit criteria are specified and monitored so that placement is flexible.

Specific forms of special education instruction that have been found to be most effective in teaching students with learning disabilities combine direct instruction with strategy instruction (Swanson, 1999). Swanson (1999) identified the main features of this model:

1. Control of task difficulty
2. Small-group instruction
3. Directed questioning and response
4. Sequencing – breaking down the task
5. Drill-repetition-practice
6. Segmentation
7. Use of technology
8. Teacher-modeled problem solving
9. Strategy cues

Of these features, the first three had the most influence on student achievement. Please see the

National Center for Learning Disabilities web site (http://www.ncld.org/content/view/526/506/) for the complete review of instructional approaches most effective for students with learning disabilities.

The instruction and progress monitoring provided in Tier 1 and Tier 2 and beyond are an integral part of informing the intervention design and delivery within special education. The progress-monitoring results collected in Tier 1 and Tier 2 and beyond can help frame concerns about a student's progress. Special educators and related service providers will have thorough knowledge of the instruction and interventions implemented to date and can use that information to design interventions relevant to the student's learning needs. Additionally, general educators will be informed of the types of supports required in the general education classroom as students with SLD receive accommodations, modifications, and remediation specifically designed for their individual needs.

Changes
Changing Structures, Roles, and Responsibilities

Changes are needed in special education. If special education is going to lead to beneficial outcomes for the students with greatest difficulties, then teachers will need to be prepared to provide the most intensive, powerful interventions. Teachers, both entry-level and experienced, will have to receive academic preparation in these methods, which will require that college and university educators are well-versed and able to disseminate information about appropriate instruction and curriculum. Special education will require significant changes to many staff roles and responsibilities and to school structures.

- General and special education must be coordinated as part of a coherent system, which is held accountable for the educational outcomes of students with SLD.
- School staff (general education, special education, administration, and related service providers) work collaboratively in planning and delivering interventions.
- A seamless system occurs when there is alignment of principles, services, assessments, preservice training, and professional development.

(Learning Disabilities Roundtable, 2002)

The roles and responsibilities of various staff members will depend on the methods adopted by a school or district and the available staff. Table 3.3 describes roles and responsibilities in a special education intervention model.

Even with general education and special education working together to ensure a seamless system of high-quality services, the ever-present question remains: What is in the best interests for the student whose response to Tier 1, Tier 2 and beyond, and special education instruction is very limited?

Does that student with such a low response receive tertiary intervention/special education instruction indefinitely? Should that student be returned to the more inclusive general education classroom to receive Tier 1 instruction with some supplemental special education instruction?

We do not have an answer to this question. The literature (Bender, 2002; Tomlinson, 1999) suggests that by differentiating instruction, *all* students can benefit from instruction. IDEA 2004 specifies that schools must comply with providing a free appropriate public education (FAPE), wherein the school provides special education and related services at no cost to the child or her or his parents. We suggest that at a minimum, schools put in place procedures to document instruction and adequately monitor individual student progress in special education. For those students who are not as responsive as desired, one must carefully consider all of the options available, including changes in targeted outcomes and alternative placements that could provide more intense interventions.

Table 3.3. Special Education Changing Roles

General Education*	Specialist/Support Staff*	Administration*
Implement Tier 1 level instruction with fidelity Conduct progress monitoring of all students, including those in special education Depending on a student's IEP, provide appropriate accommodations or modifications for students in special education	Provide specially designed instruction to individuals or small groups Provide consultation regarding behavioral and instructional problems Provide expertise and guidance to parents, educators, and administrative faculty as members of the school-based support team Monitor progress of students within special education and analyze results for consideration of continuation of intervention, exit, or changes in intervention Collaborate with general education teacher to develop appropriate accommodations/ modifications that can be embedded within Tier 1 to provide additional support to targeted students	Develop and oversee school-based instructional support team efforts Provide a supportive school environment that encourages collaboration Provide continuing, high-quality professional development to all instructional and support personnel Ensure adherence to timelines and cost controls Provide caseloads and schedules that facilitate individualized instruction, documentation of response to instruction, and collaboration among general and special educators, related services, and support personnel

* General Education includes the general education teacher
* Specialist/Support Staff includes the special education teacher, reading or learning specialists, related services personnel, paraprofessionals
*Administration includes building principals and assistants as well as curriculum or assessment specialists at building or district levels

Activities/Tools

Methods and Procedures

The following activities (*Activity 3.7: Essential Task List for Special Education*, *Activity 3.8: Standards for Judging High-Quality Special Education*, and *Activity 3.9: Internal Resources Needed to Implement Special Education*) provide ways for your organization to think about implementing special education in a multitiered RTI service-delivery model.

Activity 3.7

Essential Task List for Special Education

Directions: In the second column, write the name of the individual or team who will assume responsibility for the task identified in the first column. In the third column, write the deadline for or status of the task. Complete each task identified.

Task	Responsible Individual/Team	Timeline/Status
Identify the structure or make-up of problem-solving team.		
Select resources, curricula, and interventions for use for certain learning disabilities.		
Create and continue the development, individualization, and intensity of interventions to support specific student needs (how often, how long).		
Develop a process for general and special education teachers to discuss student data, concerns, and needs.		
Schedule time for collaboration among general and special education teachers.		
Develop ways to work as a team to deliver a comprehensive program of accommodations, modifications, or remediation to the targeted student.		
Develop decision rules (cut scores, exit criteria) for students remaining in or moving out of special education.		
Implement a system of data-collection and progress monitoring for special education to determine level and growth rate (see Section 2: Progress Monitoring for more information).		
Provide professional development opportunities for interventions with demonstrated effectiveness for students with SLD.		
Identify measures and procedures to document fidelity of implementation of interventions.		
Develop a team of experts who use data to determine whether and when changes in individual student instruction is needed.		
Identify a team of experts who know which instruments and curriculum options are most likely to result in student improved outcomes.		

Activity 3.8

Standards for Judging High-Quality Special Education

Directions: Read each of the standards, which have been identified as mechanisms for judging high-quality special education interventions. The checklist is formatted so that you can indicate current and planned implementation.

• If the practice has been implemented, indicate that with a checkmark (√).

• If the practice is being developed, rank its priority: 1 = highest priority through 3 = lowest priority.

Standard	Status	
	In Place (√)	Priority (1-2-3)
Special education interventions are based on research for which citations can be provided.		
In addition to Tier 1 instruction, students in special education meet for a minimum of two 30-minute sessions each day for at least nine to 12 weeks.		
At least one special education intervention cycle occurs per semester.		
Size of instructional group is no more than a one-to-three teacher-to-student ratio.		
Decisions about students repeating or continuing the special education intervention cycle are based on progress-monitoring data and achievement of individualized education program (IEP) objectives.		
Students may exit from special education intervention during the middle of the school year only if they demonstrate grade-level performance on specified benchmarks or progress measures.		
A student who has received previous special education instruction at the tertiary tier level and has exited may re-enter special education as needed.		
Interventions in special education employ a combination of direct instruction and compensatory strategy instruction designed to remediate a student's targeted area of deficit.		

(Mellard & McKnight, 2006; NRCLD, 2005)

Activity 3.9

Internal Resources Needed to Implement Special Education

Directions: In *Activity 3.8: Standards to Judge High-Quality Special Education*, you identified which special education intervention standards had been implemented in your organization and which standards still need attention. In the space below, list the resources (material, curriculum, space, equipment, and people) your organization will need to effectively implement the standards.

Material/Curriculum	Space/Equipment	People

Resources

Resources for Special Education

We have compiled a brief (but not exhaustive) list of materials available to help inform educators at the special education level. NRCLD does not endorse these products. These resources are intended to be a source of information about programs and publications that will help teachers, principals, and district personnel choose materials that can be used by skilled teachers to provide effective instruction and successfully implement an RTI program. Whether or not a program or publication has been listed does not constitute endorsement or lack of endorsement by NRCLD. These resources do not constitute an "approved" or "required" list. Also, many potentially useful programs or publications may not be listed here.We hope that readers will complete careful reviews of available alternatives.

Direct Instruction (SRA/McGraw Hill)
www.sra4kids.com

SRA *Direct Instruction* Reading, Language Arts, and Math programs were designed to positively change the course of a student's life. The company says every aspect of these programs has been developed, tested, and refined to ensure that it helps students learn effectively.

Early Interventions in Reading: Proactive (SRA/McGraw Hill)
www.sra4kids.com

Early Interventions in Reading (EIR) is a program heavily correlated with the Open Court Reading system teaching children to identify the 42 phonemic statements presented in the Open Court reading system. *Proactive Reading* has been demonstrated through multiple research studies to be a highly effective intervention, especially for students who experience difficulty in learning to read. The curriculum is published under the name *SRA's Early Interventions in Reading*.

Guided Reading (Heinemann Press)
http://books.heinemann.com/search/default.aspx

Authors Gay Pinnell and Irene Fountas wrote *Guided Reading* for grade K-3 educators and administrators. The book explains how to create a balanced literacy program based on guided reading and supported by read aloud, shared reading, interactive writing, and other approaches.

Intensive Phonological Awareness Program (Schuele & Dayton, 2000)
http://wvde.state.wv.us/reading/phonological.html

The *Intensive Phonological Awareness Program* is a West Virginia Department of Education initiative. It focuses on early literacy skills at the kindergarten and first grade levels using school-based teams trained to implement intensive phonological awareness intervention for students who have low early literacy skills and to provide daily phonemic awareness instruction to kindergarten children.

Interventions for Students with Learning Disabilities [News Digest 25]
http://www.nichcy.org/pubs/newsdig/nd25txt.htm

National Dissemination Center for Children with Disabilities (1997).

Language Arts Multi-sensory Program (LAMP) (Abbott, 2002)
http://www.jgcp.ku.edu/Faculty/Abbott-Bio.htm

The *Language Arts Multi-sensory Program* is a three-level intensive reading program for students with the most severe reading challenges. LAMP is a one-on-one (or small group) direct instruction intervention that promotes the use of kinesthetic and tactile experiences. There are two levels of teacher manuals and student workbooks. Contact Mary Abbott for additional information.

NCITE research synthesis: Reading and diverse learners
http://idea.uoregon.edu/~ncite/documents/techrep/other.html

National Center to Improve the Tools of Educators (NCITE) (2006).

Programmed Reading (Phoenix Learning Systems)
http://www.learntoreadonline.com/how_work/index.shtml#aboutprogrammed

LearnToReadOnLine's *Programmed Reading* has been extensively researched and adapted for online learning from the print version published by Phoenix Learning Resources. There are provisions for moving ahead at one's own pace or repeating material as needed. Learned material is systematically woven into newer material in a way that has students respond to familiar material while being introduced to new material.

Read Well K-1 (Sopris West)
http://www.readwell.net/overview.asp

Written by Marilyn Sprick, Lisa Howard, and Ann Fidanque, *Read Well* is a research-based reading program that combines systematic phonics, mastery-based learning, and rich content. Published by Sopris West Educational Services.

Repeated Reading (Harris & Sipay, 1990)

Repeated Reading is a procedure that is used to develop reading fluency. With this procedure, a student reads a short passage several times until the fluency rate is determined to be satisfactory for the passage (i.e., a criterion has been reached). This technique is then repeated with a new passage.

Research: Keys to successful learning keys to successful learning [Report]
http://www.ncld.org/content/view/526/506/

National Center for Learning Disabilities (2006).

Road to the Code (Brookes)
http://www.hickman.k12.ca.us/grue/Road_Code,%20K-1%20book.pdf#search='Road%20to%20the%20Code

Road to the Code is an 11-week program for teaching phonemic awareness and letter-sound correspondence to kindergartners and first-graders who are having difficulty with their early literacy skills.

Saxon Phonics (Saxon Publishers)
http://saxonpublishers.harcourtachieve.com/en-US/Products/default.htm?Catalog=Harcourt%20Achieve%20Catalog&Category=SaxonPhonicsSpelling&CatalogNavigationBreadCrumbs=Harcourt%20Achieve%20Catalog;SaxonPhonicsSpelling

The *Saxon Phonics* series builds on a student's prior learning. New learning is presented in increments, and each increment is reviewed throughout the year, providing the exposure needed for the student to achieve reading goals.

Shared Reading (Holdaway, 1979)
http://www.eduplace.com/rdg/res/literacy/em_lit4.html

The shared reading model builds from research indicating that storybook reading is an important factor in children's reading development. The shared reading model often uses big books with enlarged print and illustrations so that as the children are being read to, they can see and appreciate the print and illustrations.

Sound Partners (Sopris West)

Sound Partners originally targeted first-grade students, although the program has also been used for older students. Students are assessed on word attack, word identification, and other skills.

SRA Reading Mastery (SRA McGraw Hill)
www.sra4kids.com

The company describes *Reading Mastery Classic*—a phonemically explicit, intensive approach for teaching beginning reading—as effective at providing positive outcomes with at-risk children.

Parents
Parent Involvement

Part Four Contents

Background

Parent involvement in a tiered service-delivery model, or any service-delivery system, should be characterized by consistent, organized, and meaningful two-way communication between school staff and parents with regard to student progress and related school activities. Through this communication, parents are enabled to play an important role in their child's education by assisting in the learning and by being involved in decision making as it affects tier-level instruction to increase their child's achievement.

Parents should receive information that discusses provisions of the Individuals with Disabilities Education Improvement Act of 2004, noting that IDEA 2004 does not specify that their state or local school must implement an RTI model. What the law does say is that districts "may use a process that determines if the child responds to scientific, research-based intervention as part of the evaluation process..." (IDEA 2004; Learning Disabilities Association of America, 2006).

Within IDEA 2004 (Public Law 108-446), we find the following information related to parent involvement:

sec. 615. procedural safeguards

- "... either a parent of a child, or a State education agency, other State agency, or local education agency may initiate a request for an initial evaluation to determine if the child is a child with a disability."

Sec. 614 (a) (1) (B)

sec. 614. evaluations, eligibility determinations, individualized education program and educational placements

- "Establishment of Procedures--Any State educational agency, State agency, or local educational agency that receives assistance under [Part B] shall establish and maintain procedures in accordance with this section to ensure that children with disabilities and their parents are guaranteed procedural safeguards with respect to the provision of a free appropriate public education by such agencies."

Sec. 615 (a)

- "... procedural safeguard notices shall include a full explanation of the procedural safeguards ... relating to independent educational evaluation; prior written notice; parental consent; access to educational records; the opportunity to present and resolve complaints; ... the child's placement during pendency of due process proceedings; procedures for students who are subject to placement in an interim alternative educational setting; requirements for unilateral placement ...; due process hearings ...; civil actions ...; attorney fees."

Sec. 615(d) (2) (A-K)

In a school setting that is implementing a tiered RTI model, parents should expect to receive information about their children's needs, the interventions that are being used, who is delivering the instruction, and the academic progress expected for their child. Frequent communication with the school, receipt of regular progress (or lack of progress) information, and participation in decision making should provide parents the information needed to determine whether their child should be referred for a special education evaluation (LDA, 2006).

In schools that are preparing to implement a tiered RTI model, parents may find it useful to pose the following questions to administrators and teachers:

- What are the provisions for including parents in the school planning process?

- What are the provisions for ensuring that parents are involved in all phases of planning the RTI interventions for their child?
- How much time must be spent in each tier to determine whether the intervention is working?
- What kinds of written materials will parents receive informing them they have the right to ask for a special education evaluation at any time?

The following provides a list of standards for judging parent involvement in a tiered service-delivery model (Mellard & McKnight, 2006).

- Standards for parent involvement are aligned with IDEA 2004 statutes (and regulations when available) (e.g., due process, hearing, and placement decisions).
- Parental notification includes a description of the problem; clear, unambiguous documentation that shows the specific difficulties the child is experiencing; a written description of the specific intervention and who is delivering instruction; a clearly stated intervention goal; and a long-range timeline for the plan and its implementation.
- Parents and staff reach mutual agreement on the implementation, plan, and timeline.
- Parents frequently receive progress data.
- Parents are actively supported to participate at school and at home.
- Parent questionnaires and surveys assure parents that the school values their opinions.
- Parent questionnaires and surveys assure school staff that parents find school staff and school programs (e.g., interventions and instruction) to be of high quality.
- Parents view the implementation of due process procedures and protections as timely, adequate, and fair.
- School staff members strive to help parents feel welcome, important, and comfortable in the school setting.

The following measures can be used to judge parent involvement (Mellard & McKnight, 2006).

- Track the amount of parent-staff communication to ensure it is consistent and frequent.
- Track problem notification to ensure that it includes a clear and specific description of the problem and a written description of the intervention, the intervention goal, and the timeline.
- Note practices that encourage parents to participate in their child's learning at school and at home and give them support in this effort.
- Track the opportunities given to parents to complete questionnaires and surveys about the quality of school staff and education programs.
- Note practices that make parents feel comfortable about expressing their ideas and concerns and ensure parents that their opinions are valued by school staff.
- Check that practices to keep parents well informed about due process procedures are in place and that parents find the procedures fair, timely, and adequate.

Activities/Tools
Methods and Procedures

For School Staff—Parent Notification

A chart or diagram with clearly stated times for parents to be notified ensures consistent practices within a school. This chart or diagram clearly shows that parents should be and are notified when a child is placed in a group intervention after screening, when a child is placed in a second intervention after showing inadequate response to the first intervention, when a child continues to show inadequate response and is given an individual intervention, and when a special education referral is initiated (Sadler & Zinn, 2005).

For School Staff—Documentation

The documentation of each communication between school staff and parents and each time a parent participates in a meeting or other relevant school activity provides important information for all staff members.

For Parents—Written Explanation of Scheduled Meeting

Before any parent-staff meeting, it is helpful if parents receive a friendly and easily understood written explanation of what will take place at the meeting, the goal of the meeting, and who will be in attendance (Bateman & Linden, 1998). A follow-up telephone call to answer any questions or concerns also is helpful.

For Parents—Lists of Questions

Although parents may be unclear about many aspects of their child's academic work and progress, parents often have difficulty knowing exactly what questions to ask. It is also important that parents have enough information to assist in their child's learning and be involved in the decision-making process. The Exceptional Children's Assistance Center (ECAC) has created attractive and user-friendly lists of questions that parents might want to ask about topics such as reading progress, word recognition, fluency in reading, reading comprehension, etc. The questions are followed by clearly marked areas in which parents can write their answers (ECAC, 2006). Table 3.4 on page 3.42 provides examples from materials and procedures that promote parent involvement.

Information Sheets for Parents

Understanding terminology that is often used during meetings can be difficult for some parents. The ECAC has created a one-page sheet with a list of words that parents might expect to hear at an education-related meeting. After each word is a simple explanation of that word. For example, reading fluency is explained as "the ability to read a text accurately and quickly, often with expression" (ECAC, 2006).

Tips for Parents

Some parents may need specific suggestions and procedures to assure enhanced participation in their child's learning experiences. Single sheets with easy-to-understand tips on helping a child read can help to give parents the information and confidence they need. Such topics might include *Reading Aloud to Your Child, How to Know Whether a Story is Too Difficult for Your Child*, and *Working with Rhymes*. The ECAC provides tips such as these (ECAC, 2006).

Table 3.4. Supporting Parent Involvement

Questions Parents Can Ask series (ECAC, 2006)

Documents created through a collaborative effort by parents, educational consultants, teachers, professors from UNC Chapel Hill and UNC Charlotte, and ECAC staff. Funding for this series was provided by the North Carolina State Improvement Project, Public Schools of North Carolina, Exceptional Children Division.

Questions Parents Can Ask . . . About Reading Improvement

The document contains a brief explanation for parents about asking the listed questions and follows each question with a designated answer space.

The following questions are examples of those included in this publication:

- What is my child's grade level in reading?
- What does that mean he or she can do?
- Where does he or she need to improve?
- Is there a difference between how well my child reads individual words and how well he or she understands what he or she reads? If so, what can we do to improve the weaker areas?
- What kinds of things are you doing to help my child succeed in reading (such as providing support by a reading specialist and providing different materials)?
- What can I do at home to help my son or daughter read well?

Resources for Parental Involvement

Exceptional Children's Assistance Center (ECAC)
www.ecac–parentcenter.org

This center, an example of a full-service Parent Training and Information Center, serves families in North Carolina at no charge. Its web site is filled with information for parents as well as suggestions and materials that schools can use when working with parents. Packets of information (free to those in North Carolina) can be purchased for a nominal fee by individuals in other states.

LD Online
www.ldonline.org

This web site, which focuses on learning disabilities, has a separate section for parents. This section provides information to 1) help parents support their child at home and at school and 2) understand their rights and responsibilities.

National Center for Learning Disabilities
www.ncld.org

This center works to ensure that individuals with learning disabilities have every opportunity for success and that parents have information that is essential for taking effective action on behalf of a child with a learning disability.

Schwab Learning – A Parent's Guide to Helping Kids with Learning Difficulties
www.SchwabLearning.org

Created to help parents, this nonprofit organization is dedicated to providing reliable, parent-friendly information.

Technical Assistance ALLIANCE for Parent Centers
http://www.taalliance.org/centers/index.htm

Each state has at least one Parent Training and Information/Community Parent Resource Center funded by the Office of Special Education Programs in the U.S. Department of Education. These centers provide training and information to parents of children with disabilities.

References

References

Bateman, B.D., & Linden, M.A. (1998). *Better IEP's: How to develop legally correct and educationally useful programs.* Arlington, VA: Council for Exceptional Children.

Bender, W.N. (2002). *Differentiating instruction for students with learning disabilities: Best teaching practices for general and special educators.* Thousand Oaks, CA: Corwin Press, Inc.

Beghetto, R. (2003). Scientifically based research. *ERIC Digest 167*. Eugene, OR: ERIC Clearinghouse on Educational Policy and Management. Retrieved March 15, 2006, from http://eric.uoregon.edu/publications/digests/digest167.html.

Coalition for Evidence-Based Policy (2003). *Identifying and implementing educational practices supported by rigorous evidence: A user friendly guide*. Prepared for the Institute of Education Sciences, Washington, DC: Author. Retrieved March 15, 2006, from http://www.ed.gov/rschstat/research/pubs/rigorousevid/rigorousevid.pdf.

Comprehensive School Reform Program Office, (2002). Office of Elementary and Secondary Education, U.S. Department of Education. *Scientifically based research and the comprehensive school reform (CSR) program.* Washington, DC: Author. Retrieved March 15, 2006, from http://www.ed.gov/programs/compreform/guidance/appendc.doc.

Compton, D.L., Fuchs, D., & Fuchs, L.S. (2006, April). LD identification within an RTI model: An overvieew of the tiered service delivery model. Presentation at the National SEA Conference on SLD Determination: Integrating RTI within the SLD Determination Process, Kansas City, Mo. Retrieved July 12, 2006, from http://www.nrcld.org/sea/presenations_worksheets/tsd/compton_tsd.pdf.

Exceptional Children's Assistance Center (2006). Internet resource documents available. Retrieved March 10, 2006, from http://www.ecac-parentcenter.org/.

Fuchs, D., & Fuchs, L.S. (1995). What's "special" about special education? *Phi Delta Kappan, 76*(7), 522-530

Fuchs, D., & Fuchs, L.S. (2005). Responsiveness-to-intervention: A blueprint for practitioners, policymakers, and parents. *Teaching Exceptional Children, 38*(1), 57–61.

Fuchs, D., Mock, D., Morgan, P.L., & Young, C.L. (2003). Responsiveness-to-intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities Research & Practice, 18*(3), 157–171.

Fuchs, L.S. (1989). Evaluating solutions: Monitoring progress and revising intervention plans. In M.R. Shinn (Ed.), *Curriculum-based measurement: Assessing special children* (pp. 153–181). New York, NY: Guilford.

Fuchs, L.S., & Fuchs, D. (2006). Implementing responsiveness-to-intervention to identify learning disabilities. *Perspectives on Dyslexia, 32*(1), 39-43.

Individuals with Disabilities Education Improvement Act of 2004 (Public Law 108–446).

International Reading Association (2002). What is evidence-based reading instruction? A position statement of the International Reading Association. Retrieved March 15, 2006, from http://www.reading.org/downloads/positions/ps1055_evidence_based.pdf.

Kavale, K.A., Holdnack, J., Mostert, M.P., & Schmied, C.M. (2003, December). The feasibility of a responsiveness to intervention approach for the identification of specific learning disability: A psychometric alternative. Paper presented at the NRCLD Responsiveness-to-Intervention Symposium, Kansas City, MO. Retrieved March 15, 2006, from http://www.nrcld.org/symposium2003/kavale/index.html.

Kovaleski, J.F. (2003, December). The three tier model for identifying learning disabilities: Critical program features and system issues. Paper presented at the NRCLD Responsiveness-to-Intervention Symposium, Kansas City, MO. Retrieved March 15, 2006, from http://www.nrcld.org/symposium2003/kovaleski/index.html.

Learning Disabilities Association of American (2006). Information on responsiveness to intervention. [Brief.] Pittsburgh, PA: Author. Retrieved March 15, 2006, from http://www.ldaamerica.org/.

Learning Disabilities Roundtable (2002, July). Specific learning disabilities: Finding common ground. A report by the ten organizations participating in the Learning Disabilities Roundtable, Sponsored by the Division of Research, Office of Special Education Programs, Department of Education, Washington, DC. Retrieved April 11, 2006, from http://www.ncld.org/content/view/280.

Marston, D. (2003, December). Comments on three papers addressing the question: "How many tiers are needed within RTI to achieve acceptable prevention outcomes and to achieve acceptable patterns of LD identification?" Paper presented at the NRCLD Responsiveness to Intervention Symposium, Kansas City, MO. Retrieved March 15, 2006, from http://www.nrcld.org/symposium2003/marston/index.html.

Mellard, D.F., & McKnight, M.A. (2006). RTI implementation tool for reading: Best practices [Brochure]. Lawrence, KS: National Research Center on Learning Disabilities.

National Association of State Directors of Special Education, Inc. (2005). *Response to intervention: Policy considerations and implementation.* Alexandria, VA: Author.

National Research Center on Learning Disabilities (2005). Responsiveness to intervention in conjunction with learning disability determination [Brochure]. Lawrence, KS: Author.

National Research Council, (2002). *Scientific research in education*, Washington, DC: National Academy Press.

No Child Left Behind Act of 2001 (Public Law 107–110).

O'Connor, R.E., Fulmer, D., & Harty, K. (2003, December). Tiers of intervention in kindergarten through third grade. Paper presented at the NRCLD Responsiveness-to-Intervention Symposium, Kansas City, MO. Retrieved March 15, 2006, from http://www.nrcld.org/symposium2003/oconnor/index.html.

OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports (2006). What is school-wide PBS? Retrieved July 12, 2006, from http://www.pbis.org/schoolwide.htm.

Sadler, C., & Zinn, P. (2005, July). Early intervention/RTI in Tigard-Tualatin school district: Effective behavior & instructional support (EBIS). Presentation made at Office of Special Education Program's Project Directors Conference, Washington, DC.

Swanson, H.L. (1999). Instructional components that predict treatment outcomes for students with learning disabilities: Support for a combined strategy and direct instruction model. *Learning Disability Research & Practice, 14*(3), 129–140.

Tilly, W.D. III. (2003, December). How many tiers are needed for successful prevention and early intervention? Heartland Area Education Agency's evolution from four to three tiers. Paper presented at the NRCLD Responsiveness to Intervention Symposium, Kansas City, MO. Retrieved March 15, 2006, from http://www.nrcld.org/symposium2003/tilly/index.html.

Tomlinson, C.A. (1999). *The differentiated classroom: Responding to the needs of all learners.* Upper Saddle River, NJ: Pearson Merrill Prentice Hall.

Vaughn, S. (2003, December). How many tiers are needed for response to intervention to achieve acceptable prevention outcomes? Paper presented at the NRCLD Responsiveness-to-Intervention Symposium, Kansas City, MO. Retrieved March 15, 2006, from http://www.nrcld.org/symposium2003/vaughn/index.html.

Vaughn, S., & Linan-Thompson, S. (2003). What is special about special education for students with learning disabilities? *The Journal of Special Education, 37*(3), 140–147.

Johnson, E., Mellard, D.F., Fuchs, D., & McKnight, M.A. (2006). *Responsiveness to intervention (RTI): How to do it.* Lawrence, KS: National Research Center on Learning Disabilities.

Section 4

Fidelity of Implementation

August 2006

Overview

One reason for the emphasis on changes to specific learning disabilities (SLD) identification procedures in the Individuals with Disabilities Education Improvement Act of 2004 (P.L. 108-446) (IDEA 2004) is the perception that problems with the current assessment tools result in a number of problems with eligibility decisions:

- The aptitude-achievement discrepancy method represents a wait-to-fail model.
- The discrepancy definition contains variability.
- Assessment tools do not provide data that inform service delivery.
- Use of one data point lacks reliability and validity.
- Inappropriate instruction lacks "formal" prereferral documentation.

IDEA 2004 allows state educational agencies (SEAs) and local educational agencies (LEAs) to consider a student's responsiveness to intervention (RTI) as one component of SLD determination. RTI is thought to address several of the shortcomings noted in past approaches to SLD identification.

As presented in our *Getting Started with SLD Determination: After IDEA Reauthorization* manual *(Getting Started with SLD Guide)*, improvements to the method of SLD identification represent only one facet of the process of RTI implementation. For an RTI component to be successful in addressing current challenges, that component needs to be implemented with high integrity. Many failures of education reforms and practices can be attributed to poor implementation (Gresham, 1989; Levin, Catlin, & Elson, 2005). When schools adopt new initiatives in name only, without fidelity to essential program design features, results are often poor (Kovaleski, Gickling, & Marrow, 1999).

Other sections of this *RTI Manual* provide detailed information about design features and how to implement RTI. This section focuses on helping schools consider how consistent and detailed measures of fidelity of implementation may enhance the potential efficacy of an RTI system—including as a component of the SLD determination process—while providing high-quality instructional experiences and better outcomes for students.

NRCLD is a joint project of researchers at Vanderbilt University and the University of Kansas. This document was produced under U.S. Department of Education Grant No. H324U010004. Renee Bradley served as the project officer. The views expressed herein do not necessarily represent the positions or policies of the Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service or enterprise mentioned in this publication is intended or should be inferred.

What is Fidelity of Implementation?

Fidelity of implementation is the delivery of instruction in the way in which it was designed to be delivered (Gresham, MacMillan, Boebe-Frankenberger, & Bocian, 2000). Fidelity must also address the integrity with which screening and progress-monitoring procedures are completed and an explicit decision-making model is followed. In an RTI model, fidelity is important at both the school level (e.g., implementation of the process) and the teacher level (e.g., implementation of instruction and progress monitoring).

Why is Fidelity of Implementation Important?

For valid disability determination to occur, a diagnostic team needs to be able to determine that a student has received appropriate instruction in the general education classroom. Implementing instruction with fidelity satisfies one of IDEA's legal requirements for appropriate instruction. "In making a determination of eligibility under paragraph (4)(A), a child shall not be determined to be a child with a disability if the determinant factor for such determination is– (A) lack of appropriate instruction in reading, including the essential components of reading instruction; (B) lack of instruction in math; or (C) limited English proficiency [SEC 614.(b)(5)]." Several studies confirm the importance of fidelity of implementation to maximize program effectiveness (e.g., Foorman & Moats, 2004; Foorman & Schatschneider, 2003; Gresham et al., 2000; Kovaleski et al., 1999; Telzrow, McNamara, & Hollinger, 2000; Vaughn, Hughes, Schamm, & Klingner, 1998). Although these studies examined various interventions, the results suggest that positive student outcomes may be attributed to three related factors:

1. Fidelity of implementation of the process (at the school level)
2. Degree to which the selected interventions are empirically supported
3. Fidelity of intervention implementation (at the teacher level)

Although both common sense and research support the concept of fidelity of implementation to ensure an intervention's successful outcome, the practical challenges associated with achieving high levels of fidelity are well documented. Gresham et al. (2000) and Reschly and Gresham (2006) noted several factors that may reduce the fidelity of implementation of an intervention:

- *Complexity.* The more complex the intervention, the lower the fidelity because of the level of difficulty. (This factor includes time needed for instruction in the intervention).
- *Materials and resources required.* If new or substantial resources are required, they need to be readily accessible.
- *Perceived and actual effectiveness (credibility).* Even with a solid research base, if teachers believe the approach will not be effective, or if it is inconsistent with their teaching style, they will not implement it well.
- *Interventionists.* The number, expertise, and motivation of individuals who deliver the intervention are factors in the level of fidelity of implementation.

