Intensifying Reading Instruction for Students Within a Three-Tier Model:
Standard-Protocol and Problem Solving Approaches within a Response-to-Intervention (RTI) System

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An Article Published in

TEACHING Exceptional Children Plus

Volume 3, Issue 5, May 2007

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Abstract

Response to Intervention (RTI) provides a challenge for schools to deliver appropriate and scientifically validated reading instruction to all students through a three-tier model. While many educators recognize the need for a strong core-reading program (Tier 1), interventions for Tier 2 and Tier 3 students remain more difficult to implement. We provide a clear example of how one empirically supported program was implemented within a three-tier model for K-3 students. Our example highlights the efficiency and effectiveness of a standard-protocol approach with problem solving. Effect sizes for K-2 students across the three tiers ranged from .50 to 3.96 on Dynamic Indicators of Basic Early Literacy Skills (DIBELS) measures; effect size improvements on the Scholastic Reading Inventory (SRI) ranged from .72 to 3.37 for third-grade students.

Keywords

Reading, Three Tier Model, Response to Intervention

SUGGESTED CITATION:

Marchand-Martella, N.E., Ruby, S.F., & Martella, R.C. (2007). Intensifying reading instruction for students within a three-tier model: Standard-protocol and problem solving approaches within a Response-to-Intervention (RTI) system. *TEACHING Exceptional Children Plus,* 3(5) Article 2. Retrieved [date] from http://escholarship.bc.edu/education/tecplus/vol3/iss5/art2

The newly reauthorized Individuals with Disabilities Education Improvement Act (IDEA) 2004 offers K-12 educators the opportunity to rethink how services are provided to *all* students. This legislation has given local education authorities the option to identify students with learning disabilities based on their failure to respond to empirically supported interventions that are delivered with integrity in the schools. While issues of feasibility are being questioned, this new option for eligibility determination has been embraced by researchers, practitioners, and the federal government as a more equitable and systematic route to providing services to students. Additionally, this option seeks to eliminate poor instruction and contextual variables as possible causes for academic deficits (Vaughn, Linan-Thompson, & Hickman, 2003).

One approach advocated to facilitate the option of identifying students based on their failure to respond to instruction is termed response to intervention (RTI) (e.g., Fuchs, Mock, Morgan, & Young, 2003). RTI is defined as a change in behavior or performance as a function of an intervention (Gresham, 2002). It represents a decision making process that carefully examines school-wide, classroom, and individual student progress in instructional and curricular efforts delivered by schools. The National Association for State Directors of Special Education (NASDE, 2005) identified eight core principles of RTI and created a handbook for policy considerations and implementation (see Table 1).

According to the NASDE report, research findings regarding evidence-based instruction from the National Reading Panel (NRP) (National Institute of Child Health and Human Development [NICHD], 2000) have been particularly relevant for RTI practices. The NRP provides educators with knowledge about the key components of effective reading instruction including phonemic awareness, phonics, fluency, vocabulary, and comprehension. Given that the majority of students who have specific learning disabilities qualify in the area of reading (Lyon et al., 2001; Meese, 2001), these key components are imperative features for preventative programming efforts.

Table 1. NASDE Eight Core Principles of RTI

1. We can effectively teach all children.
2. Intervene early.
3. Use a multi-tier model of service delivery.
4. Use a problem-solving method to make decisions within a multi-tier model.
5. Use research-based, scientifically validated interventions/instruction to the extent available.
6. Monitor student progress to inform instruction.
7. Use data to make decisions (this is a central concept to RTI).
8. Use assessment for three different purposes: screening, diagnostics, and progress monitoring.

In developing a supportive system for RTI, schools start by implementing a scientifically validated core reading program (Tier 1). Although most students (approximately 70-80%) will meet proficiency with solid Tier 1 instruction, research suggests that a predictable group of students (approximately 15-20%) will require targeted or strategic, small group instruction (Tier 2), and about another 5-10% will require intensive, individualized interventions (Tier 3) (Adelman & Taylor, 1998; Sugai, Horner, & Gresham, 2002; Vaughn, Linan-Thompson, & Hickman, 2003; Walker et al., 1996).

