Better Evidence-based Education

STRUGGLING READERS

Identifying and preventing early reading problems

Interventions for struggling secondary students

Making the most of professional development

The University of York
Institute for Effective Education

JOHNS HOPKINS UNIVERSITY
School of Education
Center for Research and Reform in Education
Robert Slavin, Director of Johns Hopkins School of Education's Center for Research and Reform in Education and Editor-in-Chief of Better magazine, has launched a new blog with Education Week entitled “Sputnik: Advancing Education Through Innovation and Evidence.” This unique blog, located at blogs.edweek.org/edweek/sputnik, features commentary from Slavin and guest authors on how educational policy can be informed by research and innovation and, in turn, promote development and evaluation of promising practices to improve student outcomes.

Just a few of the topics covered so far include:
- What Do We Mean by “Proven” Programs in Education?
- Making the Most of Common Core State Assessments
- The Unmet Promise of Education Technology
- Education Innovation: What It Is and Why We Need More of It
  (written by Jim Shelton, the U.S. Department of Education's Assistant Deputy Secretary for Innovation and Improvement)

Be sure to tune in to Sputnik regularly, share your thoughts, and invite others to comment as well!

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Editorial

WHEN A CHILD FAILS TO LEARN TO READ WELL in the early years, it’s an educational disaster. Unless the problem is quickly rectified, the child is likely to fail in other subjects that depend on reading, lose motivation, and begin to engage in negative behaviors. This depressing downward spiral takes place all too often in all schools, but especially in those with many disadvantaged students.

Fortunately, we know a lot about how to solve reading failure. If teachers can identify struggling readers early, they can provide a broad array of effective interventions, from one-to-one and small-group tutoring to cooperative learning to comprehensive school reform. This issue of Better presents articles on proven solutions to reading failure in both elementary and secondary schools. These solutions vary in many ways, but collectively they tell us something very important: ultimately, virtually all children can succeed in reading. Not every solution is perfect for every child but, for virtually every child, one of the methods discussed in these pages is likely to work.

In helping struggling readers, our problem is not that we don’t know what to do; it’s that we don’t do what research has told us is effective. I hope this issue helps you learn about the main solutions you might try to eliminate reading failure in your schools.

Robert Slavin
Editor-in-Chief
Director of the Center for Research and Reform in Education
Johns Hopkins University

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FALL 2011 Better: Evidence-based Education
What works for struggling readers

Robert Slavin reviews research on all types of programs intended to help struggling readers in the elementary grades: one-to-one tutoring, small-group methods, technology, cooperative learning, and comprehensive school reform.

EVERY EDUCATOR AND PARENT knows how important it is for children to get off to a good start in reading. Children who do not read well in the early elementary grades are likely to have problems in all areas of schooling, are unlikely to graduate, and may develop serious behavioral or emotional problems. Making certain that every child is successful in reading has to be one of the most important goals for every elementary school.

Over the past 20 years, many strategies have been proposed to help children who are struggling to learn to read in grades 1–5. My colleagues and I carried out a systematic review of studies evaluating these programs. Our findings are summarized in this article.

Review methods
Our review included a total of 96 studies that compared various approaches to helping struggling readers. These studies had to meet the following standards:
- Children who received the program in question were compared to a control group that did not.
- Children in experimental and control groups were pretested and found to be equivalent.
- At post-test, children were tested on valid reading measures.
- The study took place over a period of at least 12 weeks.

Findings

One-to-one tutoring by teachers
One-to-one tutoring by specially trained teachers is, not surprisingly, one of the most effective strategies. Reading Recovery, a New Zealand program now used throughout the English-speaking world, has excellent outcomes, especially in recent UK studies that had more of a phonetic emphasis than earlier U.S. studies. Other phonetic approaches to one-to-one tutoring, such as Early Steps, Targeted Reading Intervention, and Reading Rescue, had even greater effects on children’s reading.

One-to-one tutoring by paraprofessionals and volunteers
Studies found that teachers get better reading outcomes than paraprofessionals, but paraprofessionals using programs such as Sound Partners may be more cost-effective. Reading outcomes for volunteers are variable, but usually less than those for teachers or paraprofessionals. However, volunteer programs with very well-trained volunteers, such as Book Buddies and SMART, had very good outcomes.

Small-group tutorials
Evaluations of phonetic programs provided in very small groups (two–six children) found moderate positive effects for several programs, such as Quick Reads, Corrective Reading, and Voyager Passport.

Classroom process approaches
One category of approaches for struggling readers, especially in the upper-elementary grades, involves improvements in core reading instruction for all students, rather than services to individuals or small groups. In particular, these approaches include cooperative learning methods in which students work in pairs or small groups; methods for teaching metacognitive “learning to learn” strategies; and combinations of cooperative learning and metacognitive teaching, such as Cooperative Integrated Reading and Composition (CIRC), Peer Assisted Learning Strategies (PALS), and Direct Instruction/Corrective Reading. For the lowest-achieving 25% of students in these studies, effects of these programs averaged at levels like those of one-to-one tutoring.

Technology
Over the past 30 years, one of the most common solutions for students who are
struggling to learn to read is to give them computer-assisted instruction (CAI) software. However, the results of our review showed that this type of intervention has minimal impact on reading. Of all of the approaches included in the review, technology was found to have the smallest effect on the attainment of struggling readers.

Comprehensive school reform
The comprehensive school reform program Success for All combines all of the effective strategies discussed so far: cooperative learning, phonics, teaching of metacognitive skills, and one-to-one or small-group tutoring. A large number of evaluations of Success for All find this approach to have substantial and lasting impacts on reading achievement.