How Can Schools Ensure Fidelity of Implementation?

When school staffs administer a standardized assessment, the assumption is that the test is administered according to the directions in the test's accompanying manual and that the examiner is qualified. Implementation of RTI must meet the same standard. Direct and frequent assessment of an intervention for fidelity is considered to be best practice. When *researching* the effectiveness of an intervention, it is critical to be able to report the fidelity with which it was implemented so that any resulting gains in student achievement can be accurately attributed to the intervention under scrutiny and so that the intervention may be replicated. When *implementing* an intervention, it is critical to know whether it is being implemented as designed, so that if the intervention is initially unsuccessful, schools can take appropriate measures to remedy the deficiency rather than abandoning the entire reform.

Specific proactive practices that help to ensure fidelity of implementation include the following:

- Link interventions to improved outcomes (credibility)
- Definitively describe operations, techniques, and components
- Clearly define responsibilities of specific persons
- Create a data system for measuring operations, techniques, and components
- Create a system for feedback and decision making (formative)
- Create accountability measures for non-compliance

The ultimate aim of a fidelity system is to ensure that both the school process of RTI and the classroom instruction at various tiers are implemented and delivered as intended. This aim must be balanced with the school's existing resources. General education in Tier 1, using a standard treatment protocol, is an important beginning to the RTI process. Several key components lead to high fidelity, and several key indicators are evidence of implementation with fidelity.

Key components. The key components that lead to RTI fidelity in general education include the following:

- Systematic curriculum
- Effective instruction
- Direct instruction
- Specified instructional materials
- Checklist of key instructional components
- CBM assessments
- Videos and/or observations of classroom instruction
- Results graphed against goals
- Data (results) graphed against goals
- Student progress monitored monthly
- Decisions regarding curriculum and instruction based on data

Key indicators. Key indicators of RTI fidelity in general education include:

- 80 percent to 85 percent of students pass tests
- Improved results over time
- High percentage of students on trajectory

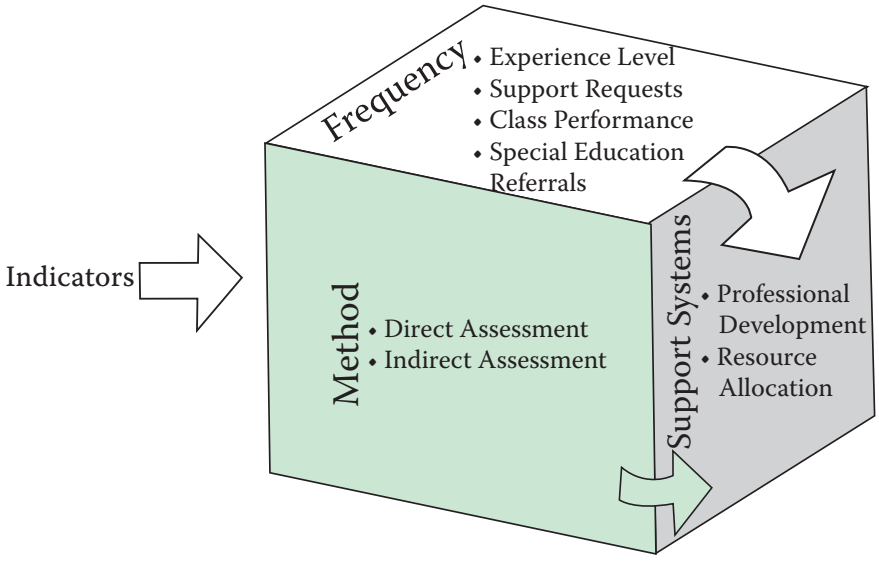
(Reschly & Gresham, 2006)

To keep fidelity manageable for schools, we have conceptualized an approach based on the following three dimensions (see Figure 4.1):

1. *Method.* Different tools provide various kinds of information.
2. *Frequency.* The frequency with which checks are conducted varies depending on the situation.
3. *Support Systems.* The feedback and professional development opportunities needed to implement a process with fidelity are provided to staff.

In using this three-dimensional model, a proactive approach will help promote the implementation of RTI as intended, with more intensive support being provided as needed. Beginning on page 4.4, we explain each of the three fidelity dimensions and describe some indicators that schools can use to select the methods, the frequency with which they use the methods, and the support systems chosen to remedy areas of deficiency. A sample application of this three-dimensional model (Figure 4.2 on page 4.5) illustrates how to pull this information together to work toward high fidelity in your school's instructional practices.

Figure 4.1. Three Dimensions of Ensuring Fidelity



High Fidelity in Tier 2 and Beyond

Dimension One: Method

Checking the implementation of a process for fidelity can be an extremely complex and resource-intensive process. In the research literature, checks for fidelity typically involve frequent observations and recording of behavior, teacher questionnaires, and self-report or videotaping of lessons. The tools available to achieve fidelity can be divided into two main categories (Gresham, 1989):

1. *Direct assessment.* The components of an intervention are clearly specified in operational terms within a checklist based on the task analysis of the major intervention components. A qualified staff member observes the intervention and counts the occurrence of each component to determine the percentage correctly implemented and identifies those teachers needing retraining.
2. *Indirect assessment.* Included in this type of assessment are self-reports, rating scales, interviews, and permanent products. Of the indirect methods, permanent product assessment is thought to be the most reliable and accurate. Permanent products might include samples of student work or student performance on assessments and videotapes of instructional sessions.

Written instructional materials or manuals represent a necessary but not all-sufficient method of ensuring the fidelity of implementation of interventions. The use of such written materials or manuals should be corroborated by direct and indirect measures. In other words, in reviewing a checklist, a teacher might use student work samples as evidence of compliance with the outlined steps on the checklist (Reschly & Gresham, 2006).

Although direct assessments of an intervention are considered to be best practice, schools likely will have to prioritize the ways in which they plan to ensure fidelity of implementation of the various components of RTI. Many of the tools to begin a process of fidelity checks may already exist within a school or are "built in" within the RTI process.

Dimension Two: Frequency

The frequency with which teachers are observed to ensure fidelity of implementation will vary depending upon several factors. These factors include, but are not limited to, the following:

- Teacher experience level
- Teacher requests for support
- Overall class performance
- Degree to which special education referrals do or do not decrease

In the interest of maintaining a non-punitive viewpoint of the evaluation process, it is important that a school set up a timeline for conducting teacher evaluations at the beginning of the school year. This allows teachers to see (a) that fidelity of implementation is important to the principal, school, and district and (b) that regular observations of teachers' implementation is a typical course of action. The person who is designated as the observer (e.g., the principal or reading specialist) would ensure that all teachers are on the schedule for at least one observation.

It is important that new staff be evaluated during the first month of the school year and then further observations can be set up throughout the year depending on need. The dates for the screenings can also be included on this timeline so that teachers are aware of when the student progress data will be collected. Throughout the year, it is also important for teachers to be able to submit comments regarding the evaluation process or the curriculum as well as requests for support in the implementation process.

Dimension Three: Support Systems

As applied by schools, fidelity of implementation serves the purpose of identifying areas of deficiency that need to be remedied. For example, a newly hired teacher may not be familiar with the school's reading curriculum. This teacher might require professional development opportunities to become acquainted with the principles and procedures of the curriculum. Or, a particular classroom may not have sufficient resources to implement and sustain a system of progress monitoring. This de-

ficiency would require the subsequent attainment or redistribution of resources within the school. The kinds of support systems that are required to correct areas of deficiency likely will fall into one of two categories:

1. *Professional development and training.* This may include formal opportunities for workshops and in-service training as well as partnership with mentor teachers or coaches.
2. *Resource allocation.* If teachers do not have the proper resources to implement the intervention, it is incumbent upon the school leadership to obtain or redistribute resources.

Figure 4.2. Fidelity of Implementation (Sample Application of the Three-Dimensional Model)

	Indicator	Method of Evaluation	Frequency	Support System
New Staff	Hire new staff	Direct observations	Ideally 3 times/ year, once early on	Pairing with mentor/coach, provide training in curriculum program
Screening Results	Class average lower than school average, larger number of students identified as "at risk"	Direct observations to review data, review teacher logs, review any supporting evidence from parents, and review student work samples	Same schedule as screening - ideally 3 times/year	Teacher works with mentor coach to problem solve, identify areas of strength and weakness, and provide training opportunities
Teacher Evaluations	Observation/ evaluation highlights deficiency in instructional methods	Follow-up observations, dialogues with teachers, teacher logs/ self-reports	As needed	Identify problem to either require professional development and/or re-allocation of resources

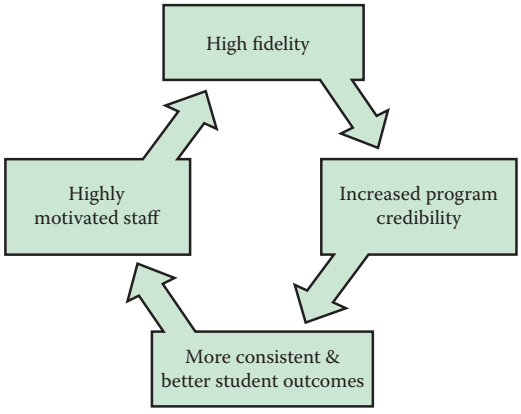
Putting the Three-Dimensional Model Together

RTI represents a significant instructional shift for many schools that requires a coordination of processes at the school and teacher level. Fidelity of implementation is critical if RTI or any education intervention is to be successful. We recognize that schools have limited resources with which to implement the many initiatives and policy requirements they face. In Figure 4.2, we portray a sample application of the process of fidelity of implementation, noting indicators and applying the three-dimensional model described on these pages.

Achieving High Fidelity

Overall, a school's objective is to achieve high fidelity of implementation of the curriculum and instructional practices. If there is a high rate of fidelity in the implementation of the curriculum and appropriate instruction, this enables the administration and staff to rule out this variable with regard to student achievement. Essentially, if scientifically based curriculum and instructional practices are implemented as they were designed, then the student outcomes should be better and more consistent than previous years. When student outcomes are better, the school's instruction and curriculum program increase credibility and reliability. This credibility naturally leads to a more highly motivated staff who wish to maintain this credibility through continued faithful implementation of the curriculum and instructional practices. Figure 4.3 illustrates this recursive process toward achieving high fidelity.

Figure 4.3. Achieving High Fidelity



Changes
Changing Structures, Roles, and Responsibilities

Ensuring fidelity of implementation integrates the following three components of a school:

1. Instructional tools and strategies
2. Student achievement
3. Professional development

This integration cannot occur if teachers are threatened by the system of observation and evaluation that will accompany this process. Accountability measures related to state assessments and the No Child Left Behind Act of 2001 (P.L. 107-110) (NCLB 2001) have in many cases placed an emphasis on punitive measures for teachers. We emphasize that schools should have the opportunity to implement a system of fidelity checks within a collaborative and positive environment that promotes teacher improvement. Honest and open communication with mentors or coaches can help a school tailor its professional development resources to support its staff and ultimately improve student achievement. Evaluations and observations of teachers then need to be approached in a positive manner that emphasizes problem solving.

Teacher mentors also can play a larger role in the school environment to ensure fidelity. To make this process work, mentors or coaches will need to have authority on which to act. Mentors who have proven ability in the relevant area (e.g., additional certifications, consistently high student performance, National Board Certification) should be selected to serve as coaches to new staff. Mentors may require some training for their new role, especially if they now find themselves evaluating their peers.

Roles and responsibilities for ensuring fidelity of implementation are outlined in Table 4.1 on page 4.7.

Table 4.1. Ensuring Fidelity of Implementation

Teachers*	Mentor Teachers/ School Coaches	Administration
Collect direct and indirect assessments that can help corroborate instruction based on written materials or manuals. Review existing checklists and manuals for implementation Implement necessary changes to instructional practices (as a result of fidelity check) If requested, complete teacher reflections or teacher logs If requested, videotape and review delivery of instruction Review fidelity of implementation observation results with supervisor	Monitor progress of teachers in delivering instruction in the content area Provide professional development, coaching, and training Conduct teacher observations according to schedule and include the evaluation of evidence-based instructional practices Evaluate results of observations and collected work samples to provide meaningful and specific feedback to teachers Respond to teacher requests for assistance or information	Lead effort to create infrastructure for a cooperative fidelity of implementation process Provide required resources that include access to curriculum, opportunities to interact with mentors/coaches, and other materials and equipment Conduct teacher observations according to schedule and include the evaluation of evidence-based instructional practices Evaluate results of observations and collected work samples to provide meaningful and specific feedback to teachers Monitor the special education referral rates and average class performance of teachers Ensure fidelity of implementation through routine, periodic walk-throughs, observations, and discussions with staff Coordinate needed professional development Determine when/whether classroom performance warrants intervention (i.e., entire class performance is considerably lower than other classes in the same grade level)

* Teachers include general and special education

Activities/Tools

Methods and Procedures

The following activities (*Activity 4.1: Essential Task List for Fidelity of Implementation, Activity 4.2: Standards for Judging High-Quality Fidelity of Implementation*, and *Activity 4.3: Internal Resources Needed to Ensure Fidelity*) provide ways for your school to think about fidelity of implementation.

Activity 4.1

Essential Task List for Fidelity of Implementation

Directions: In the second column, write the name of the individual or team who will assume responsibility for the task identified in the first column. In the third column, write the deadline for or the status of the task.

Task	Responsible Individual/ Team	Timeline/Status
Develop a system of professional development and training as the school begins RTI implementation and as it hires new staff.		
Develop a fidelity data collection system that includes both direct (e.g., checklists) and indirect (e.g., permanent products) measures.		
Develop criteria (i.e., percent accuracy) to indicate when a teacher may require additional supports.		
Coordinate master schedules to conduct fidelity checks (i.e., teacher evaluations, walk-through checks, trainings).		
Develop a plan to systematically review results of fidelity information collected.		
Develop a plan to provide continuing additional supports and professional development.		

Activity 4.2

Standards for Judging High-Quality Fidelity of Implementation

Directions: Read each of the standards, which have been identified as mechanisms for judging high-quality fidelity of implementation. The checklist is formatted so that you can indicate current and planned implementation.

- If the practice has been implemented, indicate that with a checkmark (√).
- If the practice is being developed, rank its priority: 1 = highest priority through 3 = lowest priority.

Standard	Status	
	In Place (√)	Priority (1-2-3)
Specific, qualified staff member or members are designated to observe instructional methods.		
Staff members (observers) are trained in fidelity procedures and have authoritative status (i.e., they can take action if necessary).		
To document fidelity of instruction, a teacher who is using a newly learned instructional method should be observed immediately and then weekly or twice a week, as needed. A "master teacher" can be observed less frequently (three times per year or less).		
Classroom observation data are collected at least three times per year for Tier 1 and two times per year for Tier 2 and beyond to document instruction and the implementation of strategies addressed in professional development activities.		
Observers complete a written checklist comprising the specific critical features of the instructional methods to document the degree of fidelity.		
Specific criteria (e.g., percentage of critical features observed) are used to judge methods as having, or lacking, fidelity.		
Feedback to instructional staff members includes one or more of the following: a scheduled conference, written information about problematic key features of the checklist, a plan for improvement, and a videotape of exemplary implementation with fidelity.		

(Mellard & McKnight, 2006)

Activity 4.3
Internal Resources Needed to Ensure Fidelity

Directions: In *Activity 4.2: Standards for Judging High-Quality Fidelity of Implementation,* you identified which fidelity of implementation standards had been implemented in your school and which standards still need attention. In the space below, list the resources (material, curriculum, space, equipment, and people) your school will need to effectively ensure fidelity.

Material/Curriculum	Space/Equipment	People

Conclusions

Conclusions

Schools are already encumbered by numerous policy initiatives, increasingly diverse student needs, and limited resources. RTI has the potential to help a school make better use of its resources for increasing overall student achievement and for serving students with learning disabilities by

- Allowing for early identification of at-risk students
- Aligning assessment procedures with instruction
- Providing multiple data points on which decisions are based
- Ensuring access to appropriate instruction through the use of progress monitoring and evidence-based instruction

However, these potentials cannot be realized if screening procedures, interventions, and progress monitoring procedures are not properly implemented. Initially, ensuring fidelity will be a fairly resource-intensive process; it will continue to require resources as schools receive new staff and students. We have described a framework and the tools and procedures that schools can use to develop a system of ensuring fidelity that supports but does not overwhelm schools as they implement RTI. As you read through the resources and references that follow, you should consider additional available resources that have not been discussed in this section.

Resources

Resources

The following is a list of resources that may be helpful in achieving fidelity of implementation.

The Consortium on Reading Excellence

The Consortium on Reading Excellence (2006) has developed a number of reading-focused coaching and instructional implementation materials.

Fuchs, D., & Fuchs, L.S. (2005). Responsiveness-to-intervention: A blueprint for practitioners, policymakers, and parents
Teaching Exceptional Children, 38(1), 57-61

This article identifies dimensions and recommendations for RTI implementation.

The Intervention Validity Checklist (Texas Center for Reading and Language Arts in the College of Education at The University of Texas at Austin)

This checklist (Vaughn et al., 1998) was developed by researchers for use to ensure (1) implementation consistency across teachers and (2) treatment fidelity.

Observation Protocols

Foorman and colleagues (2003, 2004) have developed observation protocols for measuring instructional effects on primary-grade literacy outcomes.

Principal's Reading Walkthrough presentation and documents (Nettles, 2006)

These materials were developed at the Florida Center for Reading Research, with individual checklists for kindergarten, first, second, and third grades.

Rowan, B., Camburn, E., & Correnti, R. (2004). Using teacher logs to measure the enacted curriculum in large-scale surveys: A study of literacy teaching in 3rd grade classrooms
Elementary School Journal, 105, 75–102. Retrieved March 9, 2006, from http://www.sii.soe.umich.edu/documents/EnactedCurr04.pdf.

Rowan and colleagues (2004) use teacher logs to measure the curriculum in large-scale surveys.

SRA checklists (McGraw-Hill Companies)

These checklists are products developed by the McGraw-Hill Companies (SRAOnline, 2006) to help teachers with professional development and fidelity to the curriculum. Materials are available for various curriculum areas: reading, phonics, language arts, mathematics, social studies, science, and more.

Washington State K-12 Reading Model Implementation Guide (Geiger, Banks, Hasbrouck, & Ebbers, 2005)

This guide provides details about assessment, intervention, and instruction.

References

Consortium on Reading Excellence (CORE) (2006). Retrieved March 9, 2006, from http://www.coreread.com/Downloads.htm.

Foorman, B.R., & Moats, L.C. (2004). Conditions for sustaining research-based practices in early reading instruction. *Remedial and Special Education, 25*(1), 51–60.

Foorman, B.R., & Schatschneider, C. (2003). Measuring teaching practices in reading/language arts instruction and their relation to student achievement. In S. Vaughn and K. Briggs (Eds.), *Reading in the classroom: Systems for observing teaching and learning*. Baltimore, MD: Brookes Publishing Co.

Fuchs, D., & Fuchs, L.S. (2005). Responsiveness-to-intervention: A blueprint for practitioners, policymakers, and parents. *Teaching Exceptional Children, 38(1)*, 57-61.

Geiger, S., Banks, A., Hasbrouck, J., & Ebbers, S. (2005). Washington State K-12 Reading Model: Implementation Guide, Office of the Superintendent of Public Instruction, Publication No. 05-0001, Olympia, WA. Retrieved November 1, 2005, from http://www.k12.wa.us/curriculumInstruct/reading/pubdocs/K-12ReadingModel.pdf.

Gresham, F.M. (1989). Assessment of treatment integrity in school consultation and prereferral intervention. *School Psychology Review, 18*(1), 37–50.

Gresham, F.M., MacMillan, D.L., Beebe-Frankenberger, M.E., & Bocian, K.M. (2000). Treatment integrity in learning disabilities intervention research: Do we really know how treatments are implemented? *Learning Disabilities Research & Practice, 15*(4), 198–205.

Individuals with Disabilities Education Improvement Act of 2004 (Public Law 108–446).

Kovaleski, J.F., Gickling, E.E., & Marrow, H. (1999). High versus low implementation of instructional support teams: A case for maintaining program fidelity. *Remedial and Special Education, 20*, 170–183.

Levin, H.M., Catlin, D., & Elson, A. (2005). Costs of implementing adolescent literacy programs. [Report dated August 31, 2005.] Prepared for Carnegie Corporation of New York.

Mellard, D.F., & McKnight, M.A. (2006). RTI implementation tool for reading: Best practices [Brochure]. Lawrence, KS: National Research Center on Learning Disabilities.

Nettles, S. (2006). Principal's Reading Walkthrough Presentation and Documents. Florida Center for Reading Research. Retrieved March 9, 2006, from http://www.fcrr.org/staffpresentations/SNettles/PrincipalWalkthroughContent.pdf, http://www.fcrr.org/staffpresentations/SNettles/PrincipalWalkthroughK.pdf, http://www.fcrr.org/staffpresentations/SNettles/PrincipalWalkthroughFirstGrade.pdf, http://www.fcrr.org/staffpresentations/SNettles/PrincipalWalkthroughSecondGrade.pdf, and http://www.fcrr.org/staffpresentations/SNettles/PrincipalWalkthroughThirdGrade.pdf.

No Child Left Behind Act of 2001 (Public Law 107-110).

Reschly, D.J., & Gresham, F.M. (2006, April). Implementation fidelity of SLD identification procedures. Presentation at the National SEA Conference on SLD Determination: Integrating RTI within the SLD Determination Process, Kansas City, MO. Retrieved July 12, 2006, from http://www.nrcld.org/sea/presentations_worksheets/fidelity/Reschly.pdf.

Rowan, B., Camburn, E., & Correnti, R. (2004). Using teacher logs to measure the enacted curriculum in large-scale surveys: A study of literacy teaching in 3rd grade classrooms. *Elementary School Journal, 105*, 75–102. Retrieved March 9, 2006, from http://www.sii.soe.umich.edu/documents/EnactedCurr04.pdf.

SRAOnline, McGraw-Hill Companies, Inc. (2006). Curriculum materials available on line. Retrieved March 15, 2006, from http://www.sra-4kids.com/.

Telzrow, C.F., McNamara, K., & Hollinger, C.L. (2000). Fidelity of problem-solving implementation and relationship to student performance. *School Psychology Review, 29*, 443–461.

Vaughn, S., Hughes, M.T., Schumm J.S., & Klingner, J. (1998). A collaborative effort to enhance reading and writing instruction in inclusion classrooms. *Learning Disability Quarterly, 21*(1), 57–74.

Section 5

School Examples, Student Case Studies, and Research Examples

August 2006

Overview

In November 2002, the United States Department of Education requested that the National Research Center on Learning Disabilities (NRCLD) identify, describe, and evaluate the implementation of responsiveness to intervention (RTI) in elementary schools throughout the United States. The NRCLD staff worked with the six Regional Resource Centers (RRCs) to identify potential sites and solicit school participation. More than 60 schools across the country initially were considered, and information from 41 of those schools was submitted. The NRCLD research staff reviewed the extensive amount of information submitted and judged that 19 of those schools were engaging in one or more commendable RTI practices based on a review of the following six components of an RTI service-delivery model:

- *School-wide screening.* Screening is a type of assessment characterized by quick, low cost, repeatable testing of critical academic skills or behaviors and can be administered by individuals with minimal amounts of training. A screening measures whether a student should be judged at risk. If a student meets the criteria for at-risk status, he or she is considered for more in-depth assessment. Screenings can use either a criterion referenced or normative comparison standard for measuring student performance.
- *Progress monitoring*. Progress monitoring is a set of assessment procedures for determining the extent to which a student or students are benefiting from classroom instruction. When applied with rigor, progress monitoring addresses the federal stipulations that students deemed as having a disability have not benefited from general education instruction.
- *Tiered service delivery.* The public health profession long ago adopted a tiered approach to services. This approach can be used to explain RTI tiered service delivery of increasingly intense interventions directed at more specific deficits while targeting smaller segments of the population. In the public health example, the general population receives wellness information about how to stay healthy and receives broad vaccinations. That is considered the first or *primary* tier of intervention. However, some members of the general population might become ill or, as a result of large-scale screening, might need more specialized treatment. They could be judged as at risk for particular complications. This higher level is considered the *secondary* level of intervention, which is not provided to the general population but instead is provided for this smaller segment, maybe 10 to 15 percent of the general

NRCLD is a joint project of researchers at Vanderbilt University and the University of Kansas. This document was produced under U.S. Department of Education Grant No. H324U010004. Renee Bradley served as the project officer. The views expressed herein do not necessarily represent the positions or policies of the Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service or enterprise mentioned in this publication is intended or should be inferred.

population. Within this smaller segment, some individuals, roughly 5 percent of the total population, are going to need very specialized interventions. This highest level is called the *tertiary* level of intervention and by design is the most intense and most costly level of intervention. In the same way we understand that the general population benefits from receiving an optimal health intervention, we can imagine that all students would benefit from closely matching instructional and curricular approaches to their current level of functioning and need. That is the role of tiered service delivery.

- *Data-based decision making*. Accurate implementation requires a shared understanding of options (e.g., choices of interventions) and the basis on which those intervention decisions are made. By having a public, objective, and normative framework of "at risk," "responsiveness," and "unresponsiveness," school staff will have a basis for guiding their decisions. For example, when school staff and parents understand the expected oral reading fluency growth rates, decisions about a student's responsiveness can be judged more accurately.
- *Parent involvement*. Parent involvement is consistent, organized, and meaningful two-way communication between school staff and parents with regard to student progress and related school activities. This communication allows parents to play an important role in their child's education.
- *Fidelity of implementation*. Fidelity of implementation is the delivery of content and instructional strategies in the way in which they were intended to be delivered. The delivery of instruction must be accurate and consistent. Although interventions are aimed at students, fidelity measures are focused on the individuals who provide the instruction.

This section of the *RTI Manual* profiles information from some of the schools that engage in commendable RTI practices. Part One features schools that have implemented one or more of the RTI components. Part Two describes longitudinal data from individual students who have received services under an RTI delivery model. Part Three describes research studies that have employed RTI models.

Part One
School Examples

Background

In this section, we provide school-based examples of five of the six components that are important to the implementation of an RTI service-delivery model. For each of these five components (schoolwide screening, progress monitoring, tiered service delivery, data-based decision making, and parent involvement), we describe one or more schools that use an RTI service-delivery model and each school's implementation process for the specific component under discussion.

The NRCLD staff is particularly grateful and acknowledges the tremendous efforts that numerous school staffs expended in helping prepare these sections on school site examples and individual student descriptions. Their efforts allowed us this opportunity to become informed by their pioneering spirit and achievements.

As you read these descriptions, please keep the following points in mind:

- Our intent is to describe examples of RTI implementation as illustrative of current practices. These are real-world examples and thus may not reflect the same practices and standards presented in controlled research studies, such as those described on pages 5.62 to 5.76.
- Staff members at the schools in which these practices have been implemented generally feel positive about their efforts, their outcomes, and their progress. At the same time, they tend to view their RTI procedures as a "work in progress." Staff members we have worked with are reflective and open in their critiques of their practices. They are committed to continued improvement of their RTI implementations.
- These descriptions represent a "current status" of implementation, not an ideal. We want to discourage the conclusion that other schools need only replicate or adopt what is described in this section.
- Due to numerous resource limitations, we have not sufficiently provided the contextual information about the decision-making, the intended outcomes, the development phases, costs, or even the significant staff development activities that supported each implementation. Such details are critical to understanding, evaluating, and promoting the policies, procedures, and practices reflected in the descriptions that follow.

We urge you to reflect on these descriptions deliberately and carefully weigh this information so that if you choose to use the information provided, the decision to do so is made in the context of this incomplete information.

Note: For more information about the instructional programs and assessments mentioned in this section, see pages 5.22-5.25.

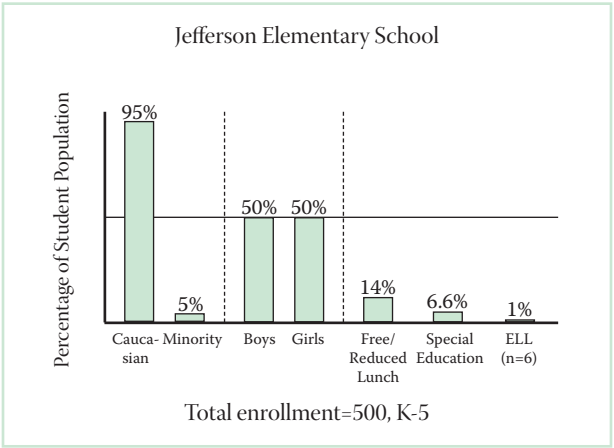
School-Wide Screening

Jefferson Elementary School
Pella, Iowa
(Spring 2006)

Overview and demographics

Jefferson Elementary School has a total enrollment of 500 students, with two sections each of kindergarten through third grade and six sections each of fourth and fifth grades. Nearly equal numbers of girls and boys attend the school. About 14 percent of the students are eligible for free or reduced lunch, and about 6.6 percent are served in special education. Five percent of the students are minority students, 95 percent are Caucasian, and six students are English language learners (ELL).

Jefferson Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, Tier 4, and special education.



Screening in reading

Kindergartners and first-graders are screened using Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessments in the fall, winter, and spring. The school also uses DIBELS fluency and accuracy assessments for students in the second and third grades and Fuchs' fluency and accuracy assessments for students in the fourth and fifth grades. In addition to the fluency and accuracy measures, students in the second through fifth grades are assessed with the Iowa Test of Basic Skills (ITBS) in November and the Gates-McGinitie assessment in April. (Second graders are also given the Gates-McGinitie in October.) Jefferson Elementary also uses a variety of assessments to measure specific district benchmarks.

Screening data and reference points

When analyzing students' screening data, the school uses reference points, not specific cut scores. The reference points are used to indicate whether a student is performing below expectations and to guide school staff members as they determine appropriate interventions for students. The reference points, or scores, match up with proficiency scores of standardized tests.

No single score stands alone in determining interventions for students, but rather data from multiple sources (benchmark scores, fluency screenings, DIBELS, ITBS, Gates-McGinitie) are used to determine which students need instruction beyond Tier 1 and which interventions will be most effective in meeting student needs.

Progress monitoring data also guide the determination of the effectiveness of the interventions.

Fluency norms

Fluency norms are based on norms set by Houghton Mifflin, Jefferson's reading series. DIBELS probes are used for students in kindergarten through third grades, and Letter Sound Fluency Tests are used for students in fourth and fifth grades. To be considered to be making satisfactory progress, students at all grade levels must have 95 percent accuracy (total words correct/total words read) on the fluency probes. Charts are used to indicate words correct per minute on a one-minute timed reading.

Literacy day sessions and data

The Literacy Team, which includes general and special education teachers, Reading Plus teachers, Area Educational Agency staff, the curriculum director, and the principal, meets three times a year for Literacy Day sessions. These sessions occur just after district-wide student screenings and allow team members to review the district-wide screening data as well as data from the other school-wide screening measures. Data are then used to make necessary changes to current student interventions and to identify students who require more individualized and more intensive interventions.