Students who are at-risk for school failure are in need of supplemental instruction in addition to the core (Tier 2). Schools generally implement supplemental programs through either a standard-treatment protocol or problem-solving approach (Fuchs et al., 2003; Sattler & Hoge, 2006). A standard-protocol approach involves the implementation of a scientifically validated program for groups of students who evidence similar reading difficulties. Standard protocols aid in the consistency of implementation across teaching staff (Fuchs et al., 2003).

On the other hand, a problem-solving approach to RTI addresses the issue of individual differences in students by matching interventions to the function or cause of the academic deficit. While problem solving has been demonstrated to improve outcomes (Burns & Symington, 2002), utilizing this approach with a large number of students in Tier 2 (10-15%) may not be practical or efficient (Fuchs et al., 2003).

For those students who do not respond to Tier 2 programming, more intensive instruction and/or alternative reading programs are generally needed (Tier 3). The problem with an alternative program is that students are often removed from the general education curriculum when, in fact, they may make adequate progress if given additional intensive instruction in the scientifically validated core reading program.

The current study provides a clear example of a standard-protocol approach with problem solving (at the Tier 3 level) utilizing the same scientifically validated reading program with students across all three tiers of instruction. This strategic instructional model allowed struggling readers to have access to the general education curriculum with differentiated intensity at each level.

Reading Model Implementation and Findings

We summarize a program evaluation conducted by Marchand-Martella, Martella, Kolts, Mitchell, and Mitchell (2006) involving one Pacific Northwest Title I elementary school (32% free or reduced price lunch). This school's goal was to implement a three-tier strategic model of intensifying reading instruction using a standard-treatment protocol approach with problem solving at Tier 3.

Elementary School

The strategic three-tier model was implemented across grades K-3 and involved 327 of the school's 659 students (grades K-6). Of these 327 students, 72 were in kindergarten (51 were typically achieving, 15 were Title I, and 6 received special education services), 86 were in first grade (52 were typically achieving, 24 were Title I, and 10 received special education services), 80 were second graders (64 were typically achieving, 10 were Title I, and 6 received special education services), and 89 were in third grade (68 were typically achieving, 15 were Title I/Learning Assistance Program [LAP], and 6 received special education services).

Fourteen general education teachers participated (2 kindergarten, 4 first grade, 4 second grade, and 4 third grade). Additionally, a Title I/Learning Assistance Program (LAP) teacher, LAP teacher, special education teacher, and seven paraeducators provided instruction to students.

This school was the only Direct Instruction school in the district. It also had the highest test scores in reading and writing compared to other district schools on the Washington Assessment of Student Learning (WASL), a statewide assessment administered in fourth grade. Further, the school received one of only nine Title I academic achievement awards offered by Washington State in December of 2005.

Targeted Curriculum

Reading Mastery Plus was the reading program implemented at Tiers 1, 2, and 3. *Reading Mastery Plus* is a comprehensive core reading program aligned with scientifically-based reading research recommendations (see NICHD, 2000) and published by Science Research Associates (SRA); it is a revision of the highly effective *Reading Mastery Classic* program (see Schieffer, Marchand-Martella, Martella, Simonsen, & Waldron-Soler [2002] and Stein & Kinder [2004] for a research summarization on this program). *Reading Mastery Plus* includes seven levels (i.e., K-6); only levels K-5 were used in this evaluation.

Measures

Kindergarten though second-grade students were pre- and posttested with the *Dynamic Indicators of Basic Early Literacy Skills* (*DIBELS*) (Good & Kaminski, 2002); the *Scholastic Reading Inventory (SRI)* (Scholastic, 2003) was used for the third graders. All teachers responded to a 10-question social validation survey on the *Reading Mastery Plus* program.