Figure 1 summarizes the findings of our review. As the figure shows, all of the approaches we reviewed had some positive effect on reading, but some had more than others. One-to-one phonetic tutoring and comprehensive school reform strategies show the greatest gains for beginning readers, and inexpensive classroom instructional process programs show substantial gains in the upper-elementary years.

What we know
- One-to-one tutoring with phonetic materials and well-trained teachers works very well, but is most expensive.
- One-to-one phonetic tutoring by paraprofessionals and small-group methods also work well.
- Classroom process approaches, such as cooperative learning, are effective for upper-elementary students struggling in reading.
- CAI has little benefit for struggling readers.
- Comprehensive models that combine cooperative learning, tutoring, and other strategies work best.

Conclusion
The most important message from research on programs for struggling readers is that proven solutions are available. There is no reason that so many children must continue to struggle in reading. The research finds that relatively inexpensive interventions can be effective for many struggling readers, and might be tried before providing, for example, one-to-one tutoring by teachers. However, schools should be ready to do whatever it takes to make sure that every child leaves elementary school a confident and capable reader.

About the author
Robert Slavin is a professor in the Institute for Effective Education at the University of York, Director of the Center for Research and Reform in Education at Johns Hopkins University, and Co-founder and Chairman of the Success for All Foundation, a restructuring program which helps schools to identify and implement strategies designed to meet the needs of all learners.

Further reading

CHILDREN IN OUR SOCIETY ARE REQUIRED to read well in early elementary school. Those who don’t learn to read well in these early years usually face a school trajectory of failure that includes poorer overall learning and poorer self-esteem, as well as a greater chance of severe behavioral problems and eventual school dropout. These negative consequences of poor early reading happen to many struggling readers, despite the fact that these children started school ready and eager to learn. As a society, we owe all struggling readers the best possible schooling opportunities and a fast start in developing literacy. Yet, despite policy makers and educators endorsing the need for better early literacy instruction for struggling readers, the attainment of the lowest-achieving children has not improved over the last few decades.

For years, schools have been providing a number of programs, generally not research based, for struggling readers who fail to learn to read well in early elementary school. These strategies include specific programs that take the child out of the classroom for specialized instruction, despite the fact that research suggests that classroom teachers may be the most effective professionals to help struggling readers. Although some of these programs work well, many do not make a permanent difference to overall performance. In addition, many of these programs require costly training of specialized teachers who deliver the program outside normal lessons. Thus, many schools find these programs too costly or not sustainable.

Targeted Reading Intervention
At the University of North Carolina we have developed a program, Targeted Reading Intervention (TRI), which uses a different strategy to help struggling readers make rapid progress in reading. We train classroom teachers to help struggling readers, since they are the professionals who know the children the best, spend the most time with them, and can sustain the interventions after we have left their school. We have found our TRI program to be as effective as programs that pull children out of their usual lessons, while ensuring a more permanent, positive difference in reading for the struggling readers.

TRI has the following elements that can be employed by almost all schools, even with limited economic resources:

● One-to-one instruction. Classroom teachers work one-to-one with one struggling reader at a time every day for 15 minutes while the rest of the class is focused on another task. This efficient individualized instruction targets the most
pressing need of the student in reading. These sessions continue daily until the child makes rapid progress in reading and can be moved into small-group and personalized independent activities to maintain reading gains. These sessions optimize the child’s engagement and motivation because of the focus on their individual learning.

- **Diagnostic thinking and “Instructional match.”** Recent evidence has emphasized the importance of “instructional match,” that is, geared reading instruction to the skill level of the child. Effective teaching requires classroom teachers to think diagnostically and to personalize instruction for each struggling learner. By learning a set of diagnostically efficient word identification and personalized independent activities to optimize the child’s engagement and maintain reading gains. These sessions continue daily until the child makes rapid progress in reading and can be moved into small-group and personalized independent activities to maintain reading gains.

**What we know**

- Reading failure can lead to a trajectory of failure in school and social and emotional difficulties.
- Research suggests that classroom teachers may be the most effective professional to help struggling readers.
- Support for struggling readers should focus on individual needs.
- Teachers, and therefore struggling readers, benefit from literacy coaches.

**Conclusion**

Struggling readers in early elementary school are at very high risk for later school failure, and other negative outcomes, unless we intervene early to maximize the possibility of good reading skills for these children. Recent research has endorsed small-group and one-to-one support from classroom teachers as being particularly beneficial for struggling readers, especially where this is diagnostic. Literacy coaches, who scaffold the instruction of teachers as they work with struggling readers, can create the best context for struggling readers to improve dramatically in reading.

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**Further reading**

Targeted Reading Intervention
http://targetedreadingintervention.org/

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**Further reading**

Targeted Reading Intervention
http://targetedreadingintervention.org/
Effective reading interventions for secondary students must be explicit, sustained, and targeted to the needs of each student, say Sharon Vaughn and Jack M. Fletcher

Reading interventions for secondary students

More text that students are expected to read, including longer passages and integrating reading for understanding across passages. All of these expectations for older readers make increasing demands on cognitive processing, including engaging memory, applying inferences, applying word learning in text, and summarizing. If beginning reading is not mastered, many students lack the automaticity of text reading essential for the allocation of resources to higher level cognitive processes.

Implementing effective reading interventions with secondary students

Most secondary schools should assume that some of their students will demonstrate significant reading problems and that for many of these students, targeted interventions are necessary. So how can schools identify these students and implement a school-wide plan for improving their reading outcomes? Over the past five years, with funding from the National Institute of Child Health and Human Development, we have undertaken a series of studies to better understand how to identify and treat secondary students with significant reading problems.

All subject teachers should participate in professional development designed to enhance their knowledge of teaching vocabulary and comprehension within their own content area.