For example, a Literacy Day Data sheet for a fifth-grade class would include the names of the students in the left-hand column and scores earned by each of those students on September fluency and accuracy measures and the Gates-McGinitie comprehension and vocabulary tests. A companion sheet, Literacy Day Notes, would also be used during meeting discussions. Again, student names would be in the left-hand column with adjacent columns for noting the student's areas of need, current interventions, and comments. As discussion progresses during the sessions, changes are made based on student data, students with skill deficits are considered for services, and students with extension needs are considered for gifted and talented placement.

RTI screening challenges

Time. Time is a big issue when conducting school-wide screenings. Jefferson Elementary staff members have trained a group of volunteers to administer fluency and accuracy screenings to reduce the time teachers spend on assessments. They also use associates and Central College students to help in various ways.

Appropriate screening materials. School staff members also appreciate the challenge of determining appropriate screening materials. They agree that some choices (e.g., ITBS) are easy; more difficult to find are screening assessments to match the skills for which they want to screen. Another challenge is to acquire and use multiple sources of data to help validate skill deficits.

Data-based decision making. Using the data to make appropriate decisions regarding interventions has also been a challenge for Jefferson Elementary staff. After being collected, data must be stored and sorted so they can be easily analyzed. While analyzing the data, decisions must be made about how to provide interventions to students when no current program matches their needs.

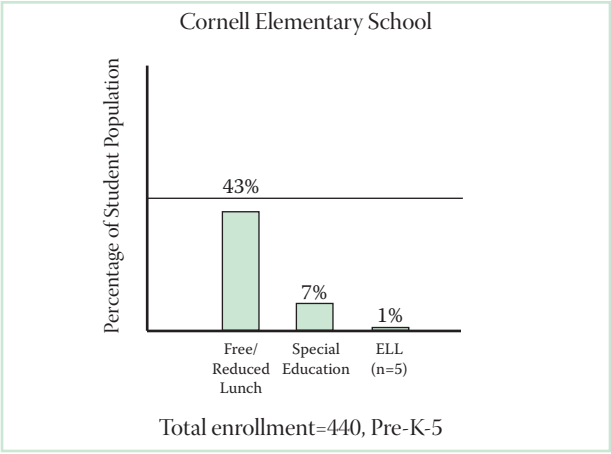
Progress Monitoring

Cornell Elementary School
Des Moines, Iowa
(Spring 2006)

Overview and demographics

Cornell Elementary School's enrollment consists of 440 students in preschool through third grade. Nearly 43 percent (187) of those students receive free or reduced lunch. Thirty-two students are served in special education, and five are English language learners (ELL).

Cornell Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, and special education.



Progress monitoring in the core curriculum

Within the core curriculum, progress monitoring is recommended if a student is new to the district and the initial assessment shows at-risk performance, if a student has previously received supplemental or intervention support and is now performing at benchmark level, or if a teacher has concerns about the amount of progress a student is making. For these students, progress is monitored weekly using DIBELS measures. School staff assess kindergartners' initial sound fluency in the fall and their phoneme segmentation fluency in the winter. For first-graders, nonsense word fluency is assessed in the fall; oral reading fluency is assessed in the spring. School staff use oral reading fluency measures for second- and third-graders three times a year.

Core outcomes: next steps

Progress monitoring in the core curriculum will be discontinued for those students who score at or above the benchmark performance level. School

staff will further analyze the performance of students who score below the benchmark performance, with the goal of matching instruction to student need. These students may remain in the core curriculum with changes to instruction/practice or may be placed in core plus supplemental support.

Planning supplemental support

Options considered when planning supplemental support and matching students' needs with the appropriate type and intensity of resources and instruction include the following:

- more instructional or practice time
- smaller instructional groups
- more precisely targeted instruction at the right level
- more explicit explanations
- more systematic instructional sequences
- more extensive opportunities for guided practice
- more opportunities for corrective feedback

Progress monitoring for core plus supplemental instruction

For students who receive supplemental instruction, progress is monitored often twice each week rather than only once as with the core curriculum. School staff use DIBELS measures to assess kindergartners' initial sound fluency in the fall and their phoneme segmentation fluency in the winter. Staff members assess first-graders' nonsense word fluency in the fall and oral reading fluency in the spring. For second-graders, oral reading fluency is assessed; for third-graders both oral reading fluency and retell fluency are assessed.

Core plus supplemental outcomes: next steps

For students whose slope of performance is on the goal line or who are scoring at or above the benchmark performance level, two options are considered:

- a return to core instruction with progress monitoring occurring weekly
- continuing to receive core plus supplemental instruction

For students who have four consecutive reading probe data points below the established goal line, who are scoring below the benchmark performance, or whose slope of performance falls below the goal line (trend line), three options are considered:

- further analysis or assessment
- continuing in core plus supplemental support with changes
- core plus supplemental instruction *plus* intervention(s)

Planning supplemental support

Options considered when planning instructional support and interventions for struggling students include the following:

- more instructional time
- smaller instructional groups
- more precisely targeted instruction at the right level
- more explicit explanations
- more systematic instructional sequences
- more extensive opportunities for guided practice
- more opportunities for corrective feedback.

Progress monitoring challenges

Follow-up coaching and support. For Cornell Elementary School, one of the greatest challenges continues to be ensuring the fidelity of follow-up coaching and support for supplemental and intervention-level instruction in vocabulary and comprehension.

Fidelity. An additional challenge for this school staff is ensuring continued fidelity of implementation of supplemental and intervention-level instruction over time.

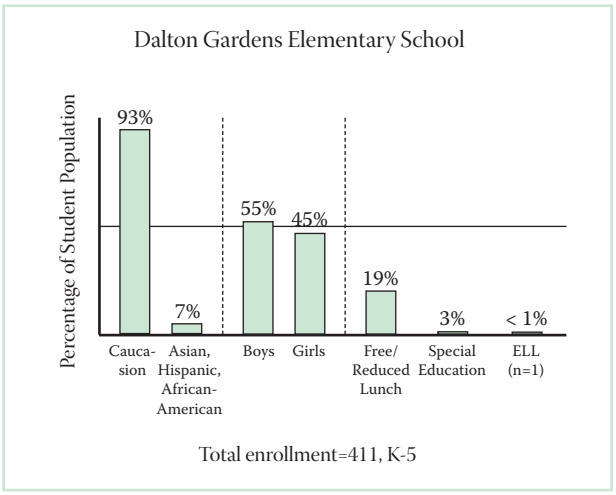
Time. Finding additional instruction and practice time (core plus supplemental plus intervention) without sacrificing other core academic subjects remains a challenge.

Dalton Gardens Elementary School
Dalton Gardens, Idaho
(Spring 2006)

Overview and demographics

Dalton Gardens Elementary School's enrollment consists of 411 students in kindergarten through fifth grade. Of those students, 55 percent are male. The number of classes for each grade is as follows: kindergarten–two; first grade–two; second grade–three; third grade–three; fourth grade–three; and fifth grade–two. Nineteen percent of the students are eligible for free or reduced lunch. Ninety-three percent of the students are Caucasian (not Hispanic), with the remaining 7 percent being nearly equally represented by Asian, Hispanic, and African-American students. Fifteen students are served in special education, and one student is an English language learner (ELL).

Dalton Gardens Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, and special education.



Reading groups

In second through fifth grades, the children are placed in skills-based groups to maximize reading instruction.

Progress monitoring at Tier 2

To monitor the progress of students working at a level below that of their peers, school staff use DIBELS and Read Naturally weekly. DIBELS is used for fluency monitoring – letter naming fluency, phoneme segmentation fluency, nonsense word fluency, and oral reading fluency for students in first grade; nonsense word fluency and oral reading fluency for students in second grade; and oral reading fluency for students in third through fifth grades. Read Naturally is used to practice and monitor fluency and to assess comprehension.

Outcomes at Tier 2: next steps

If a student is making progress, school staff continue all interventions and continue to monitor progress. If a student is not making progress, school staff choose a course of action that could include

- pre-teaching lessons in a small group just before the lesson
- decreasing the number of students per teacher using teaching assistants or special education teachers to work with small groups
- adding small-group and one-on-one instruction to a student's day
- placing students who need additional assistance in a staff-supported study hall

Progress monitoring at Tier 3

To monitor the progress of students working at the Tier 3 level, Dalton Gardens continues with the same measures and cut points used for progress monitoring at Tier 2: letter naming fluency, phoneme segmentation fluency, nonsense word fluency, and oral reading fluency for students in first grade; nonsense word fluency and oral reading fluency for students in second grade; and oral reading fluency for students in third through fifth grades.

Outcomes for Tier 3: next steps

If a student is making progress, school staff continue all interventions and continue to monitor progress. If a student is not making progress, school staff answer the following four questions to make their decision about entitlement:

- Is there resistance to general education interventions?
- Are resources beyond those available in the general education curriculum necessary to enable the child to participate and progress in the general education curriculum?
- Is there evidence of severe discrepancy between student's performance and peers' performance in the area of concern?
- Is there a convergence of evidence that logically and empirically supports the team's decision?

Progress monitoring challenges

Dalton Gardens Elementary School staff continue to be challenged by:

- Who does the progress monitoring?
- When will it get done in an already busy day?
- Is DIBELS being used with fidelity?
- Are staff members all doing progress monitoring the same way? (Staff members have been trained at different times and by different people.)

Additional information about specific decision rules

Specific decision rules. Dalton Gardens Elementary School uses specific cut scores that are provided by the state for the Idaho Standards Achievement Tests (ISAT) and the Idaho Reading Indicator (IRI). Decisions about next steps are made at the individual level. Staff members look at the students individually; a team meets every nine weeks to discuss progress, look at graphs, and decide what the next steps for an individual student should be.

What decision rules about a student's scores on the screening assessments lead to a student being placed in Tier 2 instruction? The state provides the IRI and ISAT cut scores to Dalton. During a team meeting, the team discusses the student's scores on these state assessments and determines whether the scores match the student's work in the classroom and whether there are concerns about this student. If a student continues to score below basic proficiency on both the IRI and ISAT, even after interventions, it is likely that the student will be given Tier 2 instruction, with the hope of improvement on state assessments and class work.

What decision rules are used for progress monitoring? If a student has three data points that are above the aim line, Dalton staff either continue with the interventions or increase the student's goal. If a student has three data points below the aim line, Dalton staff change the intervention by changing the targeted skill or by increasing the amount of time spent with the intervention(s). If a student continues to have data points below the aim line (again, the three data points rule is used), school staff will work with the student in a smaller group (two to three students) or will work with the student one-on-one.

The RTI process at Dalton Gardens Elementary School is child-centered. School staff members look at the students individually and plan for them individually. They recognize that all children are different and what might work for one may not work for another. They try to do what is best for each child individually. If several students fit into a group, then that is great for school staff, but the school will provide interventions one-on-one, if needed. Dalton staff provide early intervention and put a great amount of effort into the interventions with the goal of having students working at grade level, with the realization that some students need sustained interventions and instruction in a different setting.

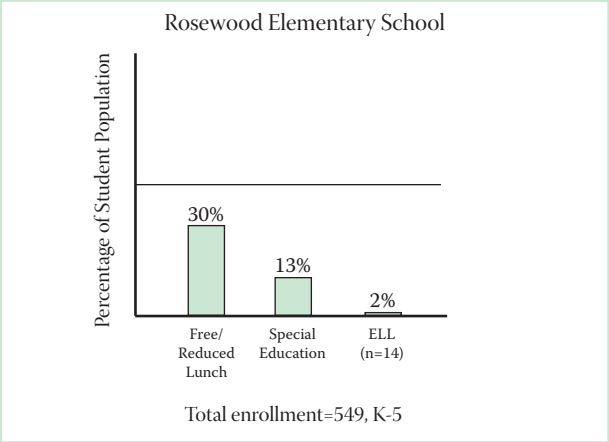
Tiered Service Delivery

Rosewood Elementary School
Vero Beach, Florida
(Spring 2006)

Overview and demographics

Rosewood Elementary School's enrollment consists of 549 students in kindergarten through fifth grade. Each grade level comprises four or five classes. Of the total students, 165 (30 percent) are receiving free or reduced lunch, 14 are English language learners (ELL), and 69 (including 16 gifted) are served in special education.

Rosewood Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, and special education.



Core classroom instruction: Tier 1

The goal of Tier 1 instruction is to maximize the learning for all students using a strong research-based core curriculum to ensure that students meet grade-level standards. The general education teacher uses Harcourt Trophies for reading instruction during an uninterrupted two-hour block each day. Instruction is with the whole class and also with small groups of seven to 10 students each. The general education teacher assesses the students with DIBELS (kindergartners and first-graders) and the Harcourt Holistic assessment (first-graders through fifth-graders).

In general, students in all tiers receive two hours of reading instruction each day, although the length of time spent with reading instruction varies depending on the needs of the student. In Tier 2, group size decreases and instruction is more targeted and specific. Students in Tier 3 may receive extra instructional time to address individual needs, and the staff member who provides the instruction varies. Staff members involved in Tier 3 instruction include the general education teacher, reading coach, student support specialist, elementary specialist, school psychologist, exceptional student education (ESE) teacher, and speech-language pathologist. Instruction takes place in the general education classroom.

Instruction at Tier 2

Students involved in Tier 2 instruction are those students not reaching grade-level reading standards. The goal of Tier 2 instruction is to diagnose academic concerns and systematically apply research-based small-group instruction to enable student performance to reach or exceed grade-level standards. The academic improvement plan team, which includes the general education teacher, the reading coach, and the elementary specialist, are all involved with the instruction, which takes place in the general education classroom. Instructional materials include the Harcourt Trophies Intervention Program with American Federation of Teacher's Educational Research & Dissemination "Five-Step Plan," Earobics, Road to the Code, Great Leaps, and Quick Reads. Tier 2 instruction is conducted for two hours in both whole and small-group instruction. Small-group size ranges from five to seven students. This instruction occurs during the same time frame as Tier 1; however, small-group instruction is more targeted and specific.

Screening assessments for Tier 2 include DIBELS (kindergarten and first grade) and Harcourt Oral Reading Fluency (second through fifth grade). Diagnostic assessments for Tier 2 instruction include Fox in a Box (kindergarten through second grade) and Diagnostic Assessment of Reading (third through fifth grade). School staff monitor student progress using Harcourt Holistic assessments (first through fifth grades) and specific assessments for individual interventions.

Professional development related to Tier 1 and Tier 2 instruction is offered through district workshops scheduled for early release Wednesdays every

two weeks and through Professional Learning Communities. District workshops cover the five components of balanced reading. The Professional Learning Communities at Rosewood include the following: kindergarten–interactive writing; first grade–fluency; second grade–comprehension (author's purpose and comparison and contrast benchmarks); third grade–expository text strategies for references and research strand; fourth grade–reading comprehension (main idea); and fifth grade–comprehension targeting reference and research and main idea.

Instruction at Tier 3

Instruction in Tier 3 is focused on those students who do not respond to Tier 2 instruction, with the goal of providing intensive, individualized or small-group, research-based instruction and intervention to eliminate the discrepancies between student performance and grade-level expectations. Staff members involved in Tier 3 instruction include the general education teacher, reading coach, student support specialist, elementary specialist, school psychologist, ESE teacher, and speech-language pathologist. Instruction takes place in the general education classroom for two hours a day with additional extra time as needed to address individual student needs. Tier 3 instruction is usually done one-on-one; small-group instruction consists of groups of five students or fewer. Instructional materials include the Harcourt Trophies Intervention Program with American Federation of Teacher's Educational Research & Dissemination "Five-Step Plan," Earobics, Road to the Code, Great Leaps, and Quick Reads. Individual interventions are used to address specific areas of concern. School staff monitor progress weekly using DIBELS, AIMSweb Oral Reading Fluency, or AIMSweb MAZE.

Professional development is extensive, as described in Tiers 1 and 2, and also includes Student Support Team staff development on problem solving and progress monitoring.

Instruction at Tier 4 (special education)

Tier 4 (special education) instruction provides sustained intensive support through a targeted curriculum for eligible students who need it to progress toward grade-level expectations. The general education teacher and the ESE teacher share responsibilities for instruction, which takes place in the general education classroom and in the ESE classroom. Instructional materials include the Harcourt Intervention Program and Wilson Reading; these are used on an individual basis or in small groups of no more than five students. Instructional blocks of time are two hours in length plus any additional time that is needed to implement instruction and interventions. Assessments include those used in other tiers plus progress monitoring using AIMSweb Oral Reading Fluency and Maze. Professional development includes all the general education offerings plus training on specific curricula and progress monitoring. Also included in the professional development activities are the following Professional Learning Communities: Behavior Management Techniques and Strategies to Enhance Academic Performance.

Decision rules for Tier 2 and Tier 3

A student should move from Tier 1 to Tier 2 if screening assessments indicate that the student is not meeting benchmark(s), the student's classroom grades are below average, or the classroom teacher formally requests assistance. A student should leave Tier 2 and return to Tier 1 if she or he is meeting benchmarks and course work is on grade level. Tier 2 instruction generally lasts for nine weeks. However, a student may move to Tier 3 sooner if progress is not being made. This unresponsiveness is indicated by a lack of progress toward intervention goals such as three consecutive data points below the aim line.

A student should move to Tier 3 if the student shows inadequate progress with Tier 2 interventions (three data points below the aim line) but should return to Tier 2 from Tier 3 if the student has mastered the goals and can maintain the rate of progress with Tier 2 support. A student should continue with Tier 3 instruction when progress predicts grade-level performance within a year and if inadequate progress indicates a need to modify or redesign the intervention.

Decision rules for special education (Tier 4)

Special education (Tier 4) should be considered when the targeted goal is not met or the student's trend line is below the aim line after implementing two or more interventions. Special education (Tier 4) also should be considered when a positive response in Tier 3 requires an intensity of resources not available in general education. State regulations continue to require ability-achievement discrepancy for eligibility. Response to intervention data are used as evidence of educational need and for educational programming.

What Rosewood is learning through its RTI implementation

Need to shift from "eligibility" to "solving the problem." Rosewood staff members have learned that they need to continue the shift from making the child eligible to solving the child's learning problem. They believe that this may be best accomplished one teacher at a time.

Importance of instructor coaching. They have also learned that coaching is the key to faithful implementation of interventions and to teachers feeling supported.

Tiered service delivery challenges

Development of a bank of evidence-based activities. Rosewood needs to develop a "bank" of evidence-based activities to ensure quality interventions.

Finding manpower and resources. Rosewood needs to think "outside the box" to find the necessary manpower and resources to carry out interventions and progress monitoring.

Quest for accommodations for standardized testing vs. the model. Rosewood believes that the desire to obtain accommodations for standardized testing works against this model.

Additional information about specific decision rules

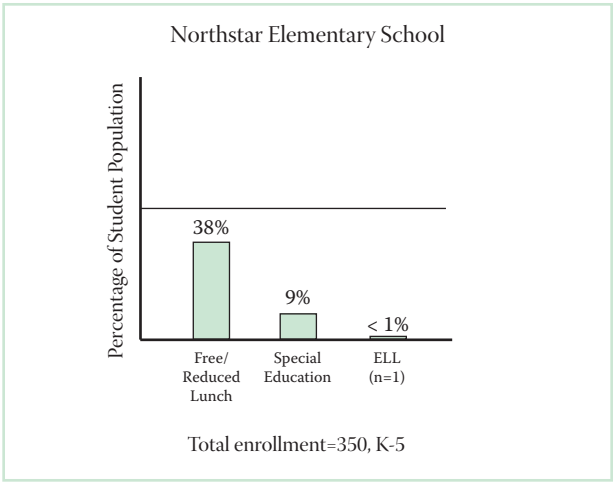
The processes used at Rosewood Elementary are the result of years of researching, learning, searching, and experimenting, and staff still do not think that they have all the answers. RTI is a learning process, and staff members believe they are doing a better job of helping students, but they know they still have a great deal to learn.

Northstar Elementary School
Knoxville, Iowa
(Spring 2006)

Overview & demographics

Enrollment at Northstar Elementary School consists of 350 students in kindergarten through fifth grade. Each grade level comprises three classes. Of the total student population, 133 students (38 percent) receive free or reduced lunch, one student is an English language learner (ELL), and 32 students are served in special education.

Northstar Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, and special education.



Tier 1: core classroom instruction

Reading instruction in Tier 1 (core classroom instruction) is for all students and takes place in the general education classroom. The kindergarten teachers use Read Well; the first-grade general education teachers use Read Well, Open Court, and Write Well. Teachers in grades two through five use Open Court.

Reading instruction for students in kindergarten through third grade is provided five days each week for two and a half hours each day; for students in grades four and five, reading instruction is provided one and a half hours each day. General education teachers use DIBELS, Iowa Test of Basic Skills, Mid Iowa Achievement Level Test, Basic Reading Inventory, Open Court unit tests, and Read Well for student assessments. Staff members involved with Tier 1 reading include the classroom teachers, Title I teachers, and the reading specialist.

Professional development for core classroom instruction focuses on Open Court, provided by the company consultant, and on Read Well.

Tier 2: instruction

Reading instruction in Tier 2 is supplemental

instruction for students identified as "strategic," a designation based on DIBELS criteria and synonymous with the DIBELS "Some Risk" cut score, if that score is an intended benchmark at the time the test is given. The curriculum and instruction in Tier 2 are based on an analysis of student need. Materials and programs used for Tier 2 instruction include REWARDS, Read Naturally, Peer-Assisted Learning Strategies (PALS), Corrective Reading, Six-Minute Solution, Reading Mastery, and Quick Reads.

Tier 2 instruction is provided in addition to the core reading instruction and occurs for 45 to 60 minutes each day, three to five days per week, in the general education classroom or the reading room. The assessments used to measure Tier 2 progress are the same as those used during core instruction, with additional assessments used as needed (weekly probes, error analysis, and running records, for example). The staff members who work with students in Tier 2 include classroom teachers, Title I teachers, the reading specialist, associates (personnel hired to assist teachers in helping students), and special teachers (art, music, physical education). Northstar Elementary has three building associates and one Title I associate.

Professional development for Tier 2 instruction focuses on Open Court, provided by the company consultant; Read Well; and Language Essentials for Teachers of Reading and Spelling (LETRS).

Tier 3: instruction

Reading instruction in Tier 3 consists of supplemental instruction for students identified as "intensive," a designation based on DIBELS criteria and synonymous with the DIBELS "At Risk" cut score, if that score is an intended benchmark at the time the test is given. The curriculum and instruction in Tier 3 are based on an analysis of student need. Tier 3 instruction differs from Tier 2 in that the group size may be smaller, more time is spent on instruction, and the instruction is more intensive. Programs include REWARDS, Read Naturally, PALS, Corrective Reading, Six-Minute Solution, Reading Mastery, and Quick Reads.

Tier 3 instruction is provided in addition to core reading instruction and occurs for 60 minutes each day, five days a week, in the general education classroom or in the reading room. Assessments used to measure Tier 3 progress are the same as those used during core instruction, with additional assessments (such as weekly probes, error analysis, and running records) used as needed. Students in Tier 3 may be assessed more frequently than students in Tier 2. Staff members who work with students in Tier 3 include classroom teachers, Title I teachers, the reading specialist, associates, special teachers, and special education teachers.

Professional development for Tier 3 instruction focuses on Open Court, provided by the company consultant; Read Well; and LETRS.

Decision rules about movement to and from tiers 2 and 3

School staff members base the decision to move a student to Tier 2 instruction based on weekly progress monitoring, individual goals, and research-determined expected growth rates. If it is determined that a student cannot be successful in the core general education classroom, he or she may be moved to Tier 2. Those students who are able to be successful in the core general education classroom remain or return there.

Similarly, school staff members base the decision to move a student to Tier 3 instruction on weekly progress monitoring, individual goals, and research-determined expected growth rates. If it is determined that a student cannot be successful in Tier 2, he or she may be moved to Tier 3.

Groups are very fluid and flexible; students often move among tiers throughout the year. Students are continually monitored regardless of tier and are moved based on their needs.

Special education decisions

Students who are resistive to intervention support are considered for special education. These students may demonstrate slower rates of progress and significant discrepancy from average peers and may have needs beyond what general education can support without additional resources. Northstar Elementary identifies students for special education based on need rather than on disability.

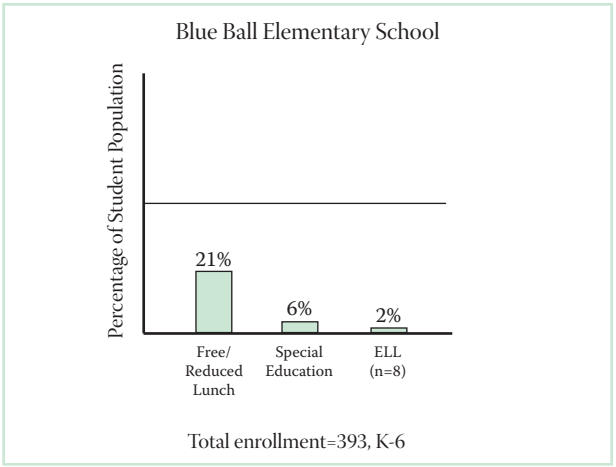
Data-Based Decision Making

Blue Ball Elementary School
Blue Ball, Pennsylvania
(Spring 2006)

Overview and demographics

Blue Ball Elementary School enrolls 393 students in kindergarten through sixth grade, with two classes for each grade. Of the total student population, 21 percent receive free or reduced lunch, 26 students are served in special education, and eight students are English language learners (ELL).

Blue Ball Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, and special education.



Assessment data used in decision making: Tier 1

Within Tier 1, kindergartners are assessed three times. Assessments used include Curriculum Based Measurement-math, DIBELS (reading), letter identification, Concepts About Print, and a fall writing sample. In first grade (Tier 1), assessment data is gathered three times from DIBELS, text level reading, fall writing sample, and four AIMSWeb measures: oral counting, number identification, missing numbers, and quantity discrimination. Second-grade students take the following assessments three times during the year: DIBELS, Degrees of Reading Power (DRP), fall writing sample, and Monitoring Basic Skills Progress in math skills and computation. Assessments for students in Tier 1, grades three through six, are the same, occur three times per year, and consist of DIBELS, 4Sight Reading and Math assessment, Degrees of Reading Power, fall writing sample, and Monitoring Basic Skills Progress in math skills and computation.

Assessment data used in decision making: Tier 2

Assessment data for Tier 2 are collected more frequently than for Tier 1 - either weekly (for students needing and receiving intensive support) or monthly (for students needing and receiving strategic, or supplemental, support). Kindergarten measures are DIBELS, letter identification, Concepts About Print, and fall writing sample. Tier 2 assessments for grades one through six are the same as those for Tier 1, but they, as for the other assessments in Tier 2, occur either weekly or monthly rather than just three times per year.

Assessment data used in decision making: Tier 3

Tier 3 kindergarten assessments occur weekly and consist of DIBELS and four AIMSWeb measures: oral counting, number identification, missing numbers, and quantity discrimination. Tier 3 measures for grades one through six also occur weekly and consist of four AIMSWeb assessments: oral reading fluency (ORF), MAZE, math, and written expression.

Assessment data used in decision making: Special education

Kindergarten through sixth-grade students in the special education tier are assessed with CORE Phonics and Phonological Segmentation twice a year, reading comprehension oral retell once a month, and Precision Teaching daily. In addition, kindergartners in special education are assessed with five AIMSWeb measures: written expression, oral counting, number identification, missing numbers, and quantity discrimination. Additional measures for students in grades one through six are four AIMSWeb assessments: oral reading fluency, MAZE, math, and written expression.

Using screening and progress monitoring data

All screening data are reviewed in late September or early October at grade-level team meetings.

Students are identified as "advanced/benchmark," "strategic," or "intensive" in reading and math. Students identified as strategic or intensive are those students whose scores on screening measures fall below the 25th percentile. Strategic and intensive students move to Tier 2 instructional groupings (small groups), and the grade-level teachers develop an intervention plan to address their needs. The progress of strategic students is monitored every month; the progress of intensive students is monitored every week. Intensive students whose progress remains on or above the aim line remain at the Tier 2 level. Intensive students whose progress falls below the aim line (student trend line is below the goal line) are moved to Tier 3, where they will receive Tier 3 interventions. After five weeks, students' progress monitoring graphs are reviewed to determine whether interventions or group structure need to be refined.

Remaining in and moving from tier 2

Students at all grades may remain at the Tier 2 level until they achieve proficiency on progress monitoring measures or if their progress remains below the aim line for five weeks. Students move from Tier 2 back to Tier 1 if they score in the proficient range on progress monitoring measures. A student leaves Tier 2 and moves to Tier 3 when fall screening data indicate partial proficiency on all measures of a skill area, i.e., all reading measures or all math measures, or when progress monitoring data remain below the aim line for five weeks.

Remaining in and moving from tier 3

For all grade levels, Tier 3 interventions continue for 10 to 20 weeks. If, after 10 weeks, a student receiving Tier 3 interventions achieves the target intervention goal, he or she will move to Tier 2. Students move back to Tier 1 upon achieving proficiency on Tier 2 progress monitoring measures. If, after 10 to 20 weeks of Tier 3 intervention, a student's progress trend line continues to fall below the goal line or if a positive response requires an intensity of resources not available in general education, parent permission is sought to consider the student for special education services.

Remaining in and moving from special education

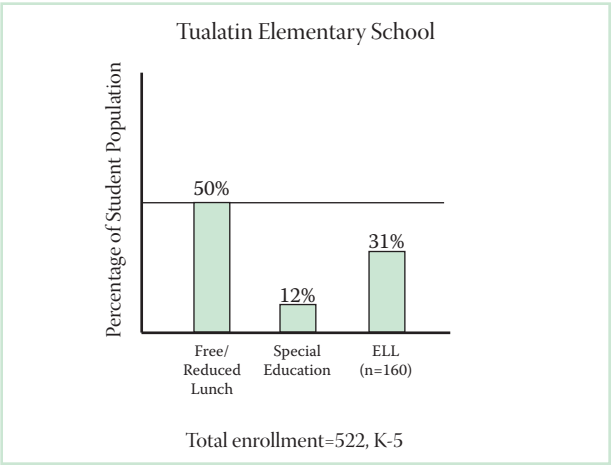
Students receive special education services until they are able to achieve the individualized criteria established in the IEP.

Tualatin Elementary School
Tualatin, Oregon
(Spring 2006)

Overview and demographics

Tualatin Elementary School enrolls 522 students in kindergarten through fifth grade, with three to four classrooms per grade. Nearly 50 percent (260) of the students receive free or reduced lunch. Sixty-five students are served in special education (15 are identified as having a learning disability), and 160 are English language learners (ELL).

Tualatin Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, and special education.



Effective Behavior and Instructional Support (EBIS) organizing model

Tualatin Elementary uses a continuum of school-wide instructional and positive behavior support. Primary prevention systems are school- and classroom-wide for all students, staff, and settings. All students receive quality behavior and academic instruction and support; all are screened for instructional needs in the fall, winter, and spring. Examples of data that are gathered three times a year include

DIBELS, Oregon State Assessments, and data involving attendance, behavior, and counseling referrals.

About 20 percent of the students qualify for secondary prevention, which involves specialized group systems for at-risk students. These students receive small-group interventions. About 5 percent of students qualify for tertiary prevention, which is specialized individualized systems that are in place for students at high risk. Students in this group receive further individualized interventions.

Example structure

The EBIS Team meets weekly. Team members include the school principal, counselor, literacy specialist, special education teacher, ELL specialists, and classroom teacher representatives from each grade level. The team monitors all students who receive small-group and individual interventions. The team also oversees RTI fidelity and makes referrals to special education.