Program Implementation

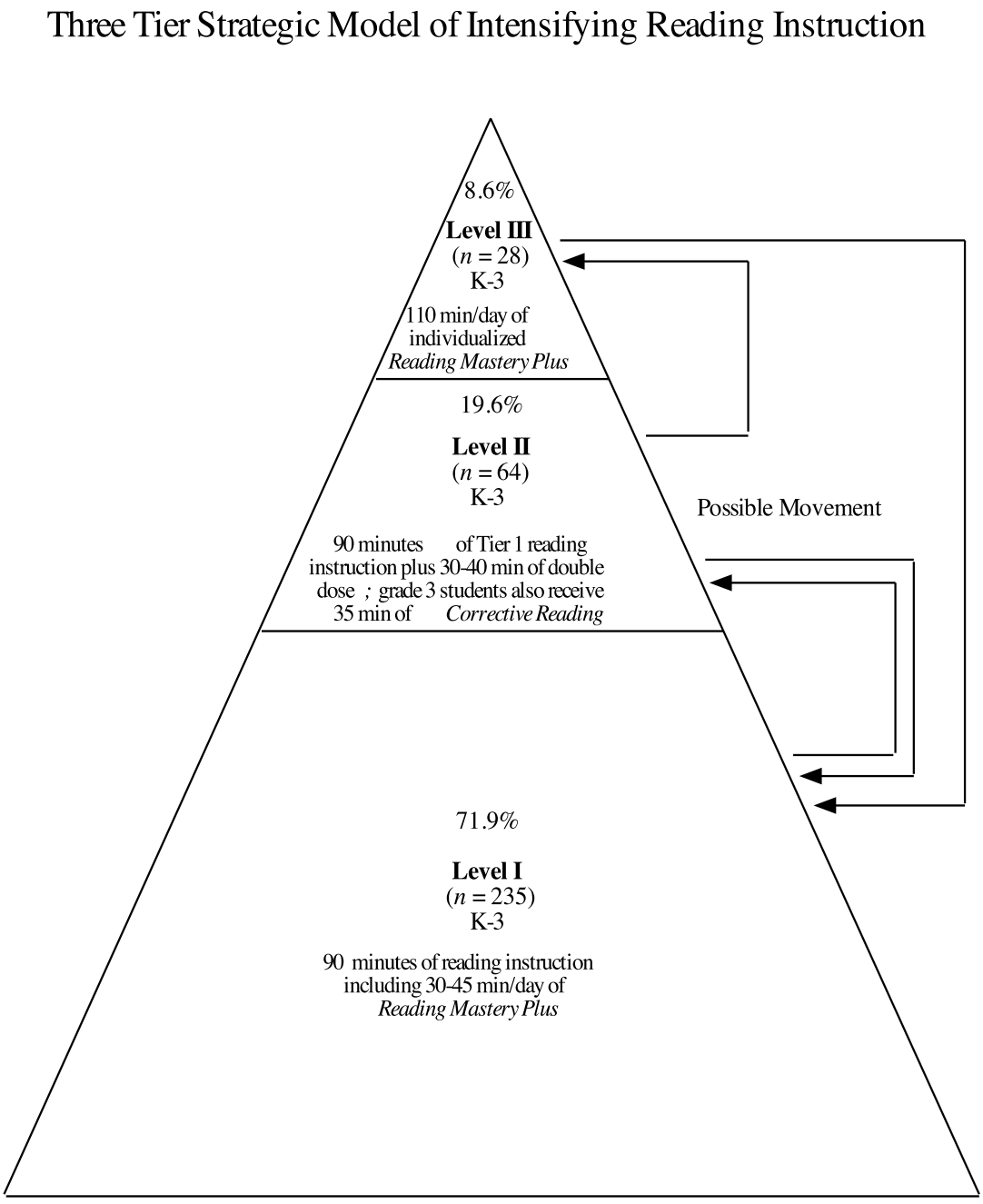
All students were tested for placement at the beginning of the school year. Students were grouped with other students of similar skill levels within their respective grades across classrooms. Students were moved to higher or lower instructional groups depending on individual performance as assessed by within-program assessments. Grade-level team meetings were held once per week where the grouping and movement of students could be discussed. Decisions for group movement were predominantly data driven, but teacher judgment had a role as well.