For many children. But what happens to older students? Many still have significant reading difficulties and benefit from reading interventions in the upper-elementary years and beyond. Some of these students require interventions because the instruction they received in the earlier grades was inadequate or because they have late onset reading problems. These late onset reading problems may be caused by the increasing demands on older readers, including:

- More complex words, particularly multi-syllable words and academic vocabulary (e.g., “voracious,” “equality”);
- More complex texts and variation in text types (e.g., information text, reports, historical documents, poetry);
- More text requiring background knowledge for understanding (e.g., history or geography texts); and

What can schools do to provide intensive interventions for students with significant reading difficulties?

For many secondary students, enhancing vocabulary and comprehension through content area instruction is beneficial, but not sufficient. They also require ongoing and intensive interventions to support their reading success. Determining the best schedule for providing interventions for secondary students is challenging and
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Help for secondary students

has been resolved in many ways including: before-school interventions, after-school interventions, interventions during electives, and interventions during the summer. We provided reading interventions every day of the academic year during electives. Students who did not meet reading comprehension criteria at the end of the school year were enrolled in reading interventions the following year. We continued this pattern from 6th grade until 8th grade with a subset of students with significant reading problems receiving reading interventions for three years. Based on this multi-year study, we have several suggestions:

- Secondary students with reading difficulties benefit from reading interventions. However, most do not make rapid progress and will need sustained interventions for more than one term and, for many students, more than one year.
- The complex reading-related difficulties of older students, such as low vocabulary, inadequate background knowledge, and challenges applying higher-level cognitive strategies, require reading-related instruction across disciplines and grades.
- Consider the type of reading problems of the student (e.g., word level, vocabulary, fluency) and organize the reading intervention to focus the treatment on these reading needs. The majority of older students with reading difficulties benefit from interventions focused at both the word and the text level.
- Most older readers with reading difficulties demonstrate significant gaps in their background knowledge and vocabulary related to their content learning. Procedures for enhancing vocabulary and background knowledge throughout the instructional day are needed.
- Older readers benefit from explicit instruction on reading for understanding through text-based comprehension strategies and self-questioning.
- Reading comprehension gains of older readers with significant reading problems are likely to be considerably smaller than those in other reading-related areas such as foundation skills (e.g., phonemic awareness) with younger students.
- Closing the gap for older readers with reading difficulties requires instruction that is both school-wide and targeted to meet their learning needs, and is likely to be needed for several years.
- Most response to intervention (RTI) approaches with younger students rely on increasingly intensive tiers of interventions determined by students’ response to typically effective interventions. Our findings suggest that this multi-tiered approach is different for older students. Secondary students do not need to “pass through” successively more intensive interventions as in early elementary grades; rather they can be assigned to less or more intensive interventions based on their current reading achievement.

What we know

- Many secondary students will demonstrate significant reading problems.
- Reading-related tests can be used to identify students with significant reading problems.
- Sustained school-wide approaches that integrate vocabulary and comprehension into individual subjects are beneficial.
- Many students also require ongoing and intensive supplementary interventions, often for more than a year.

Conclusion

Many secondary students demonstrate significant reading problems, including difficulties with word reading, vocabulary, and difficulties understanding and remembering what they read. Although secondary teachers do not always see themselves as reading teachers, vocabulary and comprehension can be integrated across the curriculum and professional development should be provided to support this. Many students will also require sustained and intensive interventions, and these should be focused on the needs of that individual.

About the authors

Sharon Vaughn is the H.E. Hartfelder/Southland Corp Regents Chair and Executive Director of the Meadows Center for Preventing Educational Risk at the University of Texas at Austin. Her research interests address developing, implementing, and evaluating effective interventions for students with significant reading problems. Jack M. Fletcher is the Hugh Roy and Lillie Cranz Cullen Distinguished Professor of Psychology at the University of Houston. Dr. Fletcher, a child neuropsychologist, has conducted research on children with reading and attention difficulties, and brain injury.

Further reading


Slavin RE et al (2009), Reading Programs for Middle School and High School: A Best Evidence Synthesis, _Reading Research Quarterly_, 43, 290–322.
Cracking the code with supplemental tutoring

Patricia Vadasy explains how code-based support delivered by paraeducator tutors can make a real difference for children who are struggling to learn to read.

THE UNDERLYING ISSUE FOR MOST STUDENTS with serious reading problems is their struggle learning “the code” of the English language. This includes the not-always-obvious relationships between letters and sounds, not to mention the 52 visually and verbally similar labels for letter names and sounds. Struggling readers often need more practice and reinforcement to acquire word recognition skills than classroom teachers or even reading specialists can provide.

Timing is critical, because children who start out as poor readers rarely catch up with their peers. Explicit and intensive early reading interventions, such as individual or small-group tutoring, can bring the word-level reading skills of many students at risk of reading problems into the average range. Research has identified the features of effective tutoring programs in early literacy skills, and these include: direct instruction in letter–sound relationships; scaffolded instruction in word reading and spelling; and structured reading of storybooks with tutor modeling and corrections.

Children from underprivileged backgrounds are most likely to struggle with learning to read, and so reading interventions can be particularly important for them. However, these students are often found in schools with the most limited resources for supplementing classroom teaching.

A new code-based program
For the past 15 years we have conducted research on how to effectively supplement classroom instruction for struggling beginning readers. We developed a code-based reading intervention aimed at first-grade children, followed by a version for kindergarten children. Both programs use one-to-one tutoring (a highly effective means of helping struggling readers), and are delivered by paraeducator tutors. The programs specifically target: alphabets, phonemic awareness, phonics, fluency, and application of word-level skills in storybook reading.