The EBS (Effective Behavior Support) Team meets twice monthly to plan and implement schoolwide supports.

Grade-level teams meet monthly. At each meeting, team members use data to evaluate the core program, plan initial interventions for the "20 percent group," and monitor student progress. Grade-level teams also report to the EBIS Team.

Content-area teams meet every month to recommend curriculum and instructional improvements across all content areas.

Individual Student Case Management implements intensive interventions and monitors student progress within the RTI process.

Decision rules

Eighty Percent Decision Rule. If less than 80 percent of the Tualatin students are meeting benchmarks, Tualatin staff review the core program(s).

Twenty Percent Decision Rule. Students below the 20th percentile in academic skills or with chronic behavior needs (more than five absences or more than three counseling or discipline referrals in a 30-day period) are placed in small-group instruction.

Change Small Group or Individual Intervention Rule. When progress data are below the aim line on three consecutive days, or when six data points produce a flat or decreasing trend line, school staff change the intervention.

Individualize Instruction Rule. When a student fails to progress after two consecutive small-group interventions, individual instruction begins.

Refer for Special Education Evaluation Rule. When a student fails to progress after two consecutive individually-designed interventions, the student is referred for special education evaluation.

Progress monitoring and instructional decision making

Decisions about future instruction are based on progress monitoring results:

- If the group intervention has been successful, the student may no longer need small-group instruction.
- If the intervention appears to be working for the student, the intervention should be continued as is.
- If the group intervention is not working for the student, the intervention should be revised or refined.
- If the group intervention is highly unlikely to be successful for the student, a more individualized approach is needed.

An example: A young student named Daisy is participating in the general curriculum but is not doing well. The EBIS Team reviews Daisy's screening data; from the data review, the team decides to place Daisy in a group intervention. Daisy does not improve, and the EBIS Team designs an individual intervention for Daisy. Had Daisy improved with the group intervention, she would have resumed the general program.

Because Daisy continues to show no improvement with the first individual intervention, the EBIS Team designs a second individual intervention for her. Had Daisy shown good improvement with the first individual intervention, the team would determine whether (1) other factors are suspected as the cause for her poor response to general and group instruction or (2) the individual intervention needed to be given at such an intense level that a learning disability might be suspected. In the latter case, a special education referral is initiated.

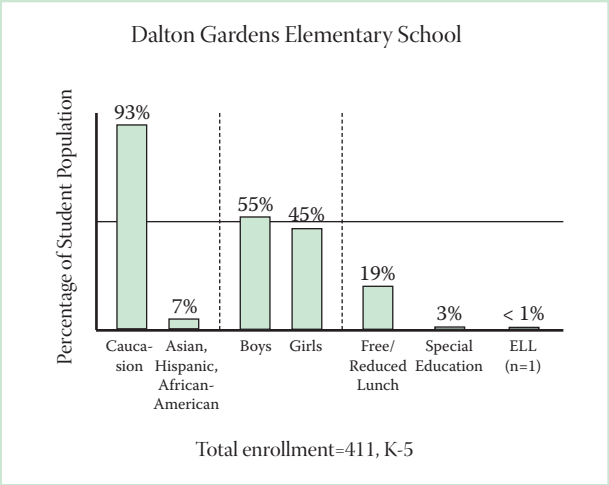
Daisy still does not show improvement when she is given instruction with a second individual intervention. At this point, a special education referral is initiated.

Parent Involvement

Dalton Gardens Elementary School
Dalton Gardens, Idaho
(Spring 2006)

Overview and demographics

Dalton Gardens Elementary School's enrollment consists of 411 students in kindergarten through fifth grade. Of those students, 55 percent are male. The number of classes for each grade is as follows: kindergarten–two; first grade–two; second grade–three; third grade–three; fourth grade–three; and fifth grade–two. Nineteen percent of the students are eligible for free or reduced lunch. Ninety-three percent of the students are Caucasian (not Hispanic), with the remaining 7 percent being nearly equally represented by Asian, Hispanic, and African-American students. Fifteen students are served in special education, and one student is an English language learner (ELL).



Dalton Gardens Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, and special education.

Ensuring that parents feel welcome and comfortable in the school setting

Parents of students with an intervention plan (I-plan) are involved from the initial I-plan meeting. Before this meeting, the classroom teacher makes the initial contact with the parents. The contact may be by phone or at a parent-teacher conference. Just before the meeting, the classroom teacher meets the parents by the school office, assists them with checking in, and gives them a brief overview of how the meeting is expected to go and who will attend. The Dalton Gardens Responsiveness to Intervention (RTI) Team attends these meetings. Members of the RTI Team include the principal, counselor, psychologist, speech-language pathologist (if needed), general education representative (Dalton Gardens has one primary representative and one intermediate representative), special education teacher, and referring teacher.

At the beginning of the meeting, formal introductions are conducted by the meeting facilitator, usually the principal. The classroom teacher then presents information about the student to the parents and to the team members. During the meeting, team members try to be "jargon-busters" if there are terms or acronyms used that the parents may not understand.

Ensuring that parents are involved in all phases of the RTI process and receive active support for participation at school and at home

School staff members are aware that parents often have unique insights about their child's strengths and weaknesses and are frequently eager to help with interventions at home. When parents offer to do interventions at home with their child, the parents are noted on the I-plan as interventionists. Dalton Gardens has had parents come to the school to volunteer so they could observe the interventions in place and help with other students' interventions. Dalton Gardens staff also give parents ideas and materials that they can use at home – for example, flash cards, reading passages with which their child can practice fluency, grammar worksheets, etc. If a parent suggests a certain intervention, Dalton Gardens staff members are open to considering the intervention if it is something that can be provided by the staff. When parents have a suggestion, it is often something they would like to do at home.

Parents are invited to all meetings about their child, although Dalton Gardens staff members do meet without parents if they are unwilling to attend.

Parental notification

Included in a student's I-plan is a description of the child's problem, clear and unambiguous documentation about the child's difficulties, a written description of the specific intervention(s), clearly stated intervention goal(s), and a long-range timeline for the plan and its implementation. (Student timelines can vary widely.) Every nine weeks, Dalton Gardens RTI Team members meet to discuss students with I-plans and to decide to discontinue the I-plan (because goals have been met), continue current interventions, change the interventions, or refer the student to special education. Parents are invited to attend these meetings.

Mutual agreement (parents and staff) on the child's plan, implementation, and timeline

Dalton Gardens staff members have found that, because the parents are so impressed with the RTI and I-plan process and because of the willingness of the team to do whatever it takes to help their child, parents do not have many complaints and it is easy to reach a mutual agreement. If parents do have concerns, the school staff address them immediately and try to work with parents to make satisfactory changes.

Frequent and consistent parent-staff communication

Dalton Gardens staff inform parents about RTI through presentations at Parent-Teacher Association meetings and through the school newsletter. At PTA meetings, school staff give a brief overview of RTI that includes basic information about RTI and the RTI process. The principal sends information about RTI to parents several times a year.

Follow-up meetings focused on student progress occur every nine weeks. If a problem comes up between meeting times, staff will call an emergency meeting to discuss the problem and the next step. The child's classroom teacher invites parents to all meetings.

Dalton Gardens Elementary distributes a survey to families each March to solicit feedback from parents about all the school programs, including RTI.

Progress data sent frequently to parents

Progress monitoring data are usually sent home weekly, if parents request it. Many parents trust that school staff will keep them informed if there is a problem. Many students who are showing good progress on their graphs ask to take a copy home to show their families.

Written materials to inform parents of the right to ask for a special education evaluation at any time

Parents are not given any written information formally, but during past meetings, parents have asked for testing. In these cases, the special education teacher steps in with the appropriate paperwork for parents to read and sign. If a parent asks for testing during a meeting when the special education teacher is not present and the paperwork is not available, a meeting will be scheduled for a later time to handle the paperwork necessary for proceeding with the testing.

Practices by school staff to ensure that parents view the implementation of due process procedures and protections as timely, adequate, and fair

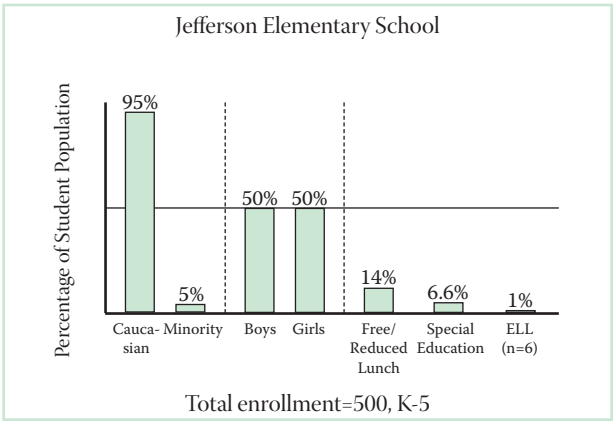
The special education teacher is very conscientious about giving parents all the paperwork and materials at the appropriate time. All staff members are willing to stop a meeting and reconvene at another time to take the appropriate steps for a student.

Jefferson Elementary School
Pella, Iowa
(Spring 2006)

Overview and demographics

Jefferson Elementary School has a total enrollment of 500 students, with two sections each of kindergarten through third grade and six sections each of fourth and fifth grades. Nearly equal numbers of girls and boys attend the school. About 14 percent of the students are eligible for free or reduced lunch, and about 6.6 percent are served in special education. Five percent of the students are minority students, 95 percent are Caucasian, and six students are English language learners (ELL).

Jefferson Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, Tier 4, and special education.



Ensuring that parents feel welcome and comfortable in the school setting

Jefferson Elementary provides opportunities for parents to visit the school and to meet the teachers during an open house and orientation sessions. Jefferson Elementary also offers the following volunteer opportunities for parents: the "literacy army," in which parents serve as interventionists; fluency/accuracy screening volunteers, in which parent volunteers help conduct fluency/accuracy screenings four times per year; and classroom volunteers, in which parent volunteers assist students in the classroom in a variety of ways.

The school encourages teachers to contact parents for positive issues as well as negative ones. E-mail is used as a communication mechanism, and parents are constantly in and out of the building. When arranging for Student Assistance Team (SAT) meetings, the classroom teacher, rather than the principal or SAT coordinator, contacts the parents. School staff believe this is less threatening because parents are more familiar with the classroom teacher.

Ensuring that parents are involved in all phases of the RTI process and receive active support for participation at school and at home

Jefferson Elementary has an Intervention Plan form for teachers to use and send home to parents. This form includes the name of student; the area of concern; the grade-level satisfactory progress range; data collection procedures (what data will be collected, who will collect the data, when and how often data will be collected, and materials used to collect the data); and the plan for using the data for decision making (how often the data will be used, who will examine the data, and indicators of a needed instructional change). At the end of the Intervention Plan form is a table for recording instructional procedures, materials/arrangements, number of sessions per week and length of time per session, individuals responsible, and follow-up notes.

Schools in the Pella Community School District (Jefferson Elementary's district) use a Reading Plus Partnership Pledge (see page 5.19). This agreement is a pledge among students, parents, teachers, paraprofessionals, and principals to help students reach their highest educational objectives. All parties pledge to work together to accomplish the terms of this contract and strive for academic success.

Parental notification

The classroom teacher initially notifies parents that school staff will be discussing their child at a SAT meeting. The team includes the general education teacher, at-risk coordinator, remedial reading teacher, principal, and parents. The teacher notifies the parents in person or contacts them by phone, written note, or e-mail. The teacher submits a form to the SAT coordinator that lists the concerns about the child and provides current existing data. (This form can be shared with the parent but is not always given to them.) During the meeting, the coordinator takes notes about the discussion, which includes necessary accommodations and matching instructional needs to interventions, and at the end of the

The Reading Plus Partnership Pledge

As a student I promise to...

- attend school every day.
- work hard to do my best in class and on school work.
- respect and cooperate with other students and adults.
- do the homework assigned to me each night.
- know and obey all school and class rules.
- ask my teachers, parents, and others for help when I have a problem I cannot solve myself.

As a parent I promise to...

- have high expectations for my child and talk about those expectations.
- help my child attend school and be on time.
- find a quiet place for school work and make sure work is done nightly.
- help my child learn to resolve conflicts in positive ways.
- read all communication sent home by teachers and school staff and to work with staff to support and challenge my child.
- help my child get adequate rest and nutrition so he or she can come to school ready to learn.

As a teacher I promise to...

- show that I care about all students.
- expect students to be ready and willing to learn.
- have high expectations for myself, students, and other staff, and clearly communicate those expectations.
- communicate and work with families to support students' learning.
- provide a safe and caring environment for learning.
- expect respect and support from students, families, other staff, and administration.
- ask for assistance from staff and administration in removing barriers which prevent me from doing my best for students.

As a principal I promise to...

- create a welcoming environment for students and parents.
- communicate the school's mission and goals to students and parents.
- maintain a positive and safe learning environment.
- reinforce the partnership between parents, students, and staff members.
- promote and foster high standards of academic achievement and behavior.

meeting, writes the plan. (Again, this is not always shared with parents but can be shared.) All decisions for placement in remedial interventions are made with parental input and consent.

Frequent and consistent parent-staff communication

Jefferson Elementary asks teachers to communicate with parents whenever they have concerns about a child so that contact takes place not only at parent-teacher conferences but also from the moment a teacher is concerned and begins trying Level 1 classroom interventions. This communication lasts throughout the process and, with some parents, might even evolve into daily contact. At the SAT meeting, the team usually sets a follow-up time to meet and discuss the specific data gathered during the intervention.

Jefferson Elementary staff members also encourage parents to contact the school if they have concerns. Both parents and teachers can initiate an SAT meeting. Parents are invited to be a part of the

SAT meetings, during which many of the interventions are planned.

Progress data sent frequently to parents

Progress data are routinely sent to the parents at report-card times. In addition, school staff share intervention data with the parents at the SAT meeting or, if requested or needed, progress data are shared with parents during the intervention. (Some parents request more information than others.)

Active support for parent participation at school and at home

Jefferson Elementary encourages parents to be active participants in their child's education. At Jefferson, the parental involvement is good; however, with some students, school staff would like to have the parents more involved.

Mutual agreement (parents and staff) on the child's plan, implementation, and timeline

When the SAT process moves into the evaluation stage, formal paperwork is completed. Parents receive a copy of these papers and sign consent forms.

Written materials to inform parents of the right to ask for a special education evaluation at any time

The Area Education Agency (AEA) has a parent information booklet that is shared with parents when Jefferson Elementary initiates conversation about special education and evaluation. This information is accessible to any parent, but the school does not give it to all parents.

Practices by school staff to ensure that parents view the implementation of due process procedures and protections as timely, adequate, and fair

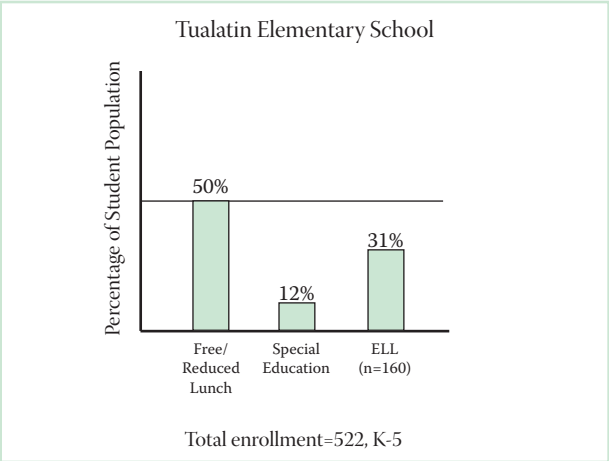
School staff at Jefferson Elementary try to be honest and open with parents about what is happening and explain why. Parents and staff sometimes think that the process takes too long and would like to have it move more quickly even though that is not always possible. School staff have found that if they collect the appropriate data early, it is sometimes easier to move more quickly later.

Tualatin Elementary School
Tualatin, Oregon
(Spring 2006)

Overview and demographics

Tualatin Elementary School enrolls 522 students in kindergarten through fifth grade, with three to four classrooms per grade. Nearly 50 percent (260) of the students receive free or reduced lunch. Sixty-five students are served in special education (15 are identified as having a learning disability), and 160 are English language learners (ELL).

Tualatin Elementary's responsiveness-to-intervention model uses the following structure: Tier 1, Tier 2, Tier 3, and special education.



Ensuring that parents feel welcome and comfortable in the school setting

Parents receive multiple newsletters—some monthly and others weekly. Some newsletters feature school-wide news; others focus on classroom or departmental issues, such as ELL and Title I.

The school provides a variety of parent nights: Back-to-School, Kindergarten Round-Up, Cinco de Mayo, One-Minute Reading Training, Summer Reading, ELL, etc. In addition, parents are invited to volunteer in classrooms.

Most written communication with parents is translated into Spanish; parent nights and conferences are presented in Spanish and English; and one

of the four secretaries in the school's administrative office speaks Spanish.

Ensuring that parents are involved in all phases of the RTI process and receive active support for participation at school and at home

Parents receive DIBELS scores and Title I notification by mail. The Title I interventions are discussed at parent night (with parent training), and the school counselor invites parents to the school for data review or for a parent interview at the various individual problem-solving stages. Parents also receive support through home visits, newsletters, and telephone calls.

Parental notification

Tualatin Elementary has clearly specified times when parents are notified:

1. When a child is not doing well in the general curriculum and the Effective Behavior and Instructional Support (EBIS) Team reviews screening data and places the student in a group intervention
2. When the EBIS Team places a student in a second group intervention
3. When the EBIS Team designs an individual intervention for the student
4. When special education referral is initiated. Parents are continually informed about the plan and its implementation.

Mutual agreement (parents and staff) on the child's plan, implementation, and timeline

Parents rely on teachers' professional expertise to determine the appropriate curriculum and the length and frequency of the interventions. Tualatin Elementary uses district decision rules to determine the duration of the interventions.

Frequent and consistent parent-staff communication

School staff make home visits, and classroom teachers make home visits, place telephone calls to student homes, and have parent conferences to explain the interventions and to review progress. Parents are on the site council to help create the schoolwide strategic plan, are involved in the PTA, and have input on the Title I compact and the program plan.

Progress data sent frequently to parents

Progress data are sent to parents at the end of each trimester. For those students in the EBIS process, progress data are sent to parents more frequently.

Written materials to inform parents of the right to ask for a special education evaluation at any time

The Tualatin District Rights and Responsibilities Handbook contains written information addressing the rights of parents to request a special evaluation any time. Advertisements also are placed in local newspapers informing parents and community members about agencies they can contact if they suspect a child has a disability.

Practices by school staff to ensure that parents view the implementation of due process procedures and protections as timely, adequate, and fair

The principal, the literacy specialists, or special education teachers explain due process rights to parents. In addition, the school mails a parents' rights handbook to parents before meetings.

Resource List: School Examples

4Sight Reading and Math (Success for All Foundation)
http://www.successforall.net/ayp/4sight.htm

4Sight assessments are one-hour tests that have exactly the same formats, coverage, look, and feel as individual state reading and math assessments. They produce overall scores predictive of students' scores on state assessments.

AIMSweb (Edformation, Inc.)
http://www.aimsweb.com/products/systems/pro_complete/description.php

AIMSweb Pro distributes a variety of packaged Curriculum-Based Measurement (CBM) testing materials and web-based software to support a three-tier progress monitoring and responsiveness-to-intervention system in the areas of language arts, math, and reading.

American Federation of Teachers
http://www.aft.org/pubs-reports/downloads/teachers/remedial.pdf

Building on the Best, Learning from What Works: Five Promising Remedial Reading Intervention Programs. The purpose of the series is to promote high standards, effectiveness, replicability, and support structures as criteria for promising reading programs. The five programs featured in the report are research-based: Direct Instruction, Early Steps, Exemplary Center for Reading Instruction, Lindamood-Bell, and Reading Recovery.

Basic Reading Inventory (Kendall/Hunt Publishing Company)
http://www.kendallhunt.com/index.cfm

Basic Reading Inventory, by Jerry L. Johns, is an early literacy assessment for pre-primary through 12th grade. Each book contains multimedia materials demonstrating administration of a reading inventory developed for use by classroom teachers, students in pre-service education, teachers taking introductory and advanced reading courses, reading specialists, and others who are interested in in-service work in reading assessment.

Concepts About Print (CAP) (Marie M. Clay)

Coined by New Zealand educator Marie Clay, concepts about print (CAP) refers to what emergent readers need to understand about how printed language works and how it represents language. Successful beginning readers develop concepts about print at an early age, building on emergent literacy that starts before formal schooling. Additional information can be obtained from the author's book Concepts about Print: What Have Children Learned about the Way We Print Language? Published by Heinemann.

CORE Phonics and Phonological Segmentation (Consortium on Reading Excellence, Inc.)
http://corelearn.com/

CORE works collaboratively with educators to support literacy achievement growth for all students. CORE's literacy implementation support services and products help build capacity for effective instruction by laying a foundation of research-based knowledge, supporting the use of proven tools, and developing literacy leadership.

Corrective Reading (SRA/McGraw Hill)
http://www.sra4kids.com

Corrective Reading provides intensive intervention for students in fourth through 12th grade who are reading one or more years below grade level. This program delivers tightly sequenced, carefully planned lessons that give struggling students the structure and practice necessary to become skilled, fluent readers and better learners.

Degrees of Reading Power (DRP) Program (TASA Literacy Online)
http://www.tasaliteracy.com/drp/drp-main.html

The Degrees of Reading Power (DRP) Program is the basis of a line of reading comprehension tests for students in first through 12th grade and beyond. The tests are criterion-referenced and allow precise tracking of a student's reading development over time.

Diagnostic Assessment of Reading (Riverside/ Houghton Mifflin)
http//:www.riverpub.com/

The Diagnostic Assessments of Reading (DAR) is a criterion-referenced reading test developed by F.G. Roswell, J.S. Chall, M.E. Curtis, and G. Kearns. Its purpose is to assess individual student achievement in print awareness, phonological awareness, letters and sounds, word recognition, word analysis, oral reading accuracy and fluency, silent reading comprehension, spelling, and word meaning. It is administered on an as-needed basis to selected students in kindergarten through 12th grade (ages 5 to adult) who are not making progress in their reading interventions.

DIBELS (University of Oregon)
http://dibels.uoregon.edu/

The *Dynamic Indicators of Basic Early Literacy Skills (DIBELS)* are a set of standardized, individually administered measures of early literacy development designed to be short (one minute) fluency measures used to regularly monitor the development of pre-reading and early reading skills.

Earobics (Cognitive Concepts Inc.)
http://www.earobics.com/

Earobics provides early literacy skill training by teaching the phonological awareness, listening, and introductory phonics skills required for learning to read and spell.

Fox in a Box (CTB/ McGraw-Hill)
http://www.ctb.com/

Fox in a Box is an early literacy assessment that measures children's skills twice yearly from kindergarten through second grade. It provides diagnostic information of selected skills in four learning strands: phonemic awareness, phonics, reading/oral expression, and listening/writing.

Gates-MacGinitie Reading Assessment (Riverside Publishing)
http://riverpub.com/products/gmrt/index.html

The Gates-MacGinitie Reading Assessment is a group-administered reading survey test used to assess student achievement in reading.

Great Leaps (Diarmuid, Inc.)
http://www.greatleaps.com/

Great Leaps Reading uses instructional tactics with motivators to remediate a variety of reading problems. The program is divided into three major areas: Phonics—developing and mastering essential sight-sound relationships or sound awareness skills; Sight Phrases—mastering sight words while developing and improving focusing skills; and Reading Fluency—using age-appropriate stories specifically designed to build reading fluency, reading motivation, and proper intonation.

Harcourt School Publishers
http://www.harcourt.com/

Harcourt School Publishers is an elementary school publisher that develops, publishes, and markets textbooks, electronic/online material, and related instructional materials for school or home use.

- The *Harcourt Oral Reading Fluency Assessment* offers passages used by staff to measure and track students' oral reading rates and accuracy throughout the year.
- *Harcourt Holistic Assessment Books* provide authentic literature for assessment of students' application of reading, writing skills, and strategies.
- *Harcourt Trophies Intervention* includes materials (Intervention Resource Kits, Readers, Teacher's Guides, Practice Books, Skill Cards, etc.) for comprehensive teaching support and supplemental instruction.
- *Harcourt Holistic Assessment* uses the Diagnostic Evaluation of Language Variation (DELV) to assess students' knowledge of speech and language that are non-contrastive (i.e., common across varieties of American English so they are less likely to lead to misidentification).

Houghton Mifflin Reading Series (Houghton Mifflin)
http://www.hmco.com/products/products_elementary.html

The Houghton Mifflin Reading Series builds fluency, extends key themes and concepts across curriculum areas, and provides practice and the application of skills and strategies.

Idaho Reading Indicator (Idaho Department of Education)
http://www.sde.state.id.us/IRI/

The Idaho Reading Indicator tests for fluency and accuracy of a student's reading. It is the single statewide test specified by the Idaho state board of education, and the state department of education ensures that testing takes place twice a year in kindergarten through third grade.

Idaho Standards Achievement Tests (Idaho Department of Education)
http://www.sde.state.id.us/Dept/testreports.asp

Idaho's comprehensive assessment system begins with kindergarten and continues through high school. The focus of the state assessment program is primarily on math, reading, and language usage skills.

Iowa Test of Basic Skills (University of Iowa)
http://www.education.uiowa.edu/itp/itbs/index.htm

The Iowa Test of Basic Skills is a voluntary, nonprofit cooperative program for kindergarten through eighth grade provided as a service to the schools of Iowa by the College of Education of the University of Iowa.

Language Essentials for Teachers of Reading and Spelling (LETRS) (Sopris West)
http://www.sopriswest.com/

This professional development program provides reading coaches, specialists, and teachers with a comprehensive, practical understanding of how their students learn to read, write, and spell—and how they can use this understanding to improve and focus instruction.

Letter Sound Fluency Test (Vanderbilt University)
Copies can be order from flora.murray@vanderbilt.edu

The Letter Sound Fluency Test was developed by Doug and Lynn Fuchs to assess a student's capacity to translate letters into sounds fluently: a student has one minute to say the sounds for the 26 letters. The test takes five minutes to administer and was developed for use with kindergarteners through first-graders.

Mid Iowa Achievement Level Test (MIALT) (Iowa Department of Education)
http://www.state.ia.us/educate/index.html

The Mid Iowa Achievement Level Test is a criterion-referenced test, meaning that it measures knowledge within an established set of standards. Given each year in the fall and in the spring, the MIALT is helpful in assessing a student's progress toward identified standards.

Monitoring Basic Skills Progress (MBSP) (ProEd, Inc.)
http://www.proedinc.com/

Developed at Vanderbilt University by Lynn Fuchs, Carol Hamlett, and Douglas Fuchs, the Monitoring Basic Skills Progress is a computer program that automatically conducts curriculum-based measurement and monitoring of student progress in reading, math computation, and math concepts and applications. Students receive immediate feedback on their progress, and teachers receive individual and class-wide reports to help them develop more effective instruction. MBSP unit options include basic reading, basic math computation, and basic math concepts and applications.

Open Court (SRA/McGraw Hill)
http://www.sra4kids.com/

Open Court Reading is a research-based curriculum grounded in systematic, explicit instruction of phonemic awareness, phonics and word knowledge, comprehension skills and strategies, inquiry skills and strategies, and writing and language arts skills and strategies.

Oregon State Assessments (OSA) (Office of Assessment in the Oregon Department of Education)
http://www.ode.state.or.us/search/results/?id=169

Oregon's assessments are used to show how well individual students have mastered Oregon standards and to demonstrate the effectiveness of schools and districts in preparing students to meet standards. Mastery is measured in three general ways: knowledge and skill tests, on-demand state performance assessments, and classroom work samples.

Peer-Assisted Learning Strategies (**PALS**) (Vanderbilt Kennedy Center for Research on Human Development)
http://kc.vanderbilt.edu/pals/

PALS Reading and PALS Math enable classroom teachers to accommodate diverse learners and help a large proportion of these students achieve success. PALS Reading and PALS Math have been approved by the U.S. Department of Education's Program Effectiveness Panel for inclusion in the National Diffusion Network on effective educational practices.

Precision Teaching (PT) (concept by Ogden Lindsley)

Precision Teaching is a concept of basing educational decisions on changes in continuous self-monitored performance results that are displayed on charts. Additional information about the concept can be found in the following resources:

• Lindsley, O.R. (1992). Precision teaching: Discoveries and effects. *Journal of Applied Behavior Analysis, 25*, 51-57.
• Lindsley, O.R. (1990). Precision teaching: By teachers for children. *Teaching Exceptional Children, 22*(3), 10-15.
• West, R.P., & Young, K.R. (1992). Precision teaching. In R.P. West & L.A. Hamerlynck (Eds.), *Designs for excellence in education: The legacy of B. F. Skinner* (pp. 113-146). Longmont, CO: Sopris West, Inc.
• White O.R. (1986). Precision teaching—Precision learning. *Exceptional Children, 52*, 522-534.

Quick Reads (Pearson Learning Group's Modern Curriculum Press)
http://www.quickreads.org/

QuickReads are short texts to be read quickly and with meaning. The QuickReads program consists of three levels: B, C, and D. These texts support automaticity with the high-frequency words and phonics/syllabic patterns needed to be a successful reader at a particular grade level.

Read Naturally (Read Naturally, Inc.)
http://www.readnaturally.com/

Students work with the Read Naturally stories on paper and read along to fluent recordings of the stories on cassettes or audio CDs. Reading along is the teacher modeling step, which helps students learn new words and encourages proper pronunciation, expression, and phrasing.

Read Well (Sopris West)
http://www.sopriswest.com/

Read Well is a validated, research-based and data-driven core reading curriculum that teaches students the important building blocks of literacy while providing the foundation and skills to develop lifelong readers. It is designed to generate quantitative learning gains for all students, with struggling students showing the most substantial growth by combining explicit, systematic instruction, rich themes and content, and structured learning activities.

REWARDS (Sopris West)
http://www.sopriswest.com/

The *REWARDS* reading intervention program is a validated, research-based program that can be used as an effective intervention in general and special education, remedial reading, summer school, and after-school programs. The program improves decoding, fluency, vocabulary, comprehension, content-area reading and writing, and test-taking abilities.

Road to the Code (Brookes)
http://www.brookespublishing.com

Road to the Code is an 11-week program for teaching phonemic awareness and letter sound correspondence to kindergartners and first-graders who are having difficulty with their early literacy skills.

The Six-Minute Solution: A Fluency Program (Sopris West)
http://www.sopriswest.com/

The Six-Minute Solution is a research-based way to build students' reading fluency in six minutes a day. It can be use as a complement to any reading curriculum and as an intervention program. Students do repeated readings of one-minute nonfiction passages as their same-level partners note the number of words read correctly.

SRA Reading Mastery (SRA/McGraw-Hill)
http://www.mcgraw-hill.co.uk/sra/readingmastery.htm

Reading Mastery helps students develop strategies for reading and understanding through the use of a synthetic phonics approach. Its use has proven to reduce the prevalence of reading problems and elevate the reading skills of at-risk children well into the average range.

Wilson Reading (Wilson Language Training)
http://www.wilsonlanguage.com/

The Wilson Reading System is a research-based reading and writing program. It is a complete curriculum for teaching decoding and encoding (spelling), beginning with phoneme segmentation.

Write Well (Sopris West)
http://www.sopriswest.com/

Write Well provides daily dictation lessons for teaching students how to translate spoken into written English and helps them master the conventions of sentence writing. In 15 to 20 minutes per day, these field-tested methods can be incorporated into *Read Well* instruction.