At the Tier 1 level, students received 90 minutes of reading instruction 5 days per week. Of this 90 minutes, *Reading Mastery Plus* instruction accounted for 30 to 45 minutes of instruction; the remaining time was devoted to seatwork activities, reading centers, and independent reading. Independent reading was facilitated by the school's adoption of Scholastic's *Reading Counts!*, a supplemental reading program where students choose from over 33,000 books at their own Lexile score level and then take a quiz. Thirty-two (37%) of the highest performing first-grade students and all second- and third-grade students participated in *Reading Counts!*

For Tier 2, Title I (grades K-3) and LAP (grade 3) instruction also occurred daily; students received a "double" dose/reteaching of *Reading Mastery Plus* accounting for an additional 30-40 minutes of small group instruction. Grade 3 students who received LAP services also received supplemental instruction in *Corrective Reading* in a before-school tutorial program in small groups of two to five students. Three lessons were covered each week, each lasting 35 minutes.

Finally, Tier 3 *Reading Mastery Plus* instruction lasted 110 minutes per day in the special education resource room. More intensive instruction using *Reading Mastery Plus* was conducted to meet the individualized

Figure 1.



needs of these students (e.g., one-on-one, focused work on individual sounds, use of sound amplifier for students who were hard of hearing, use of laser pointer to help with tracking, individualized motivational systems) (problem-solving approach). Individual needs were determined by an examination of within program assessments (e.g., rate and accuracy checks), program activities (e.g., seat work assignments), and oral performance (e.g., responding during teacher-delivered instruction). For example, a first-grade student

with mental retardation struggled with sounds during teacher-delivered instruction and subsequent within program assessments and activities. In addition to receiving the core program in a one-on-one format, this student received focused instruction (flash cards, worksheets, sound drill and practice with an adult) on difficult sounds until those sounds were firm (mastered). Thus, *all* students received *Reading Mastery Plus* as their primary (core) reading program. Increasing instructional intensity was evident from Tiers 1 to 3 (see Figure 1).

Training and Program Fidelity

An educational consultant conducted training and coaching sessions. All teachers were experienced in Direct Instruction (1-15 years of experience) and participated in 2.5 days of training on the use of the *Reading Mastery Plus* program. The consultant also observed all the general education teachers and the Title I/LAP teacher and provided feedback on their lessons. These individuals were observed at least twice (once in the fall and once in the spring). During these observations, teachers were rated on five instructional areas: (1) Teacher follows format outlined in *Reading Mastery Plus* program; (2) teacher uses specific praise statements and provides immediate feedback; (3) teacher uses clear signals to evoke group responses; (4) teacher uses proper error correction procedures; and (5) teacher pacing engages students and is appropriate to the task. Teachers were rated on a scale of 0 to 5, with 0 = "does not cover at all during the lesson" and 5 = "covers point well during the lesson." Ratings were shared with teachers; if necessary, the educational consultant modeled needed instructional behaviors and had teachers practice with their groups. Teacher ratings averaged between 4.22 (Area 4) to 4.82 (Area 1) across observations and teachers.

Findings

Statistically significant improvements (determined via t-tests) were evidenced by kindergarten, first-grade, and second-grade students on all *DIBELS* subtests given as pre- and posttests (i.e., initial sound fluency and letter naming fluency—kindergarten; letter naming fluency, phoneme segmentation fluency, and nonsense work fluency—first grade; nonsense word fluency and oral reading fluency—second grade). Effect sizes ranged from .50 (nonsense word fluency—typically achieving second-grade students) to 3.96 (initial sound fluency—kindergarten students in special education).

For third-grade students, there were statistically significant effects for normal curve equivalents (NCEs) (determined via t-tests) and Lexile scores (determined via Wilcoxon signed-ranks tests) for all student groups (i.e., typically achieving, Title I/LAP, and special education) with the exception of Lexile scores of students in special education. Effect size improvements on the *SRI* ranged from .72 (NCEs—all students combined) to 3.37 (Lexile—Title I/LAP students). Note that an effect size of .25 is considered educationally significant (Adams & Engelmann, 1996). Thus, students demonstrated pretest to posttest improvements of more than half of a standard deviation on *all* subtests and measures. Students demonstrated large and important improvements in their reading skills, whether or not they were at risk for school failure or had disabilities.