The components of the programs are:

- **Alphabets** – Letter–sound relationships are introduced at a reasonable pace, with extensive practice and correction opportunities.
- **Decoding** – Practice decoding individual words made up of both new and previously introduced letter sounds. Students often have difficulty learning to apply their new decoding strategies to read words in context. Individual lesson components offer ample opportunities for word identification in context-free text (e.g., word lists) and in storybook reading.
- **Segmenting and spelling** – Practice segmenting two–four phoneme words, and spelling both decodable and irregular words.
- **Storybook reading practice** – Students practice accurate and fluent reading in decodable stories that feature the letters and sounds they are learning. Storybooks are carefully selected with a low rate of introduction of novel words to increase successful reading, build motivation and confidence, and minimize error rates that influence reading progress.
- **Strategic integration** – Individual instructional components are linked to help students make connections between areas of literacy knowledge. For example, teaching letter–sound correspondence is integrated with teaching phonemic blending and segmenting, which is linked with decoding and spelling practice, and with storybook reading activities.
- **Judicious review** – Lessons have been field-tested with numerous cohorts of at-risk students, and are designed to provide adequate review for students with a range of reading needs.

The modified program for kindergarten children includes added teaching of phonological awareness and the alphabet, and a slower rate of introducing new skills.
Lesson include varied contexts for word recognition practice, to avoid drill and to promote the transfer of skills. Task variation and pacing is provided through short skill sessions within lessons and changes in tasks over the course of the intervention, to decrease boredom and promote motivation. Training for tutors and lesson instructions include explicit correction procedures, and metacognitive reminders to increase student awareness of task purpose and applications. Training prepares tutors to adjust their pace of instruction and provide additional review, scaffolding, and modeling, based on each student’s needs.

Do the programs work?
We first tested our intervention with first graders who averaged in the lowest quartile in reading skills in a pretest. At post-test, these students’ overall means averaged at grade level on alphabetic, decoding, and word reading skills. The effects across the studies were moderate to large for phonemic awareness, fluency, and comprehension, and were greatest for decoding and for word identification.

What we know
- Many students struggle with beginning word reading skills.
- Effective code-based intervention is explicit and intensive.
- Individual tutoring by paraeducator tutors effectively supplements classroom reading instruction for kindergarten and first-grade students.
- Pair tutoring is also effective.
- ELs also benefit, but with smaller effects than for native English speaking students.
- Students maintain treatment effects at one- and two-year follow-up.

Tutoring for pairs of students is a viable alternative. Furthermore, tutors in our pair study mentioned the positive dynamics of the pair work that seemed to enhance student motivation and enjoyment of the sessions. This warrants further study.

Were the benefits maintained?
Supplemental interventions require schools to re-allocate resources to put them in place.

Benefits for English learners
We recently examined the benefits of our programs for at-risk English learners (ELs), those who averaged in the lower quartile in language and literacy skills at pretest. For both kindergarten and first-grade students, the treatment effects for ELs were smaller than for native speakers. Kindergarten ELs showed significant treatment benefits in alphabeticics, word reading, and comprehension; first-grade ELs showed smaller treatment benefits. When we followed up the kindergarten students to grade 2, we found small treatment effects maintained for word reading and spelling; follow-up of the first-grade ELs to grade 3 revealed small treatment effects for word reading and comprehension. Our findings suggest that phonics-based early intervention for kindergarten ELs is most beneficial to establish strong word reading skills ready for them to move into first grade.

Summary
Evidence from many studies shows that intensive and explicit code-based early reading interventions can reduce the numbers of students with reading problems. The challenge for schools is how to take these effective interventions to scale, but carefully designed interventions provided by paraeducator tutors can effectively reach large numbers of students at risk of reading failure. Students who fail to respond to this first approach can be evaluated for more intense and differentiated intervention. With training in effective research-based instruction and well-designed curricula, paraprofessional tutors can help accelerate critical early reading skills for struggling readers. More careful consideration of the role that they can play in providing research-based tutoring may allow us to leave fewer at-risk children behind.

Further reading and online resources
Improving vocabulary instruction through Teacher Study Groups

Joseph Dimino, Mary Jo Taylor, and Russell Gersten explain how team meetings can be a forum for effective vocabulary professional development

GRADE-LEVEL TEAM MEETINGS can be a mixed blessing. On the one hand, they provide teachers with a chance to communicate with colleagues, share common problems and dilemmas, and share reactions to new curricula, standards, or interventions. On the other hand, discussions can meander; the focus can be more on sharing common gripes. It is a rarity for teachers to consider these meetings a source of serious new learning, or a means of translating research into practice.

In this article, we describe a new approach to professional development (PD) for teaching vocabulary, where grade-level team meetings are used as a forum for new learning and enhancing existing curricula to conform to evidence-based principles. This approach can lead to enhanced outcomes in vocabulary, and significant change in teaching practice.

A new approach to PD
Teacher Study Groups (TSGs) are an alternative to traditional modes of PD, which are often ineffective. They provide a model whose content and processes are grounded in, and validated by, research. In developing this framework, we relied on several sources. The first was our own research on PD. One of our consistent findings was the need to link the content of PD to curricula that teachers are actually using. Another was “the reality principle,” the need for suggestions for improving practice to be feasible to implement within the constraints of day-to-day teaching.

TSGs are intended to foster a deeper understanding of how scientifically based research in vocabulary instruction is applied to classroom practice. The program covers major research concepts in vocabulary, and teachers begin to think about and ultimately use research-based instructional strategies in their classrooms by integrating them into their existing curriculum.

Structure of TSG sessions
Ten TSG sessions take place, twice a month for five months. The sessions address:

- Selecting words to teach;
- Developing student-friendly definitions, examples, contrasting examples, and concrete representations;
- Activities to ensure multiple meaningful exposures to new words; and
- Using context to determine word meanings, to help build students’ awareness and curiosity about words in the environment and strategies to cumulatively review previously taught words.