Part Two
Student Case Studies

In the following examples, we highlight data from individual elementary-school students who have received early reading (and limited math) interventions through a multi-tiered RTI service-delivery model. These data are from real students in real-world circumstances; consequently, the information collected, as well as the data collection process, reflect variations initiated by the students' respective school and the unique characteristics of individual students. We have altered the names and other uniquely identifying information about student characteristics for confidentiality purposes.

Case Study: Bryanna

Reading: Third Grade (2005 – 2006)

Bryanna is an 8-year-old, Caucasian female. She is in third grade and has not been retained.

Third Grade (2005 – 2006)

Tier 1

Bryanna is in a general education class of 17 students. Her general education (Tier 1) reading instruction takes place for 90 minutes each day, five days a week, with Scholastic Literacy Place. The class is split into smaller reading groups, and Bryanna is in a reading group of six students.

Tier 1 Screening. The school administered DIBELS in August 2005 and again in December 2005. Table 5.1 shows Bryanna's scores compared to the established cut scores.

Table 5.1. Bryanna's Tier 1 Screening Scores

Assessment	Bryanna's Scores	Some Risk Cut Score
DIBELS		
FALL ORF	41	< 77
FALL RTF	17	< 38
MID-YEAR ORF	64	< 92
MID-YEAR RTF	44	< 46

DIBELS Scoring is as follows:

- DIBELS Oral Reading Fluency (ORF) = number of correct words per minute from the passage
- DIBELS Retell Fluency (RTF) is intended to provide a comprehension check for the DIBELS ORF assessment

Behavior. This school uses a district behavior discipline form to gather school-wide behavior data. No behavior concerns were noted for Bryanna.

Tier 2

Tier 2 interventions. Bryanna began receiving Tier 2 interventions in second grade, and they continued into third grade, as follows:

- SRA Reading Mastery II and Lindamood Phonemic Sequencing (LiPS) with the special education teacher for 60 minutes each day, five days a week.
- Bryanna is also being tutored for 50 minutes twice a week. She is in a group with six other students and is working on Balanced Literacy using non-fiction readers.

Tier 2 progress monitoring. Table 5.2 shows Bryanna's progress monitoring scores for oral reading fluency and retell fluency measures. The table also notes the established cut scores for designating a child as at some risk in these areas.

Table 5.2. DIBELS Oral Reading Fluency (ORF) and Retell Fluency (RTF)

Date	Bryanna's ORF Scores	At Some Risk ORF Cut Scores	Bryanna's RTF Scores	At Some Risk RTF Cut Scores
Sept. Week 1	41	< 77	17	< 38
Sept. Week 3	56		35	
Oct. Week 1	47		16	
Oct. Week 4	64		28	
Nov. Week 2	62		32	
Nov. Week 4	Absent		Absent	
Dec. Week 2	64	< 92	44	< 46
Jan. Week 2	88		9	
Jan. Week 4	100		54	
Feb. Week 1	73		0	
End of year		< 110		< 55

Math: Third Grade (2005 – 2006)

Third Grade (2005 – 2006)

Tier 1

Bryanna is in a general education class of 17 students for math. Her general education (Tier 1) math instruction takes place for 60 minutes each day, five days a week, with Houghton-Mifflin Central.

Tier 1 screening. The school administered the Terra Nova screening measure in August to all third-grade students. The cut score used to designate "at-risk" status is equivalent to the measure's proficiency level. Bryanna's math score placed her in the unsatisfactory range, therefore "at risk."

Quarterly assessments also are given at the end of each grading period. The "at risk" status is again based on degree of mastery toward the standards that are evaluated by the assessments. Bryanna placed in the unsatisfactory and partial mastery range on quarterly assessments in October.

Tier 2

Tier 2 intervention. Bryanna is receiving small-group math problem solving instruction with the special education teacher for 30 minutes a day, four days each week. Seven other students are in this group. The curriculum includes Houghton Mifflin Math Central problem solving, Investigations, and Touch Math.

Tier 2 progress monitoring. Progress monitoring consists of teacher observation and teacher-generated prompts. Data are collected on a weekly basis. The cut score designation for inadequate response is 80 percent accuracy. The following table reports Bryanna's quiz scores in relation to the 80 percent accuracy criterion. Quizzes consist of five problems.

Table 5.3 Math Problem Solving Quizzes 2005-2006 School Year

Quiz Date	Score	Inadequate response score
Oct. 21	0	< 80 percent
Nov. 4	40	< 80%
Nov. 18	60	< 80%
Dec. 2	60	< 80%
Dec. 16	20	< 80%
Jan. 13	60	< 80%
Jan. 27	0	< 80%

Disability And Eligibility Determination For Tier 3 – Special Education

Bryanna was referred for a special education evaluation due to inadequate response to intervention. The evaluation employed discrepancy criteria and language severity rating scales. Table 5.4, beginning on page 5.29, lists all of the components and measures used in the comprehensive evaluation.

As a result of the evaluation, Bryanna did not qualify for special education services with an SLD/LD designation as school personnel had anticipated she would. Although she did not respond to Tier 2 interventions, she still needed to exhibit a discrepancy to be eligible with an SLD designation.

However, after looking at the scores, the team determined that her biggest skill deficits were in the area of speech-language. Her Spoken Language Quotient of 67 on the TOLD P:3 assessment was more than two standard deviations below the mean. This score qualified her for Tier 3 (special education) interventions in the area of speech-language.

The school is awaiting parental consent at an initial Individualized Education Program (IEP) meeting to begin Tier 3 (special education) services.

Table 5.4. Comprehensive Evaluation Components and Measures for SLD Determination (Bryanna)

Component	Test/ Meeting Date	Assessment/ Procedure	Type of Data or Score	Cut Score/ Criteria	Comments
Multifaceted in Nature	At IEP meeting – 2/2/06	IEP Team Decision			IEP team determined that Bryanna's disability is in the area of speech-language
Intellectual Ability	1-11-2006	WISC-IV	Full Scale SS = 81*	> 70	
Aptitude-Achievement Discrepancies	11-28-2005	WJ-III	SS Broad Reading = 92 Broad Math= 94 Broad Written Lang = 99	< 68 to qualify as SLD	Collaboration with classroom performance data and RTI
Intra-individual Differences					
Information or Language Processing Involvement	11-29-2005	TOLD P:3	Spoken Language Quotient = 67	1½ standard deviations below the mean	Individual Skill Deficits
Exclusionary Criteria	At IEP meeting 2/2/06	IEP Team Decision			English acquisition and instruction were not found to be lacking
Behavioral and Academic Screening	1-11-2006	BASC and Conners'	BASC teacher ratings reflected attention and learning problems in the at-risk range. All other behavioral areas presented in the average range. Adaptability and social skills were rated above average, presenting relative strengths. Conners' teacher ratings show elevated scores for areas related to cognitive inattention. Conners' parent ratings reflect no areas of concern; all scores fell within the average ranges. The BASC parent ratings also reflected no areas of concern.	BASC and Conners' scores are not typically used to qualify a student as PC (SLD) unless they were in the clinically significant range or the high end of the at-risk range for areas related to attention problems that may be a component of processing difficulties.	Cognitive inattention and learning problems in the at-risk range.
Appropriate Learning Experiences	At the IEP meeting 2/2/06	IEP Team Decision	Determined to be appropriate		IEP Team determined that Bryanna has had access to appropriate learning experiences.

See pages 5.57-5.61 for descriptions and reference information for the assessments listed in this table.

Component	Test/ Meeting Date	Assessment/ Procedure	Type of Data or Score	Cut Score/ Criteria	Comments
Social Skills Deficits	1-11-2006	Social Developmental History			No significant concerns reported by parent.
Adaptive Behavior		Vineland (as needed)			
Parents' Role	Ongoing	Communication and Parent Contact Logs			
Eligibility Decision and Professional Judgment	At IEP meeting 2/2/06	Eligibility Criteria Checklist**			
Special Education Exit Criteria		Progress toward goals met			

See pages 5.57-5.61 for descriptions and reference information for the assessments listed in this table.

* Bryanna's school uses state criteria of 70 or above for a learning disability (Perceptual Communicative Disability) as opposed to SLIC (Significant Limited Intellectual Capacity). To qualify for SLIC, a student must have three measures—cognitive, educational achievement, and adaptive behavior—with scores of 70 or less.

** The speech-language checklist consists of selecting the area of speech-language impairment (i.e., expressive/receptive delay). Then, to qualify, that impairment must cause a need for augmentative communication, substantial behavior problems due to communication, or interference with oral or written communication for academics.

Case Study: Jayden

Reading: Kindergarten (2003) – Second Grade (2006)

Jayden is an 8-year-old boy in second grade. He is multiracial. He has never been retained but has continued, since kindergarten, to struggle with reading.

Kindergarten (2003–2004)

Tier 1

In kindergarten, Jayden's general education (Tier 1) reading instruction consisted of 120 minutes each day, five days a week, with the Harcourt Trophies series. The general education teacher gave reading instruction to the whole class and also to small groups. Seven students were in Jayden's group.

The school administered the Early Screening Inventory (ESI-K) in August 2003 and administered DIBELS in mid-September, mid-January, and at the end of the third week in April. Table 5.6 shows Jayden's scores compared to the established cut scores.

Table 5.6. Jayden's Tier 1 early Screening Inventory and DIBELS Scores

Assessment	Jayden's Scores	At Risk Cut-off Score
ESI-K	28	<21
Fall DIBELS - ISF	28	<7
Fall DIBELS - LNF	5	<7
Mid-Year DIBELS - ISF	23	<25
Mid-Year DIBELS - LNF	7	<27
Mid-Year DIBELS – PSF	27	<18
Spring DIBELS - LNF	8	<40
Spring DIBELS - PSF	25	<35
Spring DIBELS – NWF	6	<25

The at-risk cut scores for these DIBELS assessments are determined at the state level.

Scoring for DIBELS is as follows:

- Initial Sound Fluency (ISF) = number of initial sounds correct in one minute
- Letter Naming Fluency (LNF) = number of letters named correctly in one minute.
- Phoneme Segmentation Fluency (PSF) = number of correct phonemes produced in one minute
- Nonsense Word Fluency (NWF) = number of letter-sounds produced correctly in one minute.

Tier 2

In kindergarten, Jayden did not have an academic improvement plan and thus did not have any Tier 2 reading interventions.

First Grade (2004–2005)

Tier 1

In first grade, Jayden's general education (Tier 1) reading instruction was the same as in kindergarten. The general education teacher used the Harcourt Trophies Series, and instruction took place five days a week for 120 minutes each day. Instruction was provided to the whole class (approximately 20 students) and to small groups, with seven students in Jayden's group.

Screening. During first grade, the school administered DIBELS assessments to Jayden in mid-September, mid-January, and mid-April. Table 5.7 on page 5.32 shows Jayden's screening scores compared to the established cut scores.

Table 5.7. Jayden's First-Grade Screening Scores

Assessment	Jayden's Scores	At Risk Cut Score
Fall DIBELS - LNF	12	<37
Fall DIBELS - PSF	20	<35
Fall DIBELS - NWF	5	<24
Mid-Year DIBELS - PSF	42	<35
Mid-Year DIBELS – NWF	30	<50
Mid-Year Harcourt - ORF	18 CWPM/11 errors	<55 (HORF)
Spring DIBELS - PSF	51	<35
Spring DIBELS - NWF	66	<50
Spring DIBELS - ORF	41	<60

At-risk cut scores for these DIBELS assessments are determined at the state level.

Scoring is as follows:

- Letter Naming Fluency (LNF) = number of letters named correctly in one minute
- Initial Sound Fluency (ISF) = number of initial sounds correct in one minute
- Phoneme Segmentation Fluency (PSF) = number of correct phonemes produced in one minute
- Nonsense Word Fluency (NWF) = number of letter-sounds produced correctly in one minute
- Oral Reading Fluency (ORF) = number of correct words per minute

School staff members decided that Jayden needed Tier 2 interventions because his classroom performance was well below that of his peers and his fall DIBELS scores placed him in the "intensive" group for his recommended instructional level. Jayden's letter naming fluency (LNF) score of 12 letter names per minute and his nonsense word fluency (NWF) score of 5 placed him in the "high risk" category. His phoneme segmentation score of 20 phonemes per minute fell in the "emerging" category. (He should have reached the established level with a score of 35 by the end of kindergarten.)

Tier 2

Jayden began receiving Tier 2 instruction in the fall of first grade. School personnel administered Fox in a Box diagnostics to determine Jayden's specific needs.

Fox in a Box was administered in October and analyzed the five areas of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension. At this same time, an Elementary Reading Academic Improvement Plan was developed.

Areas of concern and interventions during the second nine weeks of first grade were as follows: phonemic awareness, specifically letter sounds, with Earobics and Exemplary Center for Reading Instruction (ECRI) suggested as interventions; and phonics, specifically alphabet recognition, with ECRI, small group suggested as an intervention.

During the third nine-week period, concerns about letter sounds continued, although nonsense word fluency had improved. Interventions were continued. Low scores in oral reading fluency produced concerns in this area, and ECRI, small group interventions were suggested. Jayden's nonsense word fluency continued to improve during the fourth nine-week period and surpassed the goal score, but fluency in oral reading remained a concern and ECRI, small-group intervention was continued.

For 20 minutes each day, five days a week, the general education teacher gave reading instruction to Jayden and four other students using the Harcourt Intervention with ECRI methodology. In addition, for 20 minutes a day, four days a week, a Title I assistant gave reading instruction to Jayden and two to four other students using the five-step lesson plan. One day a week, the Title I assistant worked with Jayden alone for 10 minutes.

Progress monitoring for Tier 2. Table 5.8 shows

Jayden's progress monitoring scores for Harcourt Holistic Listening Comprehension measures. The table also lists the scores corresponding to mastery and indicating potential risk. These measures were collected about every seven weeks. The school is currently evaluating this frequency with the hope that they will administer progress monitoring measures for Tier 2 more frequently in the future.

School staff also monitored Jayden's progress on the individual interventions and administered the ECRI Mastery Test to assess his progress. Results of these assessments are unavailable.

In January, the school decided that Jayden was making limited progress, as measured by both his class work and DIBELS screens. His DIBELS scores indicated that he finally did meet and surpass the benchmark of 35 on phoneme segmentation fluency; however, Jayden should have obtained this score by the end of kindergarten. His nonsense word fluency score of 30 was at the bottom range of "moderate risk." His oral reading fluency score of 18 words correct per minute with 11 errors was in the "high risk" category. These scores showed some improvement but not enough to meet grade-level expectations. The team decided he needed more assistance, so they moved on to Tier 3 interventions.

Table 5.8. Jayden's Harcourt Holistic Listening Comprehension Progress Monitoring Scores

Harcourt Holistic Listening Comprehension	Date	Jayden' Scores	At-Risk Indicators
Book 1-1	November	100%	Mastery = 80% At Risk = 60%
Book 1-2	December	90%	
Book 1-3	February	100%	
Book 1-4	April	50%	
Book 1-5	May	80%	

Tier 3

Due to Jayden's continued low scores, the first-grade general education staff and members of the student support team gave Jayden Tier 3 instruction in addition to Tier 2 instruction. Tier 3 instruction included individual instruction with Earobics for 15 minutes a day for three days a week and a sight word drill sandwich activity, which was used five to 10 minutes a day, three times a week in a small group of three students.

Progress was monitored weekly with Earobics and every nine weeks for the sight word activity. In addition, the reading strategy teacher used the AIMSweb Global Progress Monitoring Tool nearly every week to assess oral reading fluency.

Table 5.9 shows Jayden's progress monitoring scores using Earobics measures. The Student Support Team set a goal of 80 percent correct for the average of Jayden's Earobics scores across time. Jayden accomplished an average score of 73 percent, which was below the target goal.

Table 5.10 on page 5.34 shows Jayden's progress-monitoring scores for the sight word drill sandwich activity and the established cut scores for indicating risk. The goal of the sight word drill is an increase of two words per week.

Table 5.11 on page 5.34 shows Jayden's oral reading fluency progress-monitoring scores. The goal for Jayden was to read 43 words correctly per minute with four errors. The expected rate of improvement was an increase of 1.86 words read correctly per minute per week. The table shows Jayden's average rate of improvement was 0.73 words read correctly per minute per week.

Table 5.9. Progress Monitoring for Earobics for 2004–2005

Date	11/29	12/06	12/13	12/20	1/03	1/24
Jayden's Scores	60%	90%	60%	80%	70%	80%

Table 5.10. Progress Monitoring—Sight Word Drill Sandwich Activity 2004 – 2005

Date	8/19	10/20	1/18
Jayden's Scores	2 words	21 words	42 words
Cut Score		18 words	43 words

Table 5.11. Progress Monitoring for AIMSweb ORF for 2004 – 2005

Date	2/14	2/18	2/21	2/28	3/07	3/18	3/21	4/4	4/11	4/25
Student Score	17 words read correctly per minute with 9 errors	14/6	20/10	20/8	16/8	27/9	19/10	19/8	25/8	23/5

The student support team evaluated Jayden's intervention progress and found that the intervention addressing phonemic awareness using Earobics showed limited effectiveness. Jayden did not meet his goal of an average of 80 percent correct across time.

Jayden did meet his goal on the sight word intervention.

Based on research in oral reading fluency, the team set Jayden's goal for increasing his oral reading fluency rate by 1.86 words read correctly per minute per week, which falls between a Realistic level (an increase of 1.5 words read correctly per minute per week) and an Ambitious level (an increase of 2.0 words read correctly per minute per week). However, Jayden's oral reading fluency global progress monitoring scores showing an increase per week of 0.73 words read correctly per minute was well below his target.

Based on a synthesis of data from prior assessment in phonemic awareness and phonics (Fox in a Box) and the intervention results above, the team determined that Jayden needed a more intensive and structured phonics-based program. The team noted that many of the extra resources available to carry out such a program in first grade would not be available in second grade because Title V dollars were limited to first grade (and have now been cut completely). Thus, the team decided to add Tier 4 interventions to Jayden's reading instruction. (See *Disability and Eligibility Determination* on page 5.35 and *Tier 4 – Special Education* on page 5.36.)

Second Grade (2005–2006)

Tier 1

In second grade, Jayden's general education (Tier 1) reading instruction continued to consist of the Harcourt Trophies Series for 120 minutes each day, five days a week. Instruction was provided to the whole class (approximately 20 students) and to small groups (seven students). Seven students were in Jayden's group.

Screening. During second grade (current year), the school administered Harcourt Oral Reading Fluency (HORF) assessments to Jayden in September and January. Table 5.12 shows Jayden's scores compared to the established cut scores.

The school decided that Jayden needed Tier 2 interventions because he displayed classroom performance well below his peers and he did not meet his goals on his interventions. Jayden's September Harcourt Oral Reading Fluency screening data of 41 correct words per minute was below the cut score of 54.

Table 5.12. Jayden's Harcourt Oral Reading Fluency Scores

Assessment	Jayden's Scores	At Risk Cut Score
Sept HORF	41 correct words per minute	< 54 correct words per minute
Jan HORF	71 correct words per minute	< 78 correct words per minute

Tier 2

Again, as in first grade, school personnel administered Fox in a Box diagnostics to determine Jayden's current specific needs. This is typical for all students who will receive Tier 2 interventions.

In Jayden's 2005 and 2006 Elementary Reading Academic Improvement Plan for the first nine weeks of second grade, school staff noted that fluency was an area of concern; Quick Reads was suggested as an intervention. Other interventions named were Decodable Books (phonics), small group work (vocabulary), and Harcourt Intervention/Level Readers (comprehension). In addition, Jayden's fall scores on Fox in a Box and STAR assessments indicated specific needs in the areas of spelling/decoding and speed/accuracy. Decodable Books, Quick Reads, and small-group work would continue as interventions. Jayden met the goal for comprehension on the Fox in a Box assessment, but his second-grade, fall Harcourt Holistic comprehension scores were below the cut score of 60 percent.

Table 5.13 shows Jayden's progress monitoring scores on the Harcourt Holistic Comprehension assessment and lists the at-risk indicator cut scores. These measures were collected about every seven weeks. The school is currently evaluating this frequency with the hope that they will administer progress monitoring measures for Tier 2 more frequently in the future

Table 5.14 shows Jayden's oral reading fluency progress monitoring scores. The goal for Jayden was to read 90 words correctly per minute with nine errors on second-grade standard progress monitoring passages. The expected weekly rate of improvement was 2.05 words read correctly per minute. The table shows Jayden's average weekly rate of improvement to be -5.00 words read correctly per minute.

Table 5.13. Progress Monitoring For Tier 2 • Harcourt Holistic Comprehension

Date	Jayden' Scores	At Risk Indicators
September October December February	50% 59% 55% 86%	Mastery = 80% At Risk = 60%

Table 5.14. Progress Monitoring for AIMSweb ORF for 2005 – 2006

Date	1/16	1/30								
Student Score	52 wcm / 4 errors	42/5								

Disability And Eligibility Determination

November 2004: Jayden's parents were notified that the student support team would discuss Jayden's academic problems and consider potential solutions to those problems.

January 2005: The student support team met to consider solutions to Jayden's reading problem.

February 2005: The student support team met to discuss student data.

March 2005: The student support team decided that Jayden needed further evaluation. The school psychologist will conduct a formal evaluation.

Disability and eligibility determination was based in part upon Jayden's response to interventions instituted during his first-grade year. First, a change in instructional method was undertaken and involved an approach advocated by the Exemplary Center for Reading Instruction (ECRI). This intervention was combined with the use of a Language Master for sight word identification and "drill sandwich" practice in which new words are mixed with known words, resulting in significant progress as measured against predetermined goals. However, a closer look at phonemic awareness yielded a concern with reading at this level and resulted in the development of a second intervention involving a change in curriculum (to the Harcourt Intervention Curriculum and Earobics), instruction (supplementing classroom instruction with computer-assisted instruction), and environment (to a small-group setting). Progress monitoring revealed inadequate response to the intervention.

The team also made note of the extraordinary amount of resources being used to generate this small amount of improvement. Many of the extra resources available to this student in first grade would not be available in second grade because Title V dollars were limited to first grade at the time (as of March 2006, these funds were cut completely).

Aware that the extra resources available to this student in first grade would not be available in second grade and concerned about the minimal amount of improvement, the team asked for a psychoeducational evaluation, including intellectual assessment (Differential Abilities Scales), academic ability assessment (Wechsler Individual Achievement Test), and cognitive processing assessment (Jordan Left-Right Reversal Test and Woodcock-Johnson Tests of Cognitive Development). Testing took place in June, at the end of Jayden's first-grade year. Based upon current state requirements, the student was determined to have a specific learning disability and entitled to receive appropriate exceptional student education services based upon a significant discrepancy between his measured intellectual ability and his achievement scores with accompanying cognitive processing deficits. See Table 5.16 beginning on page 5.37 for a list of the components of the comprehensive evaluation.

Tier 4 - Special Education

Jayden's Special Education Reading Intervention Curriculum includes Harcourt Intervention with added five-step research-based lesson planning Extensions in Reading series for comprehension for 45 minutes per day, four days a week. Jayden's general education teacher and the exceptional education teacher provide the instruction. Jayden's instructional group consists of two students.

Special education – progress monitoring. Jayden's progress will be monitored every two weeks. Measures will be from all Tier 1 and Tier 2 assessments, AIMSweb ORF, and AIMSweb Maze. The at-risk cut scores for both the AIMSweb ORF and Maze assessments are < 25 percent. Table 5.15 shows Jayden's AIMSweb oral reading fluency scores. His January 16 score of 52 words read correctly per minute with four errors places him at the 25th percentile. The exceptional education team set a goal to move Jayden closer to the 50th percentile. A target of 90 words read correctly per minute with nine errors would put him slightly below the 50th percentile. For second grade, an "ambitious" goal is to gain two words read correctly per minute per week. Jayden's goal was just slightly higher at 2.05 words read correctly per minute per week.

Table 5.15. Progress Monitoring for AIMSweb ORF for 2005 – 2006

Date	1/16	1/23	1/30	2/06	2/13	2/20	2/22	3/01	3/08
Student Score	52 words correct per minute with 4 errors	53/4	42/5	58/4	72/4	67/1	68/1	65/2	73/3

Table 5.16. Comprehensive Evaluation Components and Measures for SLD Determination (Jayden)

Component	Test or Meeting Date	Assessment/Procedure	Type of Data or Score	Cut-Off/ Criteria	Analysis/ Manipulation of Score Comments
Multifaceted	11/9/04	Data from our process of reviews, interviews, & observations identified reading as the area of concern, ruling out the need for testing of additional areas at this time; Math reported as a strength by teacher	Review of records, interviews with teacher & student, observations	NA	•To determine presence of other areas of concern
Intellectual Ability	6/1/05	Differential Abilities Scale	General Cognitive Ability SS = 118	≥ 70	•Check for scatter and rule out mental handicap •Collaboration with other data
Aptitude-Achievement Discrepancies	6/1/05	Wechsler Individual Achievement Test, Second Edition	Reading Comprehension SS = 107; Pseudoword Decoding SS = 99	≥ 1 sd below intellectual ability measure	• To determine the discrepancy between ability and achievement • Also testing of limits and error analysis
Intra-individual Differences	9/04 9/04 9/04 10/04	DIBELS Letter Naming Fluency DIBELS Phonemic Segmentation Fluency DIBELS Nonsense Word Fluency Fox in a Box	12 Letters CPM 20 Segments CPM 5 Sounds CPM Level 1 Spelling Level 2 Alphabet identification Level 2 Decoding Level 2 Sight Word ID	< 25 < 10 < 13 Established criteria based on number correct	• To assist in determining the degree of disparity between student and same-age peers
Information or Language Processing Involvement	6/1/05	Woodcock Johnson Test of Cognitive Abilities, Third Edition	Processing Speed Cluster SS = 90	≥ 1 sd below intellectual ability measure (118)	• Analysis of raw data and observations of test behaviors • Noted similar response patterns on achievement test
CNS (Central Nervous System) Involvement	12/15/04 6/1/05	Observation, language screening, intellectual assessment	Gross indicators of dysfunction (none observed); Clinical Evaluation of Language Fundamentals - 4 total test score = 21; Differentiated Abilities Scale (DAS) General Cognitive Ability (GCA) = 118	Harcourt's PsychCorp Screening Test (CELF-4) criterion for passage = 16; DAS GIA standard score ≥ 70	• Used to assess presence of indications of processing deficits

See pages 5.57-5.61 for descriptions and reference information for the assessments listed in this table.

Component	Test or Meeting Date	Assessment/Procedure	Type of Data or Score	Cut-Off/ Criteria	Analysis/ Manipulation of Score Comments
Exclusionary Criteria	11/22/04 11/09/04	Sensory screenings Review of records	Pass both areas at all levels	Hearing indicated at 25 db at 1000, 2000, and 4000 Hz; Vision 20/20 at far and near distance	• Assess vision, hearing, and possible language acquisition issues • No problems noted; English is first language
Behavioral and Academic Screening	11/09/04 11/09/04 11/09/04	Teacher Checklist Kaufman Brief Intelligence Test, 2nd Ed. (K-BIT 2) Wechsler Individual Achievement Test (WIAT – II)	Presence of strengths checked KBIT-2 Composite SS = 103 Verbal Composite SS = 112; Nonverbal Composite SS = 134 WIAT-II Word Recog. SS = 95 Num. Op. SS=96 Spelling SS = 96	Strengths noted SS ≥ 70 Discrepancies among subtests within instruments ≥ 18 points	• Used to rule out other concerns/ contributing factors; checked for scatter • Non-verbal score much higher than verbal on K-BIT 2 • Achievement scores consistent
		DIBELS Letter Naming Fluency	12 Letters CPM	< 25	
		DIBELS Phonemic Segmentation Fluency	20 Segments CPM	< 10	
		DIBELS Nonsense Word Fluency	5 Sounds CPM	< 13	
		Fox in a Box	Level 1 Spelling Level 2 Alphabet identification Level 2 Decoding Level 2 Sight Word ID	Established criteria based on number correct	

See pages 5.57-5.61 for descriptions and reference information for the assessments listed in this table.

Component	Test or Meeting Date	Assessment/Procedure	Type of Data or Score	Cut-Off/ Criteria	Analysis/ Manipulation of Score Comments
Appropriate Learning Experiences	Reviewed 1/11/05	Student participated in pre-k early intervention programming due to speech impairment. Received kindergarten and first-grade instruction with progress monitoring using DIBELS three times annually. Documentation of interventions with observations to ensure fidelity of implementation supports the appropriateness of learning experiences. Student was monitored on an Academic Improvement Plan	NA	NA	NA
	2/15/05	Responsiveness-to-Intervention	Level and slope of trend line on sight word acquisition and phonemic awareness assessments	3 data points below aim line	• One intervention was successful in increasing words identified correctly but did not have a beneficial effect upon other indicators of reading achievement
Social Skills Deficits		Teacher Checklist	Presence of strengths	Missing skills indicate a need for further screening	• Used to rule out social skills deficits • Missing skills not noted
Adaptive Behavior		Informal observation & teacher interview	Anecdotal information	Missing skills indicate a need for further screening	• Examination for indicators of need for further screening • Missing skills not noted
Parents' Role		Parents were involved in development/ implementation of interventions and were informed of outcomes and further team efforts to enhance their child's learning. They were notified and gave permission for assessment. As part of the eligibility team, they agreed to eligibility and placement and helped to develop goals and objectives. They were informed of their due process rights.	NA	NA	NA

See pages 5.57-5.61 for descriptions and reference information for the assessments listed in this table.

Component	Test or Meeting Date	Assessment/Procedure	Type of Data or Score	Cut-Off/ Criteria	Analysis/ Manipulation of Score Comments
Eligibility Decision and Professional Judgment		Team examination of all available data	All available data, including input from all members of the team	See comments – next column	• Comparison of available data with possible explanations for that data and with state-established criteria for eligibility •Inadequate response to intervention, adequate response to interventions only with a level of intervention/support that cannot be sustained in a general education setting without outside support, and a discrepancy of ≥ 1 *sd* between the measure of intellectual ability and both the academic achievement score and a score of cognitive processing that is assumed to be a major contributing factor.
Special Education Exit Criteria	NA	Recommendation of the IEP team based on one of the following criteria: 1. When the student has made sufficient progress in meeting the goals of the IEP and has successfully completed a trial placement in the general curriculum in which the ability to function adequately, considering intellectual level, has been demonstrated, or 2. Where the student successfully completed a trial placement in the general curriculum program in which the ability to function adequately, considering intellectual level, has been demonstrated, or 3. When the student demonstrates successful achievement in the general curriculum without support, or that the disability no longer interferes with the student's ability to function in the educational program.	Report card grades, regular classroom work samples, documentation of mastery of a sufficient percentage of the required basic skills	Lack of success in meeting IEP goals and/or functioning in the general curriculum program	•To determine success in meeting IEP goals and functioning in the general curriculum program • Has not arrived at this place yet

See pages 5.57-5.61 for descriptions and reference information for the assessments listed in this table.

Does your model allow for SLD to co-exist with __MR? X E/BD? * sensory impairments? * motor impairments?

* Although a student with sensory or motor impairments may have a concurrent specific learning disability, the determination of the specific learning disability must rule out the sensory or motor impairment as the exclusive explanation for the lack of educational achievement.

Case Study: Lauren

Reading: Third Grade (2004–2005) and Fourth Grade (2005–2006)

Lauren is a 10-year-old Caucasian girl. She is in third grade and has not been retained.

Third Grade (2004–2005)

General Education - Tier 1

Lauren's third-grade teacher uses the Macmillan/McGraw-Hill reading program/series for 60 minutes each day for reading instruction. Between 16 and 20 students are in Lauren's general education reading group.

Tier 1 Screening – Reading. The Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT) are used to gather school-wide screening measures/benchmarks for reading.