Further, there were few differences between those students who received Title I/LAP services and those who received special education services. The only statistically significant difference [determined via t-tests] was found for letter naming fluency favoring students who received special education services. This finding is important given that students receiving special education services would be expected to score below these other students. Finally, social validation data from

the teachers indicated positive comments about all aspects of the program.

When considering programs within a three-tier model of reading instruction, this evaluation showed that one program—*Reading Mastery Plus*—could be implemented across Tiers 1, 2, and 3, with intensity and instructional time changes rather than the use of different programs. This finding is important because students never "left" the core (primary) program. Further, when a new program was used to supplement instruction (grade 3 tutorial program), it involved the same instructional methodology (e.g., *Corrective Reading* and *Reading Mastery Plus* are both Direct Instruction reading programs). Alignment and consistency across instructional tiers within the three-tier model seems to be key in this endeavor.

What are Important Components of an RTI Model?

Cotton (1995) noted the following typical elements of effective schools based on a research synthesis of their practices (see further discussion by Marchand-Martella, Blakely, and Schaefer, 2004):

- Academic achievement is the school's top priority.
- Strong leadership guides the instructional program.
- Curriculum is based on clear goals and objectives.
- Students are grouped for instruction.
- School time reflects the academic priorities.
- Learning progress is monitored closely.
- Discipline is firm and consistent.
- There are high expectations for quality instruction.
- Incentives/rewards build strong motivation.
- Parents are invited to become involved.
- Staff strive to improve instructional effectiveness based on multiple sources of data related directly to student performance.

This school embraced elements of effective school practices in the following ways. First, there was a shared vision of excellence at the school. The school believed that *all* students could learn if taught effectively, no matter if they were at risk for school failure or had disabilities. Second, the school embraced a scientifically-validated reading program and its importance for *every* child. "Direct Instruction programs are structured for success, so teachers do not need to force-fit curriculum to meet the needs of their struggling students" (Marchand-Martella, Kinder, & Kubina, 2005, p. 7).

Third, leadership at the school was strong. The principal was actively involved in all aspects of the program, relished being part of a research project, and did not "shy away" from controversy — the use of explicit reading instruction was not endorsed by everyone outside the school building. Fourth, teachers received side-by-side coaching from a seasoned educational consultant. School staff learned that creating an environment that promotes *staff learning* is one of the keys to promoting *student learning*. Thus, focused work on staff development (including training and side-by-side coaching) proved critical to the success of this school.

Fifth, teachers were accustomed to making data-based decisions and collecting performance data. Discussion among teachers related to *skill* rather than *ability* when talking about *any* student. Finally, the school believed in active parent support and engagement and regularly involved parents in the reading process (e.g., daily reading checkout sheets were sent home to parents, parents listened to and provided feedback to children as classroom volunteers).

It is critical that *all* students learn to read in the primary grades. This skill is essential to future success in school and in life (NICHD, 2000). Programs that can be used successfully at *all* tiers of instruction with intensity and instructional time changes help to ensure that no child is ever left behind. This school accomplished this goal and serves as an effective model of reading instruction for others to emulate. When examining the current program's success in relation to NASDE's (2005) recommendations for RTI implementation, we found that each of the eight core principles was met.

The unusual feature of this implementation is that it used a standard- protocol approach at all three levels of instruction. Additionally, a problem-solving approach was implemented at the Tier 3 level. The advantage of a standard-protocol approach was that all teachers were trained in the core curriculum used at each of the three levels. Further, the program was implemented with fidelity (as described in the Marchand-Martella et al. 2006 investigation); fidelity concerns were the basis for Fuchs et al. (2003) to recommend the use of a standard-treatment protocol approach. According to Fuchs et al., "practitioners are required to become expert at what is basically one thing" (p. 168). However, once students reach the Tier 3 level, a problem-solving approach may be added to the standard-protocol due to individual student needs. The overall results of this evaluation suggest a possible efficacious model for meeting the needs of all learners.

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