A five-phase process is repeated during each session. This is: (1) debrief of classroom application of the research, (2) discussion of the focus research concept, (3) compare research with practice, (4) plan collaboratively, and (5) assignment.

1. Debrief
Participants begin by debriefing the lesson they collaboratively planned in the previous session. During these debriefs, the facilitator asks questions to prompt participants to describe the lesson they taught, discuss how students responded, and explain any changes or adjustments they made while teaching the lesson.

2. Discuss the focus research concept
A new research concept is presented during this portion of the session. Participants review, reflect on, and discuss the research concept before proceeding to the next portion of the session.

3. Compare research with practice
During this segment, the participants choose a selection in the core reading program that they will be teaching before the next TSG meeting. Their task is to determine how the lesson did or did not align with the research they discussed in the previous segment of the session. As a group they discuss the strengths and weaknesses of the lesson and how it could be modified to reflect the research.

4. Plan collaboratively
Next, the participants work collaboratively to plan a lesson that incorporates the facets of the research that they determined were missing as they compared research with practice.

5. Assignment
Group members are asked to teach the lesson they developed during the session.

Unique features of the TSG
- Promoting procedural and conceptual knowledge through modeling and discussion. Integrating conceptual and procedural components in professional development is critical to help teachers develop a solid working knowledge of research-based practices. Teachers must not only understand the central concepts covered in the professional development, but also see how the concepts can be applied to classroom practice. Modeling and discussing the key focus research concepts that are used to guide teachers’ thinking about effective vocabulary instruction remain at the forefront in each of the TSG sessions. Participants are intellectually engaged as this foundational knowledge about the research grounds their conceptions regarding the effectiveness of their lessons.

- Regularly scheduled TSG sessions.
Research has shown that professional development programs that last at least four months, and include at least 14 hours of collaborative activities, have the potential to bring about positive changes in student outcomes. Over the course of a school year and in a community of learners, teachers in our professional development study have the opportunity to read and discuss current research in effective vocabulary instruction. They
Making professional development effective

STRUGGLING READERS

What we know

- PD programs that last at least four months have the potential to change student outcomes.
- PD content must be linked to the curriculum, and practical within day-to-day teaching.
- To help teachers develop a solid working knowledge of research-based practices, PD must feature conceptual and procedural components.
- There must be a focus on student learning, for example, how many words the teacher wants students to learn.

Focus on student learning. It is important for professional development to focus on improving student learning. In TSGs, teachers determine the number of words they want their students to learn. They keep this goal in mind as they monitor students’ progress and change their instruction accordingly. The ultimate reward occurs when they notice that the words they taught are becoming part of their students’ listening, speaking, reading, and writing vocabulary. This motivates teachers to continue learning and applying research-based strategies regularly and skillfully.

Conclusion

When teachers engage in TSGs with others including peers, coaches, facilitators, or administrators, they tend to change their vocabulary teaching practices and succeed in increasing their students’ vocabulary knowledge. Results of a rigorous randomized field trial found significant improvements in observed teaching practice and moderate effect sizes in measures of vocabulary. Our TSG model includes many of the tenets of high-quality professional development and addresses many of the shortcomings of most popular and widely used professional development formats.

Further reading


About the authors

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Russell Gersten is Executive Director of the Instructional Research Group and a Professor Emeritus in the College of Education at the University of Oregon. He has conducted dozens of research studies on reading and mathematics instruction and PD, and has published more than 150 articles in major journals.
Scaling up in education: Balancing fidelity and innovation

Jerome D’Agostino and Emily Rodgers explain why delivering reading interventions with fidelity and infusing change are important complementary processes.

Unlike many literacy interventions that come and go, Reading Recovery has been implemented successfully in the United States for more than 20 years. Presently it is experiencing a renaissance, marked by innovation and scale up to new schools, many of which are in deprived areas. Reading Recovery has maintained high levels of success over time and across diverse school contexts because of its research-based design. This design not only requires replication with fidelity to instruction and teacher training, but it also encourages innovation to the same. In this article we will discuss how these seemingly contradictory processes of fidelity and innovation are necessary ingredients to advance evidence-based change in educational practices.

Fidelity to instruction and teacher training

The overarching goal of Reading Recovery is to provide intensive, long-term professional development for teachers so they can design and deliver one-to-one, short-term, 30-minute lessons each day to first graders having the greatest difficulty learning to read and write.

Reading Recovery was founded in New Zealand and has gone through a 25-year period of development and validation, producing the largest impacts on student reading skills of any intervention reviewed by the What Works Clearinghouse, the U.S. Department of Education’s online library of research. This makes it one of the most promising reading interventions available for children. Since 1984 every aspect of its design has been subjected to scrutiny including: student outcomes and subsequent performance, impact on retention and referral to special education rates, effect on home literacy activities, outcomes for English learners, impact on phonemic awareness, impact on the achievement gap, teacher learning, and scaffolding within teacher–student interactions. Its design has been tested and retested by various researchers, and evidence for its effectiveness established.

In addition to ongoing development and validation research, a national evaluation of student outcomes is conducted and reported annually. The annual national evaluation has attempted to address critical questions regarding the impact of the intervention, including the degree to which treatment students reach average levels of literacy achievement.

Maintaining fidelity to instruction and teacher training means that no matter where around the world Reading Recovery is implemented, core experiences for teacher training and student instruction will be maintained. These are the features that we know from research are linked to student outcomes. We know, for example, based on quasi-experimental research, that at least three features produce greater effect sizes: one-to-one instruction over small groups; reading and writing connected text over skill and drill type activities; and ongoing professional development for teachers over short-term activities. We can also theorize based on evaluation data that the following features matter: daily instruction with few missed lessons; lessons that are designed by trained teachers for individuals rather than preplanned lessons; and ongoing formative assessment to monitor student progress.