Lauren's scores on these assessments are shown in Tables 5.17 and 5.18. Because Lauren scored below grade level on the IRI and below basic proficiency on the ISAT, school staff included Lauren in Tier 2 interventions.

Table 5.17. Lauren's Idaho Reading Indicator (IRI) Scores

Dates	Lauren's Scores	Cut Scores To Designate At Risk
9/21/04	2 (88/154) – near grade level	118
1/21/05	1 (115/188) - below grade level	156
5/11/05	1 (148/255) - below grade level	196

Table 5.18. Lauren's Idaho Standards Achievement Test (ISAT) Scores

Dates	Lauren's Scores	Cut Scores To Designate At Risk
Sept./Oct. 2004	166 Rash Unit (RIT) points – below basic proficiency	ISAT proficiency score is 193
April/May 2005	184 RIT points – below basic proficiency	
Sept./Oct 2005	184 RIT points – below basic proficiency	

Tier 2

Tier 2 interventions. The classroom reading teacher spent 60 minutes each day of the week using Phonics for Reading, Read Naturally, and Making Words. Instruction was provided for a small group of five students.

Tier 2 progress monitoring. Table 5.19 shows Lauren's scores on DIBELS oral reading fluency assessments using first-grade reading probes. Lauren's goal was to correctly read 86 words per minute. Because Lauren had three data points below the aim line, school staff placed her in Tier 3 instruction. In Tier 3, she received additional time with interventions and was placed in a group of only two students.

Table 5.19. Lauren's Tier 2 Progress Monitoring DIBELS Oral Reading Fluency Scores

Date	Correct Words Per Minute	Fluency Percent Accuracy	Indicators of Risk
10/18/04	68	94%	Third-Grade Spring District CBM Benchmark: 120 correct words per minute
10/26/04	59	89%	
11/04/04	59	97%	
11/08/04	58	88%	
11/15/04	59	88%	
11/25/04	49	94%	
12/01/04	58	Not Noted	
12/16/04	68	94%	
12/17/04	68	Not Noted	
12/20/04	Christmas Vacation		
12/27/04			
1/06/05	62	Not Noted	
1/13/05	78	95%	
1/20/05	70	95%	

Tier 3

Tier 3 interventions (2004–2005). The instructional assistant spent an additional 30 minutes each day of the week using Phonics for Reading, Read Naturally, and Making Words. Two students were in Lauren's Tier 3 instructional group.

Tier 3 progress monitoring. Table 5.20 shows Lauren's scores on DIBELS oral reading fluency measures using first-grade reading probes (through February) and second-grade probes (after February). At the end of April 2005, Lauren was reading at a rate of 72 correct words per minute. A typical third-grade student is reading 120 correct words per minute on grade-level materials.

Table 5.20. Third-Grade Tier 3 Progress Monitoring – DIBELS Oral Reading Fluency

Date	Correct Words per Minute	Fluency Percent Accuracy	Indicators of Risk
Using First-Grade Reading Probes			District CBM Benchmarks First-Grade Spring CBM Benchmark: 54 CWPM Second-Grade Spring CBM Benchmark: 94 CWPM Third-Grade Spring CBM Benchmark: 120 CWPM
1/25/05	66	94%	
1/31/05			
2/10/05	73	90%	
2/18/05	88	88%	
2/24/05	69	88%	
2/28/05	72	96%	
Changed Progress Monitoring Tool To Second-Grade DIBELS Probes			
3/08/05	88	97%	
3/14/05			
3/23/05	79	93%	
3/28/05	Spring Break		
4/07/05	66	92%	
4/14/05	75	97%	
4/20/05	82	87%	
4/28/05	72	86%	

Disability and Eligibility Determination

Eligibility determination is based on academic testing, intellectual testing, IRI, ISAT, classroom observation, work samples, and responsiveness to intervention.

In addition, the following information was used to determine disability and eligibility:

Evidence of resistance to interventions. Lauren has had more than two years of direct reading intervention since her Intervention Plan was initially written January 15, 2003. Interventions have included Read Naturally, Lindamood Bell, Edmark, and Open Court. In second and third grade, she participated in reading switch (one hour per day, five days a week) in which instruction was differentiated for her reading level. In addition, she received small-group instruction with the school's special education teacher to help minimize environmental issues that could be affecting her rate of progress, such as the possibility of her inability to filter out noise and activities occurring around her. Her pre-intervention level of performance indicated she had a discrepancy ratio of 3.13 when comparing her performance (32 correct words per minute) to typical peers (100 correct words per minute). She continued to make steady, albeit slow, progress. Lauren's progress was monitored with first-grade reading probes using DIBELS. The goal set for her was that, within nine weeks, using grade-level passages within the general education classroom, she should read orally at a median rate of 100 words read correctly per minute.

A formal follow-up meeting was held on March 9, 2004. Lauren continued progress above her aim line. One concern the team had was the amount of instruction missed over several weeks due to surgery to remove her adenoids and tonsils. A change in the music schedule affected her reading instruction time. However, she ended at 45 correct words per minute and seemed to be making positive progress.

Another formal follow-up meeting was held at the end of Lauren's second-grade year, in May 2005. It was reported that she was doing great in all areas in the classroom. Her reading progress monitoring continued to show an upward trend. Her median score over the previous three weeks was 69, although her last score was a 59, demonstrating an inconsistency in retention of skill acquisition. She scored a "2" on the Idaho Reading Indicator (IRI) in the spring of 2004. A score of "1" indicates achievement below grade level. A score of "2" indicates achievement near (but below) grade level. Her words per minute score on the IRI was 52, nonsense words score was 35 out of 50 points, sight words score was 9 out of 10, and comprehension was 100 percent.

When Lauren was in third grade, reading interventions and progress monitoring continued during the fall of 2004. Her base line was 68 correct words per minute with 94 percent accuracy on first-grade reading probes. Her goal was 86 correct words per minute with 98 percent accuracy on first-grade probes. As indicated on her progress-monitoring graph, she continued to demonstrate a slow rate of skill acquisition and inconsistency of accuracy. On January 24, 2005, an additional intervention of 30 minutes of pre-teaching, or "front-loading," was added. During this 30 minutes, time was spent preparing Lauren for the coming reading instruction.

Following a decision rule to consider changes for a student when probes result in three consecutive data points above or below the aim line, a change was made for Lauren. Beginning on March 8, 2005, second-grade reading probes were used for progress monitoring. It was noted that her skills regressed after spring break (from 79 correct words per minute to 66 correct words per minute). She continued to demonstrate inconsistency and slow rate of skill acquisition.

Consideration of resources necessary to support the student to participate and progress in the general education curriculum being beyond those available in the general education curriculum. Although Lauren's reading skills have improved, they have not improved at the rate necessary to bring her to near grade level, despite more than two years of direct and intense interventions. She will need direct and small-group instruction for an indefinite period. Academic support as well as curricular modifications and adaptations within the general education classroom are also necessary.

Evidence of severe discrepancy from peer's performance in the areas of concern. Lauren's fluency on second-grade probes is 72 correct words per minute. This is more than 1.5 times discrepant from the expected benchmark on the third-grade DIBELS probes. She scored "2," then "1," then "1" consecutively on the three administrations of the Idaho Reading Indicator during third grade and scored 1 then 2 during both trials given in second grade. On the Idaho Standards Achievement Test (ISAT) ad-

ministered in fall 2004, her Rash Unit (RIT) score of 166 on the Idaho Standards Achievement Test was below basic at the third-grade level and 28 points below proficient at a third-grade level. This score represents the 17th percentile.

In addition, a curriculum-based evaluation was performed (01/31/05) using the Comprehensive Test of Phonological Processing (CTOPP). Lauren showed low-average ability in phonological awareness with a strength in blending and segmenting non-words. Her phonological short-term memory and fluency scores put her in the average range. Her responses suggested strength in rote memorizations and recall but a weakness in concept formation and reasoning skills. Helping her recognize patterns and how information compares to prior knowledge is also a key in helping her learn basic skills.

Convergence of evidence that logically and empirically supports the team's decisions. All information obtained through the evaluation and interventions process supports this student's educational need and eligibility for special education in the area of reading. She will continue to require an individualized plan for intense and sustained interventions and support to benefit and progress in the general education curriculum.

An evaluation team will determine that a student is eligible for special education services as a student with a learning disability when all of the following criteria are met:

1. An evaluation that meets the criteria specified in the State Special Education Manual has been conducted.
2. A team member other than the student's general education teacher has observed the student's academic performance in the general education classroom to document relevant behavior.
3. A comparison of assessment results determines that a severe discrepancy exists between intellectual ability and achievement in one or more of the following areas: oral expression, listening comprehension, written expression, basic reading skills, reading comprehension, mathematics calculation, or mathematical reasoning. A severe discrepancy exists when the broad area score on an achievement test is 15 or more standard score points below a regressed full-scale intellectual ability score. When the broad area score is within 15 standard score points of the regressed full-scale intellectual ability score, but a subtest score is 15 or more points lower than the regressed full-scale intellectual ability score, the evaluation team may use professional judgment to determine whether a severe discrepancy exists.
4. The severe discrepancy between ability and achievement is not primarily the result of a visual, hearing, or motor impairment; a cognitive impairment; emotional disturbance; or environmental, cultural, or economic disadvantage.

It was determined that Lauren's primary disability is a learning disability.

Special Education

Special education reading intervention curriculum. An instructional assistant works with Lauren and two or three others in a small group for one hour a day, five days a week. The interventions are Read Naturally and Spelling Mastery.

Special education progress monitoring. The measures used in special education to determine progress include DIBELS/Running Records (data collected biweekly), comprehension questions from Read Naturally (data collected weekly), and Spelling Mastery (data collected daily). Table 5.21 on page 5.46 shows Lauren's progress monitoring scores on DIBELS oral reading fluency assessments.

Table 5.21. Special Education Progress Monitoring • DIBELS Oral Reading Fluency

Date	Correct Words Per Minute	Fluency Percent Accuracy	Indicators of Risk
With Third-Grade DIBELS Probes			District CBM Benchmarks First-Grade Spring CBM Benchmark: 54 correct words per minute Second-Grade Spring CBM Benchmark: 94 correct words per minute Third-Grade Spring CBM Benchmark: 120 correct words per minute
9/16/05	86 correct words per minute	94%	
9/23/05	76	93%	
9/30/05	74	76%	
10/14/05	93	96%	
10/21/05	86	82%	
11/04/05	111	95%	
11/18/05	96	93%	
12/02/05	95	99%	
12/09/05	112	95%	
12/16/05	105	92%	
With Fourth-Grade DIBELS Probes			
1/06/06	75	88%	
1/13/06	85	86%	
1/20/06	89	91%	
1/27/06	75	92%	

Table 5.22. Comprehensive Evaluation: Components and Measures for SLD Determination (Lauren)

Component	Test/Meeting Date	Assessment/Procedure	Type of Data & Score	Criteria	Comments
Multifaceted	2003–2005	CTOPP – Phonological Awareness	Standard Score (SS) sums=14; %ile=12	Analysis of scores is dependent on what was used and why.	We used Achievement and IQ scores to validate the RTI process.
		CTOPP – Phonological Memory	SS sums=19; %ile=42		
		CTOPP – Rapid Naming	SS sums=17; %ile=27		
		CTOPP – Alt. Phon. Awareness	SS sums=24; %ile=79		
		CTOPP – Alt. Rapid Naming	SS sums=13; %ile=8		
		WIAT-II – Word Reading	SS=84; %ile=14		
		WIAT-II – Reading Comprehension	SS=105; %ile=63		
		WIAT-II – Pseudoword Decoding	SS=80; %ile=9		
		WIAT-II – Listening Comprehension	SS=108; %ile=70		
		Stanford Binet 5 – Non-verbal IQ	SS=92		
		Stanford Binet 5 – Verbal IQ	SS=100		
		Stanford Binet 5 – Full Scale IQ	SS=96		
		DIBELS			
Intellectual Ability	3/21/05	Stanford Binet 5 – Non-verbal IQ	SS=92	Average range for SS = 7–13. Intrasubtest comparisons. State's discrepancy model for SLD uses Regressed IQ based on FS IQ.	Factor variability to help assess deficits in reasoning, also FS IQ used to determine discrepancy between ability and achievement. Collaboration with other data.
		Stanford Binet 5 – Verbal IQ	SS=100		
		Stanford Binet 5 – Full Scale IQ	SS=96		
Aptitude-Achievement Discrepancies	4/05/05	WIAT-II	Composite Std. Scores Reading: 87 Math: 82 Written Language: 95 Oral Language: 106	Regresses IQ = Achievement composite scores to demonstrate "state discrepancy" need to be ≤ 83 for this case	Strengths and weaknesses determined by scatter
	1/5/03 – 4/25/05	RTI method also used	DIBELS benchmarks: correct words per minute. Using research-based interventions.	Data driven	Data collected to determine response to interventions, discrepancy ratio (comparison of student's performance to typical peers), and rate of skill acquisition.

See pages 5.57-5.61 for descriptions and reference information for the assessments listed in this table.

Component	Test/Meeting Date	Assessment/Procedure	Type of Data & Score	Criteria	Comments
Intra-individual Differences	WIAT-II: 4/05/05 Stanford-Binet: 3/21/05	WIAT-II Word Reading – below avg. Pseudoword Decoding – ” Reading Comprehension – avg. Math Reasoning – below avg. Numerical Operations – ” Spelling – below avg. Written Expression – avg. <u>Processing assessments</u> <u>Stanford-Binet subtests</u> VERBAL Fluid Reasoning Knowledge Quantitative Reasoning Visual Spatial Working Memory NONVERBAL Fluid Reasoning Knowledge Quantitative Reasoning Visual Spatial Working Memory	Standard Scores 84 80 105 82 85 83 109 <u>Sum: Nonverbal & Verbal Scaled Scores</u> FR = 12 KN = 11 QR = 6 VS = 11 WM = 10 FR = 7 KN = 6 QR = 10 VS = 9 WM = 12	SLD discrepancy model requires SS of 83 or lower to qualify as a student with learning disabilities under current state criteria	WIAT-II scores are compared to IQ scores Strengths with short-term and visual memory, verbal reasoning and blending and segmenting nonwords. Concerns include verbal quantitative reasoning and concept formation used for higher-level problem solving
Information or Language Processing Involvement	1/31/05	CTOPP	SS – see above	N/A	Strengths and weaknesses determined by scatter
CNS (Central Nervous System) Involvement	3/21/05	Assessed through the Stanford-Binet 5, looking at several processes: memory, attention, visual-spatial reasoning.	SS	N/A	Strengths and weaknesses determined by scatter
Exclusionary Criteria	N/A	Student has an average IQ and disability not due to lack of instruction or limited English proficiency	N/A	N/A	N/A
Behavioral and Academic Screening	N/A	Student is friendly and likable. She fits in with her peers, and at the time, there were no concerns about her social development. Academic screening is done in part through the WAIT and CBMs.	N/A	N/A	N/A

See pages 5.57-5.61 for descriptions and reference information for the assessments listed in this table.

Component	Test/Meeting Date	Assessment/Procedure	Type of Data & Score	Criteria	Comments
Appropriate Learning Experiences	1/15/03	Interventions have included Read Naturally, Lindamood Bell, Edmark, and Open Court.	DIBELS benchmarks	Interventions and progress are assessed weekly. Interventions are changed as needed	Response to intervention, comparing present level of performance to goal.
Social Skills Deficits	N/A	N/A	N/A	N/A	N/A
Adaptive Behavior	N/A	N/A	N/A	N/A	N/A
Parents' Role	2003–2005	Parent involvement from initial intervention plan on, such as with follow-up meetings, permission to assess using standardized tests, and enrollment in special education	N/A	N/A	IDEA procedural safeguards are given with permission to assessment (leading to special education)
Eligibility Decision and Professional Judgment	4/29/05	IEP team makes eligibility decisions based on all evidence. Student is 1.6 times discrepant from peers.	Collaborative data	State criteria must be met for eligibility (either SLD or noncategor-ical).	To determine specific learning disability or noncategorical eligibility. Individual schools must apply with the state department of education to be able to use noncategorical eligibility.
Special Education Exit Criteria	N/A	This student now has an Individual Plan (or program) with specific goals and objectives. Once these goals have been met, an evaluation will take place through standardized assessments to consider exit.	N/A	N/A	N/A

See pages 5.57-5.61 for descriptions and reference information for the assessments listed in this table.

Case Study: Michael

Reading: Kindergarten (2003 – 2004) — Second Grade (2005 – 2006)

Michael is a 7-year-old Caucasian male. He is in second grade and has not been retained.

Kindergarten (2003 – 2004)

General Education - Tier 1

During kindergarten, Michael's general education (Tier 1) reading instruction consisted of 60 minutes each day, five days a week, with Open Court. The general education teacher gave reading instruction to the whole class and also to small groups. Michael's group comprised five students, and small-group instruction also consisted of Open Court.

Tier 1 screening - reading. The school administered DIBELS assessments three times each year: in the fall, winter, and spring. Table 5.23 shows Michael's DIBELS scores as well as the cut scores that indicate risk.

Tier 1 screening – behavior. No data were collected on behavior.

Tier 2

Tier 2 interventions. Michael received Tier 2 interventions in kindergarten. The Title I teacher used Optimize with Michael and four other students for 30 minutes each day, five days a week.

In addition, Michael received small-group instruction with a classroom associate to work on letter names and sounds for 15 minutes twice each week and small-group instruction with the classroom associate for segmenting sounds, also twice a week.

Table 5.23. Michael's Tier 1 DIBELS Screening Scores – Kindergarten

Assessment	Michael's Scores	At-Risk Cut Score
Fall LNF	0 correct letter names	At risk < 2; some risk < 8
Fall ISF	3 correct sounds	At risk < 4; some risk < 8
Winter ISF	16	Deficit < 10; emerging < 25
Winter PSF	23	At risk < 7; some risk < 18
Winter NWF	7	At risk < 5; some risk < 13
Spring PSF	38	Deficit < 10; emerging < 35
Spring NWF	14	At risk < 15; some risk < 25

Scoring is as follows:

- Letter Naming Fluency (LNF) = number of letters named correctly in one minute
- Initial Sound Fluency (ISF) = number of initial sounds correct in one minute
- Phoneme Segmentation Fluency (PSF) = number of correct phonemes produced in one minute
- Nonsense Word Fluency (NWF) = number of letter-sounds produced correctly in one minute

First Grade (2004–2005)

General Education - Tier 1

In first grade, Michael's general education teacher provided (Tier 1) reading instruction for 60 minutes each day, five days a week, with Open Court. The general education teacher gave reading instruction to the whole group and also to Michael's small group of five students.

Tier 1 screening - reading. During first grade, the school administered DIBELS assessments to Michael three times – in the fall, winter, and spring. Table 5.24 shows Michael's assessment results as well as the scores that indicate possible risk.

Tier 1 screening – behavior. No data were collected on behavior.

Table 5.24. Michael's Tier 1 DIBELS Screening Scores – First Grade

Assessment	Scores	At Risk Cut Score
Fall DIBELS - PSF	51	Deficit < 10; emerging < 35
Fall DIBELS - NWF	28	At risk < 13; some risk < 24
Winter DIBELS - PSF	50	Deficit < 10; emerging < 35
Winter DIBELS - NWF	39	At risk < 30; some risk < 50
Winter DIBELS - ORF	11	At risk < 8; some risk < 20
Spring DIBELS - NWF	33	At risk < 30; some risk < 50
Spring DIBELS - ORF	20	At risk < 20; some risk < 40

Scoring is as follows:

- Phoneme Segmentation Fluency (PSF) = number of correct phonemes produced in one minute
- Nonsense Word Fluency (NWF) = number of letter-sounds produced correctly in one minute
- Oral Reading Fluency (ORF) = number of correct words per minute

Tier 2

Tier 2 intervention plan. Michael was having difficulty with nonsense word fluency (NWF) skills. His level of performance before intervention was 28.5 on NWF and 8 words per minute on first-grade reading passages. The expectation was a score of 50 on NWF and a rate of at least 20 words per minute on first-grade passages. Thus, Michael's scores exhibited a discrepancy of 21.5 words per minute for NWF and 12 words per minute for the reading passages.

The Title I reading teacher monitored Michael's progress on NWF and oral reading fluency probes weekly. If four of Michael's data points fell below his goal line, the team discussed the effectiveness of the intervention. The school psychologist helped the reading teacher in analyzing the progress-monitoring data monthly and did periodic observations.

The following goal was set: After about 12 instructional weeks, Michael will score 50 on NWF and will read at a rate of 32 words per minute on first-grade passages.

Tier 2 interventions. Michael's instruction consisted of an intensive reading curriculum, in addition to the core curricula provided in his classroom.

First-grade Tier 2 interventions included the following:

- *Read Well* with the Title I teacher for 20 minutes, five days each week. This small group comprised four students.
- *Reading Mastery* with the Title I teacher for 15 minutes, four days each week, in a one-to-one setting.
- *PALS* (a structured reading activity focused on letter-sound correspondence, decoding, phonological awareness, and sight words) with the general education teacher for 15 minutes, three days each week. There were three students in this small group.

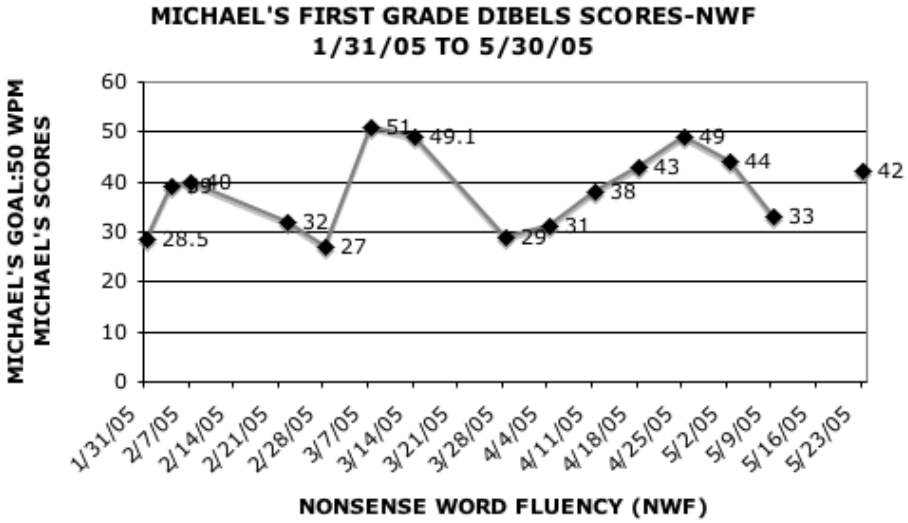
Tier 2 progress monitoring. For Michael's Tier 2 reading interventions, progress was monitored weekly. Michael's average for nonsense word fluency (NWF) was 31.5. The cut score designating responsiveness for NWF is less than 30. Table 5.25 shows Michael's DIBELS scores for nonsense word fluency as well as the cut scores that indicate pos-

sible risk. Michael's goal was to read 50 words per minutes on these assessments. *Follow-up – May 4, 2005:* Michael's mean level of performance after intervention was 31.5 words per minute for nonsense word fluency. Michael's problem was not resolved.

Table 5.25. Michael's DIBELS Scores for Nonsense Word Fluency—First Grade

Nonsense Reading Fluency (NWF)	Michael's Scores (Words per Minute)	Cut Scores
1/31 Baseline	28.5	Cut Scores for First-Grade DIBELS Nonsense Word Fluency (NWF): <u>Mid-year</u> < 30 Deficit 30-50 Emerging <u>End Of Year</u> < 30 Deficit 30-50 Emerging Michael's Goal: 50 words per minute
2/7	40	
2/4	39	
2/22	32	
2/28	27	
3/7	51	
3/14	49	
3/21	Spring Break	
3/28	29	
4/4	31	
4/11	38	
4/18	43	
4/25	49	
5/2	44	
5/9	33	
5/16		
5/23	42	
5/30		

Figure 5.1. Michael's DIBELS Scores for Nonsense Word Fluency—First Grade



Second Grade (2005–2006)

General Education - Tier 1

In second grade, Michael's general education (Tier 1) reading instruction consisted of 60 minutes each day, five days a week, with Open Court. The general education teacher gave reading instruction to a group of 25 students.

Screening. During Michael's second-grade year (current year), the school administered DIBELS nonsense word fluency (NWF) and oral reading fluency (ORF) assessments to Michael in the fall (10/24/05). These assessments will also be administered in winter (2/13/06) and spring (5/3/06). Michael's fall screening scores are shown in Table 5.26.

Tier 1 screening – behavior. No data were collected on behavior.

Table 5.26. Michael's Second-Grade Screening Scores

Assessment	Scores	At Risk Cut Score
Fall DIBELS - NWF	47 sounds	30-50 Emerging
Fall DIBELS - ORF	28 wpm	26-44 Some risk
Winter DIBELS -		
Winter DIBELS -		
Spring DIBELS -		
Spring DIBELS -		

Scoring is as follows:

- Nonsense Word Fluency (NWF) = number of letter-sounds produced correctly in one minute
- Oral Reading Fluency (ORF) = number of correct words per minute

Tier 2

Tier 2 intervention plan. Michael has low reading decoding skills. His reading scores indicate a discrepancy from peers. It would be expected that in the fall of second grade, students would read 44 correct words per minute. As of August 29, 2005, (before second-grade intervention), Michael read at a rate of nine words per minute (as shown in Table 5.27 on page 5.54, Michael's oral reading fluency progress-monitoring scores). Thus, Michael's score represents a discrepancy of 35 words per minute. This score indicates that a student is at risk.

The following goal was set for Michael: In about eight instructional weeks, Michael will correctly read at least 21 words per minute within grade-level reading probes.

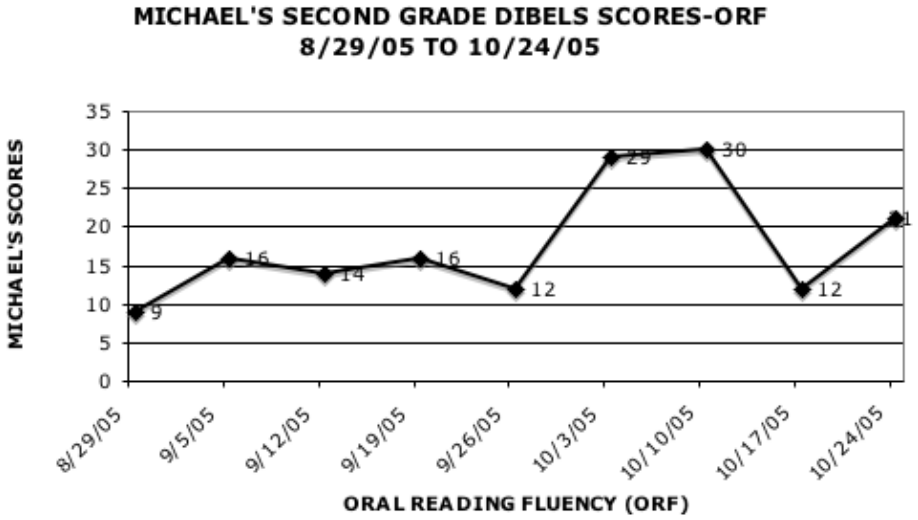
Second-grade Tier 2 interventions. The Title I teacher will work with Michael each day for 30 minutes in a small-group setting. Instruction will consist of the Reading Mastery curricula and will take place in the Title I reading room.

Second-grade Tier 2 progress monitoring. The Title I reading teacher will administer weekly reading probes. The educational consultant will assist the Title I teacher in analyzing progress-monitoring data. The trend line will be charted and graphed weekly in accordance with the established goal line. If four consecutive data points fall below the established goal line, the team will review the effectiveness of the intervention. The educational consultant will periodically observe instruction within Title I and general education reading/language arts lessons as well. Table 5.27 on page 5.54 shows Michael's oral reading fluency progress monitoring scores. Michael's progress in reading is not at the rate needed to meet district standards and benchmarks.

Table 5.27. Michael's Second Grade DIBELS Oral Reading Fluency Progress Monitoring Scores

Oral Reading Fluency (ORF)	Michael's Scores	Cut Scores
8/29	9	At Risk Fall Cut Scores < 26 At Risk 26-44 Some Risk > 44 Low Risk
9/5	16	
9/12	14	
9/19	16	
9/26	12	
10/3	29	
10/10	30	
10/17	12	
10/24	21	

Figure 5.2. Michael's Second Grade DIBELS Oral Reading Fluency Progress Monitoring Scores



Disability and Eligibility Determination

A student is considered eligible for special education services when a team of professionals and the parents consider the relevant information and determine

1. that the student has a disability
2. that the student's needs cannot be met with general education resources alone and special education resources are needed to meet the student's needs

Disability determinations are based on educational progress, discrepancy, educational needs, progress monitoring, and DIBELS benchmarks. Discrepancy is the difference between a student's level of performance and the level of performance of peers or standards of expected performance for students of his or her age or grade. Discrepancy data help the team determine the significance of concerns about a student. The team needs this information to determine whether the student has a disability and whether or not the concerns can be addressed with general education resources. Table 5.28 on page 5.55 shows Michael's oral reading fluency and nonsense word fluency scores as well as the discrepancy between his scores and expected performance on these measures.

Table 5.28. Michael's Oral Reading Fluency and Nonsense Word Fluency Scores

Date	Data Source	Michael's Performance	Expected Performance	Discrepancy
11/21	ORF	21 words read correctly per minute	58 words read correctly per minute	– 37
11/21	NWF	47 sounds correct per minute	60 sounds correct per minute	– 13

Special Education

Special education intervention plan. Information used to determine instructional needs for Michael included a review of records; a review of Michael's work; interviews with Michael, a parent, or teacher; observations of Michael; and curriculum-based evaluation.

Instructional goals: Michael would benefit from the following: direct and explicit instruction, a preview of new or unfamiliar vocabulary, opportunities to respond to direct questions, and relatively immediate feedback. Michael also would benefit from strategies that allow him to receive multiple, meaningful examples and a repetition of concepts.

Michael needs continued direct instruction with basic decoding skills. He needs practice discriminating between the long and short vowel sounds. Words with vowel teams are also difficult for him. He does not consistently identify consonant blends or digraphs and needs explicit instruction in these areas. Although his sight word development appears as a general individual strength, he needs further sight word instruction within his overall reading program. Continuing in the Reading Mastery curriculum would address many of his decoding needs. The controlled vocabulary that is used in the lessons will allow him to practice reading passages with more fluency and accuracy.

Michael will benefit from modifications and accommodations due to the overall deficit nature of his reading, writing, and math skills. He needs to have extended time to complete assignments in which extensive reading and writing are required because of fluency and accuracy delays in both areas, or it may be appropriate to have particular assignments shortened so the assessment focuses more on his knowledge of content materials than his reading and writing skills. At times, it may be appropriate to have Michael dictate responses or allow him to respond orally to evaluate his actual comprehension of concepts.

Michael will likely benefit from materials being read aloud to address reading fluency/accuracy delays and will benefit from opportunities to receive a pre-teaching and/or repetition of new vocabulary as well. Michael may benefit from spelling errors not being counted as part of grades or having an adult or peer assist Michael with editing before turning in final copies.

Michael will benefit from any opportunities to receive instruction and feedback in a small group or one-to-one setting. He benefits from opportunities to work at a modified pace and to receive structured feedback and repetition.

Tier 3 special education interventions. The special education teacher works with Michael using Reading Mastery I for 45 minutes a day. There are four students in this small group.

Tier 3 special education – progress monitoring. Michael's teacher uses accuracy rate, level, and sloped tier lines for oral reading fluency to monitor Michael's progress weekly in special education.

To designate responsiveness, the four-point decision rule and trend line are used. Table 5.29 on page 5.56 shows Michael's DIBELS oral reading fluency progress monitoring scores.