Innovating instruction and teacher training

Maintaining fidelity to and being innovative with a design are not mutually exclusive activities — in fact they go together. While we expect a physician to prescribe a treatment that is informed by evidence, if the traditional course does not work, we also expect the physician to be innovative and try other approaches that are more specifically tailored to our unique body chemistries. And on a larger scale, we expect that as new treatments become available, their effectiveness will be tested.

The same practices are true in other fields. Engineers work on new designs for bridges, but at the same time, existing designs that are evidence-based are built according to standards. In fact, when standards are not followed, and inferior products are substituted for those that are known to work, the results are often catastrophic: bridges come down and supermarket roofs collapse.

This process is called research and development, R&D. The idea is that improvements can be made to a design when there is an ongoing feedback loop between research and development efforts. Research informs the design and redesign of a product.

Innovation and research

Reading Recovery’s design also provides for innovation through a research and development loop. For many years, the national evaluation has provided a great amount of feedback on the overall effectiveness and delivery of the intervention. Scaling up Reading Recovery.
STRUGGLING READERS
Staying effective and innovative

What we know
- Education programs should be tested and retested.
- Improvements can be made when there is an ongoing feedback loop between research and development.
- Maintaining fidelity to and being innovative with a design are not mutually exclusive.

will pose new challenges and demands for richer information. Up to this point, data collection has entailed collecting achievement scores from two randomly selected non-participants at each school, who serve as a comparison group. Recently, the evaluation design has changed to collect achievement scores on a larger sample of similarly struggling students at each school. This new design will allow for the computation of effects at the school level, and the anticipated variation in effects across schools will be predicted with information on the particular elements of literacy that seem to be more and least sensitive to the intervention, and to better understand students’ learning processes over time. It also is important to understand the conditions that best foster scale up and sustained delivery. Reading Recovery research in the near future will focus on studying the conditions at schools, sites, and training centers that facilitate reaching more children in need. It will be important to focus not only on the conditions that help to reach more schools, but on those that sustain the intervention over multiple years. Understanding how schools innovate to keep the intervention vibrant will undoubtedly be a major part of this research.

The key to the sustainability of any intervention is to identify and maintain those components that are critical to its success, and to influence changes that improve the intervention and increase its staying power. Technology is one avenue that can be integrated into established interventions to make them more flexible and accessible, and enhance student experiences.

Ongoing research is critical to gauge the effectiveness of changes and to keep an eye on sustainability, but at some point what is learned from research must make its way into design changes. Reaching that goal begins with understanding what accounts for the natural variation across intervention sites, but taking the next step requires integrating research findings in innovative ways to reduce the variability across sites and increase all of their effectiveness levels.

About the authors
Jerome D’Agostino is Professor of Quantitative Methods in the Education and Human Ecology College at The Ohio State University. He specializes in measurement and evaluation. He is also the project director of the Reading Recovery: Scaling Up What Works i3 project funded by the United States Department of Education.
Emily Rodgers is an associate professor in the College of Education and Human Ecology at The Ohio State University. As co-director of The Reading Recovery University Training Center at OSU, Emily works closely with teachers, teacher leaders, and school administrators. Her research focuses on the professional development of teachers and scaffolding literacy learning, particularly for young children having great difficulty learning to read and write.

Further reading/resources
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Technology-supported three-tier reading instruction

Bette Chambers describes a three-tier ‘response to intervention’ program for struggling readers

THE READING ACHIEVEMENT of poor and minority children has changed little over the past decade. Several comprehensive school reform strategies have significantly improved reading performance at scale, but more effective models are necessary to offer educators tools capable of significantly reducing gaps in reading achievement. One important challenge for reform programs is to achieve greater consistency of effects across different school systems.

Over a number of years, I have been involved in developing a promising response to intervention (RTI) model. This has been a collaboration between:

● The Success for All Foundation;
● The Center for Research and Reform in Education at Johns Hopkins University;
● The Centre for the Study of Learning and Performance at Concordia University in Montreal; and
● The Institute for Effective Education at the University of York.

RTIs are early interventions for children who are having difficulty learning. This technology-based RTI approach has the potential to dramatically improve young children’s reading abilities. It is called Reading Roots Interactive (RRI), and it integrates core classroom instruction with follow-up small-group support and one-to-one tutoring for struggling readers. RRI is presented on interactive whiteboards, and supported by two computer-assisted tutoring programs, Team Alphie and Alphie’s Alley, for struggling readers.

Core instruction – Reading Roots Interactive (RRI)

RRI is based on the Success for All (SFA) comprehensive reform program. SFA has been researched in at least 50 experimental studies, and these have found statistically significant positive effects on reading achievement. Researchers have concluded that due to its extensive training, follow-up, and clear structure, SFA typically is able to obtain implementation fidelity. That is, schools deliver the program as it was designed to be delivered. Consequently, positive effects are seen even in the often difficult environments of disadvantaged schools.

To improve implementation, the underlying concept for RRI is to use technology to enhance and support the performance of teachers and tutors, not to replace them. Brief video vignettes integrated into teachers’ lessons provide students with clear images of the concepts they are supposed to be learning. For example, 30-second animations provide mnemonic cues for the children to remember the sounds that letters make. So when learning the /t/ sound, the children see a woodpecker tapping out the shape of a ‘t’ and hearing /t,t,t,t/. In lessons involving co-operative learning, the RRI videos show four
puppets working effectively, demonstrating for teachers, as well as students, exactly what teams of students are expected to be doing.

RRI is presented on an interactive whiteboard. All lesson elements are loaded into the computer and shown on the whiteboard. This provides compelling visual aids at exactly the right time to facilitate teaching of exciting, varied, and effective lessons. Teachers can also access video demonstrations of teachers modeling effective teaching of the skills.

**Small group tutoring – Team Alphie**

The next level of our RRI model addresses the needs of children who are not keeping up with the class in their reading. Our development team created a small-group supplementary reading intervention called Team Alphie, closely linked to RRI, the core reading program.

Team Alphie combines cooperative learning, computer-assisted instruction, embedded multimedia, and tutoring. Groups of four–six students work in similar-ability pairs – within groups of struggling readers, Team Alphie pairs students working at about the same level. Each pair works on a computer, taking turns as “reader” and “coach.” The computer presents questions, and after the “reader” has answered, the computer gives the correct answer and the “coach” indicates whether or not the “reader’s” response was correct.

Team Alphie provides daily 45-minute lessons in phonemic awareness, phonics, fluency, vocabulary, and comprehension. The program has three components: assessment, planning, and computer activities, all supported by embedded professional development.

Based on the pair’s assessment, Team Alphie presents targeted activities that are designed to reinforce skills taught to students during core reading. When students provide incorrect answers, the computer gives them progressive scaffolding until they can reach the right answer. Students engage in 12 games of type–like activities that focus on the following skills:

- Letter identification and writing;
- Auditory blending and segmenting;
- Word-level blending;
- Sight words;
- Spelling;
- Tracking;
- Fluency; and
- Comprehension.

Team Alphie also provides video performance support for tutors. For example, if a tutor determines that a child has a problem with auditory blending, then the tutor can watch video vignettes of other tutors modeling ways to help children improve that skill.

Team Alphie was compared to regular one-to-one non-technology tutoring in 33 disadvantaged SFA schools in the U.S. The first-grade Team Alphie group significantly outperformed the one-to-one tutoring group on a standardized reading measure. And of course, because students were tutored in groups, schools using Team Alphie were able to tutor many more struggling readers than comparison “control” schools.

However, in some classes there may be a small number of students with serious reading difficulties. These students still struggle with reading, despite well-designed core instruction and small-group tutoring, and will need individualized instruction to help them master those initial reading skills. For those students, there is Alphie’s Alley.

**One-to-one tutoring – Alphie’s Alley**

In a review of programs for struggling readers (see Robert Slavin’s article on page 4 for a summary), Slavin and his colleagues found phonetic one-to-one tutoring by qualified teachers to be the most effective method for supporting struggling readers. Yet tutoring by teachers is expensive, so if provided at all, it is often conducted by paraprofessionals. The effects of tutoring by paraprofessionals are much weaker than for qualified teachers, but the answer may be to support them with technology.

The solution our development team came up with was Alphie’s Alley, a software program to help tutors make effective use of individual tutoring sessions and help at-risk children catch up in reading. Alphie’s Alley is aligned with RRI and Team Alphie to provide a comprehensive three-tier model for teaching reading. Alphie’s Alley assesses children, and suggests individually tailored plans based on the assessments. It provides students with 12 types of activities similar to Team Alphie, except that they receive one-to-one support from a tutor. The tutor guides and encourages the child, assesses ongoing progress, and modifies plans in light of the child’s needs. Like Team Alphie, Alphie’s Alley also has a performance support system for tutors, including video clips showing expert tutors implementing the activities with children with different learning challenges. Alphie’s Alley contains a complex database that suggests interventions to teachers based on the individual performance of each student. The computerized diagnostic and assessment activities make record-keeping simple and reduce paperwork, allowing the tutor to focus on working with the student.

Two year-long randomized controlled trials found that when well implemented, Alphie’s Alley was more effective than the regular SFA tutoring without technology.

**Conclusion**

This technology-assisted three-tier model of initial reading instruction includes a core reading program delivered on the interactive whiteboard; a small-group computer-assisted tutoring intervention; and an individualized computer-assisted tutoring program. All three components have evidence of effectiveness shown by randomized experiments. Putting them together provides the kind of integrated instruction necessary for ensuring the reading achievement of all children.

**About the author**

Professor Bette Chambers is Director of the Institute for Effective Education at the University of York, a professor in the Center for Research and Reform in Education at Johns Hopkins University, and also directs the development and dissemination of the early childhood programs for the Success for All Foundation. Her current work focuses on developing and evaluating replicable programs that use cooperative learning and embedded technology, particularly in early childhood education and early literacy.

**Further reading**


Teaching struggling readers foundational reading skills

Struggling readers need support that combines the teaching of specific skills and strategies with building motivation for reading and learning, say Maureen Lovett, Karen Steinbach, Maria De Palma, and Meredith Temple

MOST CHILDREN WHO STRUGGLE to learn to read do not outgrow their reading difficulties. When not identified and tackled early, the gap widens with every year between those who can and cannot read well. In the past two decades, more and more good quality research has been published, examining what works for children and adolescents with reading difficulties. General principles of effective remediation for struggling readers can now be identified. Our own research group has contributed to this progress.

For three decades, as a team of psychologists and special education teachers at The Hospital for Sick Children in Toronto, we have worked to better understand the basic learning problems of children and adolescents with severe reading disabilities. We have evaluated the progress of almost 6,000 struggling readers, aged 6–16, who, in small groups, have received focused reading remediation programs developed by our team and offered in elementary and secondary schools. Because we wanted to contribute to knowledge about what works for children and young people with reading disabilities, it has been important to evaluate our approaches using well-controlled research designs. Here we describe what we and other research teams have found about how to help struggling readers acquire basic reading skills and motivate them to become competent independent readers.