Table 5.29. Michael's DIBELS Progress Monitoring Scores—Second Grade

DIBELS Oral Reading Fluency (ORF)	Michael's Scores Correct Words per Minute	Michael's Scores Retell Accuracy	DIBELS ORF At-Risk Score
12/7 BASELINE	21		Mid-Year At Risk < 52 At Some Risk < 68 Retell Accuracy = 98%
12/12/05	29	76%	
1/02/06	31	86%	
1/09/06	32	84%	
1/16/06	33	92%	

Resource List: Student Case Studies

AIMSweb Oral Reading Fluency (Edformation, Inc.)
http://www.aimsweb.com/products/aimsweb_pro.htm

AIMSweb Pro includes assessments and web-based reporting components to provide schools with a 3 Tiered Evidence-Based Progress Monitoring System for universal screening, strategic assessment, determining special services eligibility, and frequent progress monitoring. It utilizes Curriculum-Based Measurement (CBM), an approved and standardized assessment practice.

AIMSweb Maze (Edformation, Inc.)
http://www.aimsweb.com/promo/mcbm.htm

Maze is a multiple-choice close task that students complete while reading silently. The first sentence of a 150-400 word passage is left intact. Thereafter, every seventh word is replaced with three words inside parenthesis. One of the words is the exact one from the original passage.

Balanced Literacy (Scholastic Literacy Place)
http://content.scholastic.com/browse/article.jsp?id=4315

Dorothy S. Strickland, reading expert and professor of education at Rutgers University, has developed material that address five rules of thumb for maintaining balanced literacy: (1) teach skills as a way to gain meaning. Skills are not ends in themselves, (2) each day, include time for both guided instruction and independent work. Otherwise, students will never internalize skills and make them their own, (3) avoid teaching children as if they were empty receptacles for knowledge. Instead, allow them to build knowledge in a process-oriented way, (4) integrate print and electronic materials effectively. That way, your classroom will reflect the multimedia world in which students live, and (5) always consider standardized test scores in light of informal assessment data. Encourage parents to do the same.

Behavior Assessment System for Children (BASC) (Pearson Assessment)
http://ags.pearsonassessments.com/

The Behavior Assessment System for Children (BASC) is a comprehensive system for measuring behavior and emotions of children and adolescents. It provides a complete picture of a child's behavior.

Comprehensive Test of Phonological Processing (CTOPP) (Pearson Assessment)
http://ags.pearsonassessments.com/

The Comprehensive Test of Phonological Processing (CTOPP) assesses phonological awareness, phonological memory, and rapid naming. Persons with deficits in one or more of these kinds of phonological processing abilities may have more difficulty learning to read than those who do not.

Conners' Rating Scale-Revised: Long Version Teacher (CTRS-R:L) and Parents (CPRS-R:L) (Multi-Health Systems)
https://www.mhs.com/

Developed by C. Keith Conners, the Conners' Rating Scales for ADD/ADHD consist of two separate scales to measure a child's behavior compare them to levels of appropriate norm groups from (1) teacher's perspective: hyperactivity, conduct problems, emotional-over indulgence, anxious passivity, asocial behaviors, and daydream - attention problems; and from (2) parent's perspective: conduct problems, learning problems, psychosomatic, impulsive hyperactivity, and anxiety.

Decodable Books - Open Court Phonemic Awareness (SRA, a Division of the McGraw-Hill Companies)
http://www.sraonline.com/

Open Court Phonemic Awareness is designed to provide systematic, explicit phonemic awareness and phonics instruction.

Diagnostic Assessment of Reading (Riverside/ Houghton Mifflin)
http//:www.riverpub.com/

The DAR (Diagnostic Assessments of Reading) is a criterion-referenced reading test developed by F.G. Roswell, J.S. Chall, M.E. Curtis, and G. Kearns. Its purpose is to assess individual student achievement in print awareness, phonological awareness, letters and sounds, word recognition, word analysis, oral reading accuracy and fluency, silent reading comprehension, spelling, and word meaning. It is administered on an as needed basis to selected students in grades K–12 (ages 5 to adult) who are not making progress in their reading intervention.

DIBELS (University of Oregon)
http://dibels.uoregon.edu/

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of standardized, individually administered measures of early literacy development designed to be short (one minute) fluency measures used to regularly monitor the development of pre-reading and early reading skills.

Differential Abilities Scale (DAS) (Harcourt Assessment)
http://harcourtassessment.com/

The DAS measures conceptual and reasoning abilities in children aged 30 months to 17 years. It includes a preschool level and a school age level. This relatively new measure has good psychometric properties, which increasingly are being used with preschool aged children.

Early Screening Inventory (ESI) (Pearson Early Learning)
http://www.pearsonearlylearning.com/

The Early Screening Inventory-Revised (ESI-R) is a reliable and valid developmental screening instrument that is individually administered to children from 3 to 6 years of age to measure development in three areas: visual-motor/adaptive, language and cognition, and gross motor skills. The ESI-P (preschool) and ESI-K (kindergarten) identify children who may need special education services in order to perform successfully in school.

Earobics (Cognitive Concepts Inc.)
http://www.earobics.com/

Earobics, provides early literacy skill training by teaching the phonological awareness, listening and introductory phonics skills required for learning to read and spell.

Edmark® (Riverdeep)
http://www.riverdeep.net/

The Edmark Reading Program is designed for students with learning or developmental disabilities and those who have not succeeded with other reading methods. The Edmark Reading Program uses a whole-word approach, with short instructional steps, consistent repetition, and positive reinforcement to ensure that students experience immediate success.

Exemplary Center for Reading Instruction (ECRI) (National Reading Center)
http://www.ecri.cc/

ECRI is a program that teaches elementary and secondary teachers (grades K-12) how and what to teach in reading and language arts instruction, how to schedule school/classroom time, obtain formative and summative student data, and implement critical teaching behaviors ECRI identified were essential to prevent failure.

Extensions in Reading® Series (Curriculum Associates, Inc.)
http://www.curriculumassociates.com/

The Extensions in Reading Series is a research-based series designed to strengthen and extend grade 1-8 students' reading strategies through the use of graphic organizers for genre-related writing.

Fox in a Box (CTB/ McGraw-Hill)
http://www.ctb.com/

Fox in a Box is an early literacy assessment that measures children's skills twice yearly from Kindergarten through Grade 2. It provides diagnostic information of selected skills in four learning strands – phonemic awareness, phonics, reading/oral expression, listening/writing.

Harcourt School Publishers
http://www.harcourt.com/

Harcourt School Publishers is an elementary school publisher that develops, publishes, and markets textbooks, electronic/online material, and related instructional materials for school and/or home use.

- The Harcourt Oral Reading Fluency Assessment. Using a subset of questions from Stanford 10 (Reading and Listening) the Stanford Reading First assess the five essential components of reading as specified in the Reading First legislation: phonemic awareness, phonics, vocabulary development, reading fluency, and reading comprehension strategies.
- Harcourt Holistic Assessment Books provides authentic literature for assessment of students' application of reading, writing skills and strategies.
- Harcourt Trophies Intervention includes materials (Intervention Resource Kits, Readers, Teacher's Guides, Practice Books, Skill Cards, etc.) for comprehensive teaching support and supplemental instruction.
- Harcourt Holistic Assessment uses the DELV to assess students' knowledge of speech and language that are non-contrastive (i.e., common across varieties of American English so they are less likely to lead to misidentification).

• Harcourt Holistic Listening Comprehension. The listening comprehension section of the Stanford Achievement Test Series: Stanford 10-Listening assesses listening comprehension with dictated selections and questions that reflect the listening materials students hear in school and outside of the classroom.

Houghton Mifflin Reading Series (Houghton Mifflin)
http://www.hmco.com/products/products_elementary.html

Reading series used in order to build fluency, extend key themes and concepts across curriculum areas, provide practice and the application of skills and strategies.

Houghton Mifflin Math Central (Houghton Mifflin)
http://www.eduplace.com/math/mathcentral/

Students develop a strong foundation in math skills and concepts, and learn to investigate, reason, and explain.

Idaho Reading Indicator (Idaho Department of Education)
http://www.sde.state.id.us/IRI/

The Idaho Reading Indicator is an assessment that tests for fluency and accuracy of the student's reading. It is the single statewide test specified by the Idaho state board of education, and the state department of education ensures that testing takes place twice a year in grades K through 3.

Idaho Standards Achievement Tests (Idaho Department of Education)
http://www.sde.state.id.us/Dept/testreports.asp

Idaho's comprehensive assessment system begins with kindergarten and continues through high school. The focus of the state assessment program is primarily on math, reading, and language usage skills.

Investigations in Data, Numbers and Space (Pearson-Scott Foresman)
http://www.scottforesmancatalog.com/

Investigations is an approach to teaching mathematics based on engaging activities and group learning experiences. The curriculum at each grade level is organized into units that offer from two to eight weeks of work. These units link together to form a complete K-5 curriculum.

Jordan Left-Right Reversal Test-Revised (JLRRT) (Academic Therapy Publications)
http://www.academictherapy.com/

Developed by Brian T Jordan, revised edition of the JLRRT is a normed reference test that assesses reversals of letters, numbers, and words in 5 to 12 year olds. It is designed for use as a screening device by classroom teachers or for inclusion in a full diagnostic test battery by a specialist.

Kaufman Brief Intelligence Test, 2nd Edition (K-BIT-2) (Pearson Assessments)
http://ags.pearsonassessments.com/

K-BIT-2 is a brief (approximately 20 minutes), individually administered measure of verbal and nonverbal cognitive ability for individuals age 4 years through adults.

Language Master (Drake Educational Associates)
http://websites.uk-plc.net/DRAKE_EDUCATIONAL_ASSOCIATES/list.htm

Language Master is an audio-visual aid for children throughout the world to help develop their language and literacy skills.

Lindamood Phonemic Sequencing (LiPS) for Reading, Spelling and Speech (Lindamood-Bell Learning Processes)
http://www.lindamoodbell.org/

The LiPS Program (formerly known as the ADD Program, Auditory Discrimination in Depth) stimulates phonemic awareness through an awareness of the mouth actions which produce speech sounds. This awareness becomes the means for verifying sounds within words and allows individuals to become self-correcting.

Literacy Place (Scholastic, Inc.)
http://teacher.scholastic.com/literacyplace/

Literacy Place is a K–6 reading and language arts program that offers a research-based combination of systematic skills development, literature, and technology to make every child a successful reader.

MacMillan/McGraw-Hill reading series (McGraw-Hill Companies)
http://www.macmillanmh.com/

The MacMillan/McGraw-Hill reading series promotes explicit, systematic instruction and research proven routines in phonemic awareness, phonics, fluency, vocabulary and text comprehension for children in grades 1 through 6.

Making Words (A Good Apple Language Arts Activity Book Series)
[Available through a variety of book vendors]

Making Words is an innovative word study activity introduced by Patricia Cunningham (1991) wherein students are guided through the process of manipulating a set of letters in sequence to construct words. It is used to help readers develop their ability to spell words and apply this knowledge when decoding.

Open Court (SRA/McGraw Hill)
http://www.sra4kids.com/

Open Court Reading is a research-based curriculum grounded in systematic, explicit instruction of phonemic awareness, phonics and word knowledge, comprehension skills and strategies, inquiry skills and strategies, and writing and language arts skills and strategies.

Optimize (Oregon Project Optimize) (PacifiCorp Foundation for Learning)
http://www.pacificorpfoundation.org/Article/Article25116.html

Project Optimize helps teachers work with children who arrive at kindergarten unprepared to learn how to read. Created by University of Oregon researchers, Project Optimize lessons provide phonologic and alphabetic instruction that prepares targeted kindergartners to be successful beginning readers.

Peer-Assisted Learning Strategies (PALS) (Vanderbilt Kennedy Center for Research on Human Development)
http://kc.vanderbilt.edu/pals/

PALS Reading and PALS Math enable classroom teachers accommodate diverse learners and help a large proportion of these students achieve success. PALS Reading and PALS Math have been approved by the U.S. Department of Education's Program Effectiveness Panel for inclusion in the National Diffusion Network on effective educational practices.

Phonics for Reading (Cambridge Reading) (Cambridge University Press)
http://www.cambridge.org/

Authored by Gillian Brown and Kate Ruttle as part of the Cambridge Reading materials, Phonics for Reading is a book that provides an innovative approach to the teaching of phonics after individual letter recognition is secure (year 2/primary 3 and upwards) by developing phonological awareness and spelling using Cambridge Reading.

QuickReads (Pearson Learning Group's Modern Curriculum Press)
http://www.quickreads.org/

QuickReads are short texts to be read quickly and with meaning. The QuickReads program consists of three levels: B, C, and D. These texts support automaticity with the high-frequency words and phonics/syllabic patterns needed to be a successful reader at a particular grade level.

Read Naturally (Read Naturally, Inc.)
http://www.readnaturally.com/

Students work with the Read Naturally stories on paper and read along to fluent recordings of the stories on cassettes or audio CDs. Reading along is the teacher modeling step, which helps students learn new words and encourages proper pronunciation, expression, and phrasing.

Read Well (Sopris West)
http://www.sopriswest.com/

Read Well is a validated, research-based and data-driven core reading curriculum that teaches students the important building blocks of literacy while providing the foundation and skills to develop lifelong readers. It is designed to generate quantitative learning gains for all students, with struggling students showing the most substantial growth by combining explicit, systematic instruction, rich themes and content, and structured learning activities.

Spelling Mastery (SRA)
https://www.sraonline.com/

Spelling Mastery teaches dependable spelling skills by blending the phonemic, morphemic, and whole-word approaches. It interweaves these three approaches according to students' skill development and provides lessons to efficiently and effectively teach the spelling skills students need to become proficient writers.

SRA Reading Mastery (SRA/McGraw-Hill)
http://www.mcgraw-hill.co.uk/sra/readingmastery.htm

Reading Mastery helps students develop strategies for reading and understanding through the use of a synthetic phonics approach. Its use has proven to reduce the prevalence of reading problems and elevate the reading skills of at-risk children well into the average range.

Stanford Binet 5 (Riverside Publishing, a Houghton Mifflin Company)
http://www.riverpub.com/products/sb5/index.html

The Stanford-Binet 5 is cognitive ability assessment normed on a stratified random sample of 4,800 individuals that matches the 2000 U.S. Census.

Standardized Testing and Reporting (STAR) assessments (Renaissance Learning, Inc.)
http://www.renlearn.com/

STAR Reading, STAR Math, and STAR Early Literacy are standardized, computer-adaptive assessments for use in K-12 education that provide vital information to monitor progress, personalize instruction, and provide immediate formative feedback to assure success in reading, math, and writing.

TerraNova assessments (CTB/MacGraw-Hill Companies)
http://www.ctb.com/

TerraNova performance assessments offers extended, open-ended tasks that measure knowledge and critical process skills in Communication Arts (Reading, Language Arts, Writing) and Mathematics. TerraNova tests by emphasizing measurement of national content standards and process skills that are not easily measured by selected-response and shorter constructed-response items.

Test of Language Development-Primary-Third Edition (TOLD P:3) (Pearson Assessments)
http://ags.pearsonassessments.com/

Completely renormed in 1996, the TOLD P:3 has nine subtests that measure different components of spoken language. Picture vocabulary, relational vocabulary, and oral vocabulary assess the understanding and meaningful use of spoken words. Grammatic understanding, sentence imitation, and grammatic completion assess differing aspects of grammar. Word articulation, phonemic analysis, and word discrimination are supplemental subtests that measure the abilities to say words correctly and to distinguish between words that sound similar.

TouchMath (Innovative Learning Concepts, Inc.)
http://www.touchmath.com/

TouchMath is an integrated curriculum that has evolved since 1975, which follows sequential learning strategies advocated by learning theorists such as Jean Piaget and Jerome Bruner. It consists of 56 math kits, workbooks and teaching aids.

Vineland Adaptive Behavior Scales (Pearson Assessments)
http://ags.pearsonassessments.com/

The Vineland Adaptive Behavior Scales measure personal and social skills used for everyday living by providing critical data for the diagnosis or evaluation of a wide range of disabilities, including mental retardation, developmental delays, functional skills impairment, and speech/language impairment.

Wechsler Individual Achievement Test (WIAT-II) (Harcourt Assessment)
http://harcourtassessment.com/

WIAT–II is a tool useful for achievement skills placement, learning disability diagnosis, special education placement, curriculum planning, and clinical appraisal for preschool children through adults.

Wechsler Intelligence Scale for Children®—Fourth Edition Integrated (WISC-IV) (Harcourt Assessment)
http://harcourtassessment.com/

Developed by David Wechsler, the WISC-IV assesses a child's capabilities with an intellectual score plus provides information for intervention planning.

Woodcock-Johnson III Complete Battery (WJ-III) (Riverside Publishing, a Houghton Mifflin Company)
http://www.hmco.com/products/

The Woodcock-Johnson III Complete Battery provides a co-normed set of tests for measuring general intellectual ability, specific cognitive abilities, scholastic aptitude, oral language, and academic achievement.

Part Three
Research Examples

National Research Center on Learning Disabilities (NRCLD)

Experimental Research Studies on Responsiveness-to-Intervention (RTI) in Reading and Math

Doug Fuchs, Ph.D., Lynn Fuchs, Ph.D., & Don Compton, Ph.D
Vanderbilt University

Introduction

The National Research Center on Learning Disabilities received funding from the Office of Special Education Programs (OSEP) for five years to achieve the following goals:

1. To understand how alternative approaches to disability identification affect who is identified with a specific learning disability (SLD)
2. To investigate state and local identification policies and practices and SLD prevalence
3. To provide technical assistance and conduct dissemination to enhance state and local practice in identification
4. To identify sites that effectively use responsiveness to intervention (RTI) as a method of prevention and a tool for identification—an activity conducted in cooperation with the Regional Resource Centers (RRC)

NRCLD is a collaboration of the University of Kansas and Vanderbilt University. Vanderbilt University implemented two research studies to investigate how RTI would affect the identification process of students with SLD. One study was conducted in reading; the other in math. The University of Kansas focused on (a) working with the RRCs to identify school sites that effectively use RTI and (b) providing technical assistance and dissemination of information regarding RTI and the SLD determination process to states through a variety of avenues.

This synopsis provides a brief summary of the research studies conducted by Vanderbilt University.

Overview: The Reading Study

The overall purposes of this research study were to examine the efficacy of Tier 2 first-grade tutoring as an approach to improve reading performance and preclude reading disability (RD), to assess RD prevalence and severity as a function of method with and without instruction, and to explore the pretreatment cognitive abilities associated with reading development.

Design of study. Sixteen elementary schools within two school districts in the Nashville, Tenn., area participated in this study. Eight of the schools were Title I and eight were non-Title I. In the fall, students within 42 first-grade classes were screened using the Rapid Letter Naming (RLN) portion of the Comprehensive Test of Phonological Processing (CTOPP), Curriculum-Based-Measurement (CBM) Word Identification Fluency (WIF), and teacher judgment. Six students per class—scoring the lowest on one or both measures and judged by the teacher to be low—were designated as "low study entry." They were then rank ordered and split into top and bottom strata. These low performers were randomly assigned to one of three conditions:

1. Tier 1: Fall Tutoring ($n = 84$)
2. Tier 2: Spring Tutoring (if unresponsive to fall instruction) ($n=84$)
3. Control ($n=84$)

Students who were assigned to Fall Tutoring were immediately placed into Tier 2. Those assigned to Spring Tutoring remained in Tier 1 during the fall semester. Their progress in general education during the first semester was monitored with CBM-

WIF; only students whose progress was inadequate in general education then received tutoring in the spring semester. Specifically, weekly WIF data were collected for nine weeks to monitor the progress of the students assigned to the Spring Tutoring group. The dual discrepancy method (WIF slope and level) was used to identify those students who were unresponsive to Tier 1 general education instruction and proceeded to Tier 2 tutoring. The students assigned to Control remained in Tier 1 (general education) throughout the study.

A battery of standardized reading tests was administered to all students at the beginning of the year, mid-year, and end of first grade and again at the end of second, third, and fourth grades.

Reading intervention. For Tier 2, Vanderbilt used a standardized, research-based preventive tutoring protocol that consists of the following elements:

- Small groups (two to four students)
- Conducted for nine weeks, three to four sessions per week, with 45-60 minutes per session
- Conducted by trained and supervised personnel (not the classroom teacher)

The following research-based elements of instruction were used:

- Point system for motivation
- Immediate corrective feedback
- Mastery of content before moving on
- More time on difficult activities
- More opportunities to respond
- Fewer transitions
- Setting goals and self-monitoring
- Special relationship with tutor

Students were placed in small groups of two to four and received instruction outside of the general education classroom four times per week for nine weeks. They completed a total of 36 sessions (64 lessons), which lasted 45 minutes each. Each tutor-led instruction session was broken down into the following:

- 10 minutes of sight word practice
- 5 minutes of letter sound practice
- 15 minutes of decoding practice
- 15 minutes of reading fluency practice

Each lesson was scripted for the tutors with detailed steps, as well as exact wording of the instructions to be provided to the students. Steps for the sight word, letter sound, and decoding practice were following:

- Introduction of new sound or word
- Choral practice
- Individual practice
  - Two opportunities to produce correct sounds or words
- Writing practice

Steps for the reading fluency practice were the following:

- Choral reading of previous story:
  - Echoing the tutor, one line at a time
  - Choral reading of story
- Choral reading of new story:
  - Echoing the tutor, one line at a time
  - Choral reading of story
- Individual speed reading
  - Each student reads a new story three times for 30 seconds
  - Opportunities are provided to earn incentives for increasing fluency

Each day, the students' mastery of the topic was assessed. If every student in the group achieved mastery of the sight words on the first day of that set, the group moved to the next set on the following day. Each student had two trials to master the sight words during the session. The group progressed to the next set regardless of the students' mastery status after two sessions on the same set. This ensured that the group would be able to cover more words and sounds.

Fidelity of implementation. During the initial training, tutors became accustomed to receiving feedback from the trainers regarding their implementation of the reading and math interventions. They received feedback on the accuracy with which they followed the steps for instruction and feedback that they provided to their students. Every session was audiotaped. These tapes were randomly sampled to systematically represent tutors and tutoring groups. Using checklists that delineated the steps and actions the tutor was supposed to be implementing, fidelity was quantified. Fidelity was documented as strong. See example fidelity checklist on page 5.64.

Results. At the end of first grade, the effects of Tier 2 tutoring on students' reading performance was assessed, showing that tutoring improved outcomes on word identification, reading fluency, and comprehension. In addition, fewer students who had received Tier 2 tutoring were identified with a reading disability (RD), compared to students in the control group. In addition, results showed that the proportion of students who were identified as having an RD varied as a function of the procedure by

Example

Tutoring Fidelity Checklist: Sight Words

1. The tutor introduces the new sight word, or if there is no new word, introduces the sight word from the previous set. The tutor states the sight word and spells it.
2. The tutor asks the students to repeat the sight word and spell it.
3. The tutor asks students to state orally each sight word in the set ("What word?")
4. If the students say a word incorrectly, the tutor says the correct word and the student repeats it.
5. The tutor presents each sight word to each student individually and asks the student to state the word.
6. If the student says a word incorrectly, the tutor says the correct word and the student repeats it.
7. The tutor repeats steps 5 and 6 with any sight words said incorrectly on the first trial.
8. The tutor asks students to state the sight word for the day
9. The tutor asks students to write the new sight word.
10. If the student has written the sight word correctly, the tutor states that it is correct and asks the student to write the word again. Tutor repeats this step with each of the students.
11. If a student has difficulty writing the sight word, the tutor shows the sight word again and instructs the student to write it.
12. If any words are misread on the second trial, the tutor marks on the mastery sheet that the group will repeat the entire set.

which unresponsiveness to Tier 2 was determined, with some procedures functioning better than others. Important cognitive predictors of outcome included phonological awareness, teacher ratings of student behavior and attention, and language ability. For other findings, see annotated bibliography at the end of this piece.

Overview: The Math Study

The purposes of this study were was to examine efficacy of first-grade preventive instruction, to assess math disability (MD) prevalence and severity as a function of method with and without instruction, and to explore pretreatment cognitive abilities associated with development.

Design of study. The reading and math studies were initiated in subsequent years, so that the samples of students did not overlap with each other. Ten elementary schools in the Metropolitan Nashville Public Schools participated in this study. In the fall, students within 41 first-grade classes were screened using a battery of math tests, and the lowest quintile of students were identified as "low study entry." These students were randomly assigned to receive Tier 2 tutoring or to serve as a control group, which did not receive Tier 2 tutoring.

All low-study-entry students and a sample of average-achieving classroom peers were assessed with a comprehensive battery in the fall of first grade. In addition, the low-study-entry and average-study-entry students were assessed weekly using CBM math computation tests for nearly 30 weeks.

Math intervention. For Tier 2, a standardized tutoring protocol, which consists of the following elements, was used:

- Small groups (two to three students)
- 17 weeks, three sessions per week, 40 minutes per session
- Conducted by trained and supervised personnel (not the classroom teacher)

The following research-based elements of instruction were incorporated:

- Point system for motivation
- Immediate corrective feedback
- Mastery of content before moving on
- More time on difficult activities
- More opportunities to respond
- Fewer transitions
- Setting goals and self-monitoring
- Special relationship with tutor

Students were tutored in small groups of two to three and received instruction outside of the

general education classroom three times per week for 17 weeks. They covered 17 different topics in 48 sessions, and each session lasted 40 minutes. Each session was broken down into the following: 30 minutes of tutor-led instruction and 10 minutes of student use of math software (Math Flash) to enhance automatic retrieval of math facts.

The tutor-led instruction used the concrete-representational-abstract model, which relies on concrete objects to promote conceptual understanding (e.g., base-10 blocks for place value instruction). The following 17 math topics and concepts were taught:

- identifying and writing numbers to 99
- identifying more, less, and equal with objects
- sequencing numbers
- using <, >, and = symbols
- skip counting by 10s, 5s, and 2s
- understanding place value (introduction)
- identifying operations
- place value (0-50)
- writing number sentences (story problems)
- place value (0-99)
- addition facts (sums to 18)
- subtraction facts (minuends to 18)
- review of addition and subtraction facts
- place value review
- 2-digit addition (no regrouping)
- 2-digit subtraction (no regrouping)
- missing addends

Each lesson was scripted for the tutors with detailed steps and exact wording of the instructions to be provided to the students. On the first day of each topic, the students completed a cumulative review worksheet covering previous topics.

The Math Flash software design reflects the assumption that active and repeated pairing of the problem stem with the correct answer in the short-term memory establishes the association in long-term memory. The facts are organized in families of increasing difficulty. Once response to a math fact is consistently correct, it is moved to a "mastered" set. Cumulative review on mastered facts is provided; if a student responds incorrectly, that fact is moved out of the mastered set. An example of the process a student follows as he works with Math Flash is as follows:

1. Math fact flashes on and disappears from computer screen.
2. Student is prompted to type the fact from short-term memory.
3. If the student is correct, the computer applauds, says the fact, and awards a point (5 points = a "trinket" for the toy box at the bottom of the screen).
4. If the student is incorrect, the computer removes the incorrect fact, replaces it with the correct fact, and says the fact.
5. At the end of each session, the computer provides feedback about the number of facts typed correctly and the highest math fact mastered.

Each day, the student's mastery of the topic was assessed. If every student in the group achieved mastery prior to the last day of the topic, the group moved on to the next topic (a few topics required completion of all three days). For mastery assessment, students completed worksheets independently, with the percentage of correct answers determining mastery (for most topics – 90 percent accuracy). After the last day on a topic, the group progressed to the next topic regardless of mastery status.

Fidelity of implementation. Fidelity of implementation of the tutoring protocol was quantified in the same manner as with the reading study (see page 5.63) and documented as strong.

Results. At the end of Tier 2 (17 weeks), students' math performance as a function of condition (average-study-entry versus low-study-entry control versus low-study-entry tutor) was assessed. Results showed that tutoring substantially enhanced student performance, with improvement for low-study-entry tutored students exceeding that of low-study-entry control students. Also, on some measures, the tutored students' improvement exceeded that of average-study-entry classroom peers. In addition, math disability (MD) prevalence was lower among tutored students compared to low-study-entry control at the end of first grade and at the end of second grade. As with the reading study, MD prevalence and severity depended on the definition of unresponsiveness employed, with some definitions functioning better than others. Cognitive predictors of math outcome differed depending on the area of mathematics. For other results, see the annotated bibliography at the end of this piece.

Publications to Date

Articles

In Press

Fuchs, L.S., Fuchs, D., Compton, D.L., Bryant, J.D., Hamlett, C.L., & Seethaler, P.M. (in press). Mathematics screening and progress monitoring at first grade: Implications for responsiveness-to-intervention. *Exceptional Children.*

This study assessed the predictive utility of screening measures for forecasting math disability (MD) at the end of second grade and the predictive and discriminant validity of math progress-monitoring tools. Participants were 225 students who entered the study in first grade and completed data collection at the end of second grade. Screening measures were number identification/counting, fact retrieval, curriculum-based measurement (CBM)-computation, and CBM-concepts/applications. For number identification/counting and CBM-computation, 27 weekly assessments also were collected. MD was defined as below the 10th percentile at the end of second grade on calculation and word problems. Logistic regression showed that the four-variable screening model produced good and similar fits in accounting for MD-calculation and MD-word problems. Classification accuracy was driven primarily by CBM-concepts/applications and CBM-computation; CBM-concepts/applications was the better of these predictors. CBM-computation, but not number identification/counting, demonstrated validity for progress monitoring.

Fuchs, L.S., & Fuchs, D. (in press). The role of assessment within a multi-tiered approach to reading instruction. In Haager, D., Vaughn, S, & Klingner, J. (Eds.), *Validated practices for three tiers of intervention*. Baltimore: Brookes.

This chapter provides an overview of assessment methods for implementing a multitiered approach to reading instruction. Discussion focuses on the use of screening measures for identifying students who require a second tier of instruction, in addition to general education and for monitoring student progress in response to second-tier instruction to determine which students require consideration for special education and learning disabilities classification.

2006

Compton, D.L., Fuchs, D., Fuchs, L.S., & Bryant, J.D. (2006). Selecting at-risk readers in first grade for early intervention: A two-year longitudinal study of decision rules and procedures. *Journal of Educational Psychology, 98*, 394-409.

Responsiveness to intervention (RTI) models for identifying learning disabilities rely on the accurate identification of children who, without Tier 2 tutoring, would develop reading disability (RD). This study examined two questions about how well we can use first-grade assessment data to predict RD at the end of second grade: (a) Does adding initial word identification fluency (WIF) and five weeks of WIF progress-monitoring data (WIF-level and WIF-slope) to a typical first-grade prediction battery improve the accuracy of the prediction? and (b) Can innovative statistical tools, which could be used by school folks via computers, increase the accuracy of the prediction? To answer these questions we contrasted four classification models based on 206 first-grade children and followed them through the end of second grade. A combination of initial WIF, five-week WIF-level, and five-week WIF-slope and classification tree analysis improved prediction sufficiently to recommend their use with RTI.

Fuchs, D., & Fuchs, L.S. (2006). Introduction to responsiveness-to-intervention: What, why, and how valid is it? *Reading Research Quarterly*, *41*, 92-99.

IDEA 2004 differs from previous versions in that it permits the identification of reading disability (RD) using responsiveness to intervention (RTI), which is also a means of providing early intervention to all children at risk for school failure. IDEA 2004 permits districts to use as much as 15 percent of its special education monies to fund early intervention activities. All this has implications for the number and type of children identified, the kinds of educational services provided, and who delivers them. This creates the possibility of an expanded role for reading specialists, who may require pre- and inservice professional development activities. In this article, we explain important features of RTI, why it is viewed as a viable substitute for IQ-achievement discrepancy, and what issues still require investigation.

Fuchs, L.S., Fuchs, D., Hamlett, C.L., Hope, S.K., Hollenbeck, K.N., Capizzi, A.M., Craddock, C.F., & Brothers, R.L. (2006). Extending responsiveness-to-intervention to math problem solving at third grade. *Teaching Exceptional Children*, Mar/Apr, 59-63.

This article describes research-based procedures for implementing a three-tiered responsiveness-to-intervention system to prevent and identify learning

disabilities in mathematics problem solving at third grade. Overviews are provided of Tier 1 general education validated math problem-solving instruction and of Tier 2 validated math problem-solving tutoring procedures. A table highlights important distinctions between what occurs at Tier 1 versus what occurs at Tier 2. Also, expected reductions in students experiencing serious difficulty with math problem solving are reported with (a) conventional general education instruction in math problem solving (86 percent to 100 percent of students fall below the 16th percentile), (b) validated math problem-solving instruction at Tier 1 only (29 percent to 54 percent of students fall below the 16th percentile), (c) validated math problem-solving instruction at Tier 2 only (55 percent to 86 percent of students fall below the 16th percentile), and (d) validated math problem-solving instruction at Tiers 1 and Tier 2 (12 percent to 26 percent of students fall below the 16th percentile). This illustrates how two tiers of validated math problem-solving instruction can substantially reduce student difficulty at third grade.

Fuchs, L.S., & Fuchs, D. (2006). Implementing responsiveness-to-intervention to identify learning disabilities. *Perspectives*, *32*(1), 39-43.

To implement responsiveness-to-intervention models of learning disabilities identification, schools must make decisions about six procedural dimensions: how many tiers of intervention to use, how to target students for preventive (Tier 2) intervention, the nature of that preventive (Tier 2) intervention, how to determine whether students have responded adequately to Tier 2 intervention, the nature of the multidisciplinary evaluation before special education, and the function and design of special education. For each of these procedural dimensions, we describe some options for implementation. Then, we offer recommendation for how schools might proceed. We close with two case studies illustrating an RTI process that incorporates our recommended practices.

2005

Fuchs, D., & Fuchs, L.S. (2005). Responsiveness-to-intervention: A blueprint for practitioners, policymakers, and parents. *Teaching Exceptional Children, 38*(1), 57-61.

The authors define responsiveness to intervention by specifying a four-step process and distinguish between what they believe are "acceptable practices" and more desirable "best practices." They then illustrate how the process might work by presenting a series of four "case studies." They conclude by making explicit several of their preferences and emphasize that the blueprint is but one way to define RTI.

Fuchs, L.S., Compton, D.L., Fuchs, D., Paulsen, K., Bryant, J.D., & Hamlett, C.L. (2005). The prevention, identification, and cognitive determinants of math difficulty. *Journal of Educational Psychology, 97,* 493-513.

The purposes of this study were to (a) examine the efficacy of preventive first-grade tutoring in mathematics; (b) estimate the prevalence and severity of mathematics disability, with and without preventive tutoring and as a function of identification method; and (c) explore the pretreatment cognitive characteristics associated with mathematics development. Participants were 564 first-graders in 41 classrooms, 127 of whom were designated as at risk (AR) for mathematics difficulty and randomly assigned to tutoring or control conditions. Before treatment, AR children and not-AR peers were assessed on cognitive and academic measures. Tutoring occurred three times weekly for 16 weeks; treatment fidelity was documented; and math outcomes were assessed. The efficacy of tutoring was supported on computation and concepts/applications. Tutoring decreased the prevalence of math disability, with prevalence and severity varying as a function of identification method and math domain. Attention accounted for unique variance in predicting each aspect of end-of-year math performance. Other predictors, depending on the aspect of math performance, were nonverbal problem solving, working memory, and phonological processing.

Fuchs, L.S., Compton, D.L., Fuchs, D., Paulsen, K., Bryant, J. & Hamlett, C.L. (2005). Responsiveness to intervention: Preventing and identifying mathematics disability. *Teaching Exceptional Children, 37*(4), 60-63.

This article describes research-based procedures for implementing a three-tiered responsiveness-to-intervention system to prevent and identify learning disabilities in mathematics. The system is described at first grade, with an overview of Tier 2 tutoring procedures. The reduction in students experiencing math disability (MD) is discussed when validated Tier 2 tutoring is implemented. For example, using one responsiveness-to-intervention method for designating MD, in which students are deemed MD if their final achievement on first-grade concepts and applications falls below the 10th percentile, prevalence fell from 9.75 percent without prevention to 5.14 percent with Tier 2 tutoring. Assuming 53.3 million school-age children, this translates into approximately 2.5 million fewer children experiencing MD.

Fuchs, L.S., & Vaughn, S.R. (2005). Response to intervention as a framework for the identification of learning disabilities. *Trainers of School Psychologists Forum.*

In this article, a responsiveness-to-intervention approach to learning disabilities (LD) identification is presented. First, RTI as an LD identification procedure is explained. Then, the promises and the potential pitfalls of such an approach are described. Finally, clarification is provided about how such an approach represents the application of education science to practice.

McMaster, K.N., Fuchs, D., Fuchs, L.S., & Compton, D.L. (2005). Responding to nonresponders: An experimental field trial of identification and intervention methods. *Exceptional Children, 71*, 445-463.

The purpose of this study was to examine the efficacy of alternative approaches for providing a second tier of intervention with a responsiveness-to-intervention model for preventing and identifying learning disabilities. Participants were 232 first-graders who were receiving a research-validated form of general education reading instruction, Peer-Assisted Learning Strategies. Children whose improvement over the first semester in response to Tier 1 Peer-Assisted Learning Strategies was poor, both in terms of slope of improvement during the fall semester and in terms of end-of-first-semester level, were identified for Tier 2 intervention. These 56 children were randomly assigned to remain with unmodified classroom Peer-Assisted Learning Strategies, to participate in an adapted form of classroom Peer-Assisted Learning Strategies (which slowed the pace and relied on strong peer tutors), or individual adult tutoring. The proportion of nonresponders to Tier 2 intervention suggested that individual adult-directed tutoring was the most efficacious way of providing Tier 2 intervention.

2004

Fuchs, D., Deshler, D.D., & Reschly, D.J. (2004). National Research Center on Learning Disabilities: Multimethod studies of identification and classification issues. *Learning Disability Quarterly, 27*(4), 189-195.

This paper provides the context for the special issue of Learning Disability Quarterly and outlines the National Research Center on Learning Disability's four lines of programmatic activities: (1) conduct randomized field trials to explore the relative utility of specific identification methods in reading and math; (2) conduct surveys and focus groups to describe and understand identification practices at the state and local levels; (3) select school districts or school buildings across the country in which practitioners are implementing validated and replicable responsiveness-to-intervention (RTI) methods to identify students with specific learning disabilities; and (4) provide technical assistance and dissemination to a broad array of end users nationally.

Fuchs, D., Fuchs, L.S., & Compton, D.L. (2004). Identifying reading disabilities by responsiveness to instruction: Specifying measures and criteria. *Learning Disability Quarterly, 27*, 216-228.

In this study, we contrasted alternative methods for identifying reading disability (RD) within the context of a responsiveness-to-intervention (RTI) approach to identification. The literature suggests four options for classifying response: (1) rate of improvement during tutoring within the top half of tutored students, (2) performance on a norm-referenced achievement test within the average range at the end of tutoring, (3) achieving a criterion-referenced "benchmark" at the end of tutoring associated with future, (4) demonstrating a strong rate of progress during tutoring and achieving a strong final score at the end of tutoring. For each option, variations on measures and cut-points were considered. We considered these four options using data from two RTI studies, one at first grade and one at second grade, incorporating two criteria for considering the technical merit of RTI options for designating RD. The first criterion was prevalence, with the goal of identifying the expected 2 to 5 percent of the population as RD. The second criterion was severity, with the goal of identifying children with the largest deficits across the greatest range of reading behaviors. In combining the criteria, the goal was to identify options that yield the expected proportion of children with the most severe reading difficulties. Findings indicated that options for designating response result in dramatically different prevalence rates and severity, but that a combination of strong slope during tutoring combined with a strong score at the end of tutoring may work well. Also, results suggest the potential value of focusing on short-term (such as three-week) maintenance immediately after intervention ends to designate RD.

Fuchs, D., Fuchs, L.S., McMaster, K.L., Yen, L., & Svenson, E. (2004). Non-responders: How to find them? How to help them? What do they mean for special education? *Teaching Exceptional Children, 36*(6), 72-77.

This piece describes a five-step assessment procedure for classifying children as nonresponders and three alternative strategies for providing Tier 2 intervention for children who are classified as nonresponders

to Tier 1. The article summarizes a study in which adult tutoring reduced the prevalence of nonresponse to Tier 2 by 50 percent, whereas adaptations to the classroom reading instruction resulted in a reduction of only 25 percent. Implications for the practice of responsiveness-to-intervention for preventing and identifying learning disabilities are discussed.

Fuchs, L.S., Fuchs, D. & Compton, D.L. (2004). Monitoring early reading development in first grade: Word identification fluency versus nonsense word fluency. *Exceptional Children, 71*, 7-21.

Response-to-intervention models of learning disabilities identification and prevention require continuing progress monitoring to help determine whether students are responding to intervention. In this study, we examined the technical merits of two contrasting measures for monitoring students' reading development in first grade. The first measure was the widely used nonsense word fluency. The other measure was curriculum-based measurement's word identification fluency. At-risk children (n = 151) were assessed (a) on criterion reading measures in the fall and spring of first grade and (b) on the two progress-monitoring measures each week for seven weeks and twice weekly for an additional 13 weeks. Concurrent and predictive validity for performance level and predictive validity for the slopes of improvement demonstrated the superiority of word identification fluency over nonsense word fluency. Findings are discussed in terms of the measures' utility for identifying children in need of Tier 2 intervention and for monitoring children's progress through first grade.

2003

Fuchs, D., Mock, D., Morgan, P.L., & Young, C.L. (2003). Responsiveness-to-intervention for the learning disabilities construct. *Learning Disabilities Research & Practice, 18*(3), 157-171.

Long-standing concern about how learning disabilities (LD) are defined and identified, coupled with recent efforts in Washington, D.C., to eliminate IQ-achievement discrepancy as an LD marker, have led to serious public discussion about alternative identification methods. The most popular of the alternatives is responsiveness-to-intervention (RTI), of which there are two basic versions: the "problem-solving" model and the "standard-protocol" approach. The authors describe both types, review empirical evidence bearing on their effectiveness and feasibility, and conclude that more needs to be understood before RTI may be viewed as a valid means of identifying students with LD.

Fuchs, L.S. (2003). Assessing treatment responsiveness: Conceptual and technical issues. *Learning Disabilities Research and Practice, 18*, 172-186.

Different methods for identifying reading disability within the context of a responsiveness-to-intervention (RTI) approach to identification were explored. We considered (1) rate of improvement in the top half of tutored students, (2) performance on a norm-referenced achievement test within the average range at the end of tutoring, (3) achieving a criterion-referenced benchmark associated with future success at the end of tutoring, and (4) showing a strong rate of progress during tutoring and achieving a strong final score at the end of tutoring. For each option, variations on measures and cut-points were considered. The goal was to identify options for designating response that yield the expected proportion of children with the most severe reading difficulties. Findings indicated that options for designating response result in dramatically different prevalence rates and severity, but that a combination of strong slope during tutoring combined with a strong score at the end of tutoring may work well.

Vaughn, S., & Fuchs, L.S. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Research & Practice, 18*(3), 137-146.

In this introduction to the special issue, a response-to-instruction approach to learning disabilities (LD) identification is discussed. Then, an overview of the promise and the potential pitfalls of such an approach is provided. The potential benefits include identification of students based on risk rather than deficit, early identification and instruction, reduction of identification bias, and linkage of identification assessment with instructional planning. Questions concern the integrity of the LD concept, the need for validated interventions and assessment methods, the adequacy of response to instruction as the endpoint in identification, the appropriate instructional intensity, the need for adequately trained personnel, and due process. Finally, an overview of the articles constituting the special issue is provided.

2002

Fuchs, L.S., Fuchs, D., & Speece, D.L. (2002). Treatment validity as a unifying construct for identifying learning disabilities. *Learning Disability Quarterly, 25*(1), 33-45.

The purpose of this article is to revisit the issue of treatment validity as a framework for identifying learning disabilities. In 1995, an eligibility assessment process, rooted within a treatment validity model, was proposed that (a) examines the level of

a student's performance as well as his or her responsiveness to instruction, (b) reserves judgment about the need for special education until the effects of individual student adaptations in the regular classroom have been explored, and (c) prior to placement, verifies that a special education program enhances learning. We review the components of this model and reconsider the advantages and disadvantages of verifying a special education program's effectiveness prior to placement.

Manuals

Paulsen, K., Fuchs, L.S., Fuchs, D., Compton, D.L., & Bryant, J.D. (2005). *First-Grade Tier 2 Tutoring in Math within a Response-to-Intervention Program for Preventing and Identifying Learning Disabilities: A Manual.* Available from flora.murray@vanderbilt.edu.

This manual provides a complete, scripted program for implementing a responsiveness-to-intervention Tier 2 tutoring intervention at first grade in math.

Fuchs, L.S., Fuchs, D., Finelli, R., & Hollenbeck, K.N. (2005). *Hot Math Tutoring: A Tier 2 Tutoring Program in Mathematics Problem Solving for Use in Third Grade within a Response-to-Intervention Program for Preventing and Identifying Learning Disabilities (manual).* Available from flora.murray@vanderbilt.edu.

This manual provides a complete, scripted program for implementing a responsiveness-to-intervention Tier 2 tutoring intervention at third grade in math problem solving.

Fuchs, L.S., Fuchs, D., Prentice, K.R., & Finelli, R. (2004). *Hot Math: A Tier 1 Whole-Class Instruction in Mathematics Problem Solving for Use in Third Grade within a Response-to-Intervention Program for Preventing and Identifying Learning Disabilities (manual).* Available from flora.murray@vanderbilt.edu.

This manual provides a complete, scripted program for implementing a responsiveness-to-intervention Tier 1 whole-class instruction at third grade in math problem solving.

Fuchs, D., Compton, D.L., Fuchs, L.S., Yen, L., McMaster, K.L., & Bryant, J.D. (2004). *First-Grade Tier 2 Tutoring in Reading within a Response-to-Intervention Program for Preventing and Identifying Learning Disabilities: A Manual.* Available from flora.murray@vanderbilt.edu.

This manual provides a complete, scripted program for implementing a responsiveness-to-intervention Tier 2 tutoring intervention at first grade in reading.

Centers for Implementing K-3 Behavior and Reading Intervention Models

Preventing Reading Difficulties: A Three-Tiered Intervention Model
Sharon Vaughn, Ph.D., & Jeanne Wanzek, Ph.D
University of Texas Center for Reading & Language Arts

Goals

The overall goals of this five-year project (2002-2006) were

- to develop, evaluate, and disseminate a school-based model for the prevention of reading disabilities
- to develop a three-tiered intervention model to support students at risk for developing reading disabilities
- to reduce the number of students identified for special education based on reading disabilities.

Six elementary schools in a district near Austin, Texas, participated in the research study. Within these schools, more than 80 percent of the students were minority students, and more than 80 percent received free or reduced lunch.

With this research, Vaughn and her colleagues examined the effectiveness of the implementation and sustainability of the three-tier model through observations, interviews, and field notes. They anticipated that this aspect of the evaluation would provide valuable information about barriers to and facilitators of effective implementation.

One of the three practical outcomes that researchers anticipated to be of highest importance to special education and general education teachers was to determine the effectiveness of relatively brief interventions (for example, Tier 2 interventions that comprised approximately 50 sessions for 20 to 30 minutes per day) compared with the effectiveness of more intensive interventions in Tier 3 (100 sessions for 50 to 60 minutes/day).

Overview

For this research study, three intervention levels were implemented across kindergarten through third grade to prevent reading difficulties. All levels included screening, systematic progress monitoring, and the use of scientifically based reading instruction. Students who did not make adequate progress in Tier 1 (general education) received Tier 2 reading intervention. Students who caught up to their peers left Tier 2 but their progress continued to be monitored in Tier 1. A similar process was followed for Tier 3. All students remained in Tier 1 even when they were also being served in Tier 2 or Tier 3.

Principal involvement. The role of the principal cannot be overemphasized. There was a strong link between principal leadership and teacher interest, motivation, and effective implementation of the program. The researchers and project directors encouraged principals' involvement in the project by meeting with them each month, presenting at a district-wide principal meeting once each semester, and co-presenting with principals at a conference of the Texas Elementary Principals and Supervisors Association. The project directors also assisted schools in sustaining the practices implemented in the research project.

Researchers shared standardized test data and progress monitoring data with school and district leaders to inform their decision making regarding student, teacher, and school progress toward successful reading outcomes. Researchers provided graphs illustrating DIBELS class- and school-wide data for principals and provided school- and district-level data to district administrators.

Professional development. Professional development was extensive and assisted teachers and grade-level teams in their understanding and use of progress monitoring information. Professional development also assisted individual teachers and principals in interpretation, grouping, and instructional practices related to students most at risk for reading difficulties.

Session topics that related to Tier 1 included DIBELS for progress monitoring, phonological awareness, classroom behavior management, using assessment information to group students for instruction, differentiated instruction, using data to make instructional decisions, implementation of K-PALS (Peer Assisted Learning Strategies), teacher

partnering, focus group discussions, collaborative strategic reading, vocabulary instruction, advanced word study, effective instructional practices, and organizing and designing the core reading block.

Professional development sessions that related specifically to Tier 2 included phonological/phonemic awareness, letter and sound identification, phonics and word recognition, fluency, word reading, sentence/story reading, passage reading, and comprehension.

Sessions related to Tier 3 included sound review, phonics and word recognition, vocabulary, fluency, passage reading, and comprehension.

Focus groups and coaching. All participating teachers engaged once a year in focus groups to provide feedback about what was helpful and what was difficult with regard to the three-tier model. Researchers also wanted to determine the effectiveness of coaching and in-classroom support for enhancing implementation, progress monitoring, and ultimately student outcomes. Rigorous training and reliability procedures were used to prepare three-tier project testers.

Tier 1

Tier 1 instruction took place in the general education classroom with the general education teacher. Reading instruction took place for at least 90 minutes each day, was scientifically based, and emphasized the five critical elements of reading. Curriculum and instruction in kindergarten through second grade included a variety of strategies, and ideas based on scientifically based reading research and content previously developed by the Vaughn Gross Center for Reading and Language Arts (VGCRLA) were shared during professional development sessions. In addition, in kindergarten, the curriculum included Phonemic Awareness in Young Children and K-PALS; in first grade, PALS; and in second grade, partner reading.

Benchmark assessment data (DIBELS) were collected at the beginning, middle, and end of the year to identify students who needed intervention. Teachers used DIBELS to gather progress-monitoring data to inform and adjust their reading instruction. After DIBELS assessments, teachers were given a bar graph that indicated DIBELS scores for individual students. Tier 1 coordinators met with the teachers and provided instructional recommendations to increase student progress. Teachers also completed the Social Skills Rating System (SSRS) for students.

Decision Rules For Tier 2 And Tier 3 Instruction

For purposes of research, the kindergartners and first graders whose response to general education instruction was not adequate received additional instruction in Tier 2 from researchers. No student in kindergarten or first grade received Tier 3 instruction. Students in second and third grade who did not respond adequately to general education received Tier 3 instruction from researchers. The school provided Tier 2 instruction for second- and third-graders needing that level of instruction. Tables 5.30 and 5.31 describe qualification and exit criteria for Tiers 2 and 3.

Table 5.30. Tier 2 Qualification and Exit Criteria

Semester	Entry	Exit
Kindergarten (Spring)	Letter Name Fluency < 23	Phonemic Segmentation Fluency (PSF) > 30
First Grade (Fall)	1. Phonemic Segmentation Fluency < 10 and Nonsense Word Fluency = 13 – 23 ***or*** 2) Nonsense Word Fluency < 13	1) Nonsense Word Fluency > 30 and Oral Reading Fluency > 20 ***or*** 2) Oral Reading Fluency > 8
First Grade (Spring)	1) Nonsense Word Fluency < 30 and Oral Reading Fluency < 20 ***or*** 2) Oral Reading Fluency < 8	Oral Reading Fluency > 34

Table 5.31. Tier 3 Qualification and Exit Criteria

Semester	Entry	Exit
Second Grade (Fall)	Oral Reading Fluency < 27 and at least one dose of Tier2 in first grade	Oral Reading Fluency ≥ 68
Second Grade (Spring)	Did not exit from Fall Tier 3 (Students who qualify for Spring Tier 3 must have qualified for Fall Tier 3)	Oral Reading Fluency ≥ 70
Third Grade (Fall)	Oral Reading Fluency < 77 and at least one dose of Tier 3 in second grade	Oral Reading Fluency ≥ 80

Tier 2

Instruction and interventions. Tier 2 interventions, when needed, began immediately after identification with benchmark testing and were coordinated with the general education teacher. The interventions emphasized the five critical elements of beginning reading and were systematic, explicit, and included modeling, multiple examples, and corrective feedback. Reading interventions included phonological/phonemic awareness, letter and sound identification, phonics and word recognition, fluency, word reading, sentence/story reading, passage reading, and comprehension.

Personnel. For this research, the personnel providing Tier 2 instruction were graduate research assistants and full-time staff hired for tutoring; all had a college degree, some were certified teachers, and all were trained before beginning teaching. During hiring, Vaughn's team looked for tutors with previous experience teaching and working in schools, knowledge of reading instruction, and a willingness to implement a standard protocol intervention. To be considered "qualified," personnel had to be trained to 100 percent implementation fidelity. (Tier 2 interventionists implementing the research treatment did not attend the Tier 1 professional development sessions.)

Setting/time/pacing. Tier 2 treatment/tutoring sessions were always held outside the general education classroom (in pod areas or in a separate classroom, for example). One "round" of Tier 2 instruction lasted for 10 to 12 weeks (about 50 sessions), with each session lasting at least 30 minutes. This was in addition to the 90 minutes of core reading instruction provided in the general education classroom. Teacher-to-student ratios were either one-to-four or one-to-five. After one round of Tier 2, students could either exit Tier 2, repeat Tier 2, enter Tier 3, or be referred to special services. Pacing was matched to each student's skill level, and each student had multiple opportunities to participate and respond.

Progress monitoring. Teachers used DIBELS benchmarks and progress monitoring (assessment data collected three times each year) to inform decisions about grouping and to adjust their reading instruction. In addition, the teachers monitored the progress of students in Tier 2 every week to ensure adequate progress on the targeted skill.

All teachers were trained in the administration and interpretation of DIBELS. (Researchers assist in the collection and interpretation of DIBELS.) Teachers also completed the Social Skills Rating System (SSRS) on students.

Tier 3

Qualification and exit criteria. A student was selected for Tier 3 instruction in one of three ways:

1. If progress was not sufficient after two rounds of Tier 2 instruction even after adjustments to instruction
2. If a marked lack of progress was evident after only one round of Tier 2 and further Tier 2 instruction was deemed insufficient
3. If the student required re-entry into Tier 3 after a previous exit

A student exited Tier 3 when she or he reached the benchmark on the targeted skills. A student who had previously exited Tier 3 re-entered as needed.

Instruction and interventions. The program for Tier 3 was scientifically based and emphasized the critical elements of reading for students with reading difficulties or disabilities. Tier 3 instruction was sustained, intensive, and strategic; it was spe-

cifically designed and customized for small group (one-to-three) reading instruction. Interventions for Tier 3 included sound review, phonics and word recognition, vocabulary, fluency, passage reading, and comprehension.

When a student "repeated" or got a "second dose" of a Tier 2 or Tier 3 intervention, the intervention was continued with the same intensity, at the student's skill level, with the speed of progression being determined by student mastery, as was the case for the first "dose."

Interventions were not scheduled during core reading instruction, and teachers selected the times for interventions according to times in the classroom that they thought students could make up work.

Personnel. Qualified personnel for Tier 3 were classroom teachers, reading specialists, or outside interventionists. In the research treatment, the qualified personnel were graduate research assistants and full-time staff hired for tutoring. All had college degrees, some were certified teachers, and all were trained to 100 percent implementation fidelity before beginning teaching. Researchers looked for tutors with previous experience teaching and working in the schools, knowledge of reading instruction, and a willingness to implement a standard treatment protocol.

Setting/time/pacing. The setting for Tier 3 instruction was always outside the general education classroom (in pod areas or separate classrooms, for example). Each group consisted of two or three students. Tier 3 instruction was nearly always one 50- or 60-minute session each day for 100 days (across the school year). Students could exit after 50 sessions. For a couple of groups of students, Tier 3 comprised two sessions each day (30 minutes per session) for 100 days across the school year.

Number of cycles. Students could have a number of Tier 3 intervention cycles. Students in the second grade design might have experienced Tier 1 plus Tier 3 in consecutive semesters if the assessments at the beginning of each semester determined that they were eligible.

A student who had received previous Tier 3 instruction and had exited could re-enter Tier 3 as needed. Students could exit from Tier 3 intervention during the middle of the school year only if they demonstrated grade-level performance on oral reading fluency measures.

Progress monitoring. Progress monitoring occurred twice a month on the targeted skill to ensure adequate progress and learning and was based on the grade level of the students. Phonemic segmentation fluency and nonsense word fluency were used in the fall of first grade, and nonsense word fluency and oral reading fluency were used in the spring of first grade. Oral reading fluency is used in second and third grade. At each level of the three-tier model, there was documentation of the individual characteristics, background, school experiences, and outcomes of students who did, and did not, make adequate progress. (See Table 5.31 on page 5.73 for qualification and exit criteria for Tier 3.)

Fidelity of Implementation

Fidelity measures/observations – Tier 1. Fidelity of implementation was monitored for all interventions. To monitor implementation, the researchers used classroom observations (a strictly passive activity for the researcher) and student data. The researchers reviewed several tools for collecting data on teachers' delivery of reading instruction and selected the revised Instructional Content Emphasis (ICE-R) instrument. This is a valid and reliable observation instrument used to systematically categorize and code the content of reading and language arts instruction and can be used to collect data helpful in answering the following questions: What is being taught? How is it being taught? How well is it being taught? What is being used to teach? Reliability checks were done before instructional methods were used in the schools, and frequent discussions between observers ensured that instruction was coded reliably across observers. During observations, Tier 1 coordinators used a checklist of key features (the ICE-R). Data from the ICE-R determined fidelity.

Informal classroom observations and visits. School site coordinators visited the teachers in their classrooms on a regular basis and provided follow-up to the professional development sessions (for example, modeling strategies). During informal visits, school site coordinators did not complete the ICE-R and were able to be actively involved (for example, modeling a lesson). Informal visits usually lasted only 15 to 30 minutes. Field notes or short observation checklists were completed after each informal observation. Data collected during these visits were then compiled with the ICE-R data to create a complete picture of the instruction each teacher provided at Tier I.

Classroom observation data were collected

three times for current intervention teachers and once for other participating teachers to document reading instruction and the accurate implementation of strategies addressed in professional development activities.

Fidelity measures for Tier 2 and Tier 3. For Tier 2 and Tier 3 interventions, two observers were trained on specific fidelity measures using videos. The observers then used live observations for reliability. Inter-rater reliability for both intervention measures was above 90 percent. Reliability was also discussed at length in training. Fidelity checklists were completed three times per semester for each tutor.

RTI as an Effective Prevention System

For this research, the reading skills of all students were assessed. Comparison of control and experimental groups indicated that the three-tier model improved the reading outcomes of students participating in Tier 1 interventions and decreased the number of students in need of Tier 2 interventions. Implementation of Tier 2 intervention for struggling readers was also shown to improve student reading outcomes and allow most students to exit intervention.

Parent Involvement

Parents were provided information and training to facilitate active involvement in student reading development. Researchers planned to inform and train parents by using an enhanced web site, literacy-related articles in school and district newletters, and informational workshops at individual schools. Researchers also considered giving a parent survey.

Disability Determination

This model was not used for specific learning disability determination and special education eligibility. The three-tier project focused on effectiveness for early identification and remediation of students at risk for reading problems and students with disabilities. It allowed stakeholders to examine the reading profiles of students later identified for special education, including the amount and effectiveness of Tier 2 and Tier 3 interventions provided. Although this model is not used to determine SLD eligibility, the researchers established a well-organized and sophisticated data management system that allowed ready access to academic information about specific students.

Due Process Procedures

The project was not involved with due process procedures.

Resource List: Research Examples

Comprehensive Test of Phonological Processing (CTOPP) (Pearson Assessment)
http://ags.pearsonassessments.com/

The Comprehensive Test of Phonological Processing (CTOPP) assesses phonological awareness, phonological memory, and rapid naming. Persons with deficits in one or more of these kinds of phonological processing abilities may have more difficulty learning to read than those who do not.

Curriculum-Based Measurement (CBM) (a progress monitoring method)

Curriculum-based measurement (CBM) is a progress monitoring method that uses specific measures to enhance student performance most often in the areas of reading, mathematics, written expression and spelling. The specific measures criteria includes: reliable and valid generalized performance indicators, frequent administration through use of short duration assessment, direct and repeated student performance measurement, multiple assessment forms that are inexpensive, and sensitivity to student achievement changes over time.

DIBELS (University of Oregon)
http://dibels.uoregon.edu/

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of standardized, individually administered measures of early literacy development designed to be short (one minute) fluency measures used to regularly monitor the development of pre-reading and early reading skills.

Instructional Content Emphasis (revised) (ICE-R) (M.S. Edmonds & K.L. Briggs)

An observation instrument used to systematically categorize and code the content of reading and language arts instruction. The four dimensions for descriptive data include: (A) main instructional category, (B) instructional subcategory, (C) student grouping, and (D) materials, with three additional coding categories: instructional focus, student engagement, and instructional quality. A more detailed description of ICE-R can be found in Edmonds, M.S. & Briggs, K.L. (2003). Instructional content Emphasis Instrument. In S.R. Vaughn and K.L. Briggs (Eds.) Reading in the classroom: Systems for observing teaching and learning. Baltimore, MD: Paul H. Brookes.

Math FLASH (Vanderbilt University)

This computer software program was developed by L.S. Fuchs, C.L. Hamlett and S. Powell in 2003 while conducting elementary education-related research. It is available from L.S. Fuchs, 328 Peabody, Vanderbilt University, Nashville, TN 37203.

Peer-Assisted Learning Strategies (PALS) and Kindergarten Peer-Assisted Learning Strategies (K-PALS) (Vanderbilt Kennedy Center for Research on Human Development)
http://kc.vanderbilt.edu/kennedy/pals/
http://www.peerassistedlearningstrategies.net

K-PALS, PALS Reading, and PALS Math enable classroom teachers to accommodate diverse learners and help a large population of these students achieve success. PALS Reading and PALS Math have been approved by the U.S. Department of Education's Program Effectiveness Panel for inclusion in the National Diffusion Network on effective educational practices.

Social Skills Rating System (SSRS) (Pearson Assessments)
http://ags.pearsonassessments.com/

The Social Skills Rating System (SSRS) was developed by Frank Gresham and Stephen Elliot. It is a nationally standardized series of questionnaires that obtain information on the social behaviors of children and adolescents from teachers, parents, and the students themselves. It can be used in third through 12th grades.

Johnson, E., Mellard, D.F., Fuchs, D., & McKnight, M.A. (2006). *Responsiveness to intervention (RTI): How to do it.* Lawrence, KS: National Research Center on Learning Disabilities.