What makes learning to read so difficult for some children?
Struggling readers have different profiles and backgrounds, but there are a small set of underlying problems in speech and language development and related abilities that characterize most children, adolescents, and adults who struggle to learn to read — particularly those more severely affected. The first involves difficulty working with the individual sounds (phonemes) that make up spoken words. Most have difficulties segmenting, blending, and manipulating the sounds of spoken words. For example, they find it difficult to identify how many sounds there are in soft (four) or to say flap without the first sound (/f/). This makes it difficult to learn to associate letters and sounds and develop basic decoding skills. Effective remediation targets these difficulties and increases awareness of, and ability to work with, individual sounds both orally and in print.

There are a small set of underlying problems in speech and language development and related abilities that characterize most children, adolescents, and adults who struggle to learn to read.

Struggling readers find it difficult to develop accurate word identification skills and to apply these skills to fluent reading. Because they cannot easily segment spoken syllables and words into smaller units, it is hard to learn and remember letter- and letter-cluster-sounds and to decode new words phonologically, or through analogy, to a word they already know. This bottleneck in learning to read words accurately and efficiently contributes to poor reading comprehension.

Setting the bar high: Generalization of remedial gains required
With focused and systematic small-group intervention, we found that struggling readers can make meaningful progress in decoding skills throughout elementary school and into secondary school. Improving word attack and decoding skills does not, however, always result in improved text reading, fluency, and comprehension skills. In fact, helping struggling readers apply or generalize their new skills to a variety of reading tasks can be a challenge. Many special education teachers express frustration that the gains they see in a remedial setting are often not observed back in the regular classroom. An effective program explicitly teaches struggling readers how and when to apply and use newly acquired reading skills and practices application to unfamiliar materials.

Why multiple component programs are essential to remediate reading disabilities
Many struggling readers have other learning problems that are also obstacles to successful reading development. Many generalization failures may be due to a more general difficulty with learning effective strategies, being flexible in choosing and applying different strategies, and monitoring their effectiveness. Many struggling readers experience difficulties learning strategies and thinking about their use. Metacognitive strategies are important to decoding and to all aspects of reading development and reading comprehension. We found that when phonological reading instruction was combined with teaching effective word identification strategies, and these strategies were used, practiced, and evaluated using self-directing dialogue, struggling readers achieved superior reading skills and faster learning than when they received an equal amount of either approach separately. This combined programming was also associated with greater generalization of their instructional gains. These findings provide strong evidence of the importance of teaching strategies, and of teaching the pre-skills needed to use each strategy effectively.

Putting it together: Teaching foundational reading skills and building motivation for reading and learning
In our research, we have developed an effective multiple-component reading intervention that includes motivational retraining to counteract the negative emotional experiences of reading impairment. We have woven elements into each lesson to enhance self-esteem about reading and encourage participation in successful reading experiences. Known as
STRUGGLING READERS
Building good foundations

What we know

Effective remediation for struggling readers should:
- Target phonological difficulties and increase children's awareness of, and ability to work with, individual sounds both orally and in print.
- Combine strategy instruction and teaching of the pre-skills needed to use each strategy effectively.
- Explicitly teach struggling readers how and when to apply and use newly acquired reading skills, and practice application to unfamiliar materials.
- Retrain misguided beliefs and attitudes about effort and achievement, and build perceptions of self-efficacy around reading and learning.

Empower™ Reading, the program retrained unproductive attitudes and misguided beliefs about effort and achievement, and builds perceptions of self-efficacy around reading and learning. Children learn that success, or lack thereof, when reading words is a matter of whether the appropriate reading strategy was selected and applied, and whether they were flexible and persisted when first attempts proved unsuccessful. Struggling readers learn a dialogue structure that guides them through decoding unfamiliar words and acknowledges that their success is because they were flexible, tried different strategies, evaluated their results, and persisted. Below a child encounters the unknown word unplowed:

“I'm going to use my Game Plan to read this word. I see beginnings and endings and a double trouble twin, so I'll use Peeling Off and Vowel Alert to figure out this word. First I'll use Peeling Off. I Peel Off un from the beginning and ed from the end. Now I'll use Vowel Alert on the double trouble twin ow. First, I'll try ow as in glow and then, I'll try ow as in cow, and see what gives me a real word. First, I'll try ow as in glow. I sound out the word and see if it makes a word I know: pIllIoOo. Now, I'll put the word together: unplowed. It doesn't make a real word, but I don't give up. Now, I'll try ow as in cow: pIllowowow... Now I'll put the word together again: unplowed. Yes, that's a real word! I used Peeling Off and Vowel Alert and I got the word! I was flexible, I stuck at it, and my strategies worked!”

The child used the Peeling Off and Vowel Alert strategies. First, children learn to reliably identify prefixes and suffixes, learning them in order of their frequency in English (required to use the Peeling Off strategy correctly). Similarly, to use the Vowel Alert strategy, readers first learn that vowels and vowel pairs have more than one pronunciation, and these are learned in order of their frequency in written English (ow in glow and in cow).

It is motivating to use complex multisyllabic words for strategy practice. Readers who previously struggled to read one-syllable words can work through decoding “challenge words” like unintelligible, comprehensive, and unrelentingly if they learn effective strategies and the necessary pre-skills to use the strategies correctly.

Effective remediation for struggling readers attends to many motivational factors that affect children's engagement in, motivation for, and attributions about the remediation and their own progress. The integrated skill-building and strategy teaching we have used in our research and in Empower™ Reading appear powerful in their ability to address maladaptive beliefs and attitudes about reading and one's ability to succeed as a reader. Our common goal is to empower the struggling learner to become an independent reader, capable of reading a variety of text materials fluently and with good comprehension.

About the authors
Dr. Maureen Lovett is a Senior Scientist in the Neurosciences and Mental Health Program at The Hospital for Sick Children, and a Professor of Pediatrics and Medical Sciences at the University of Toronto. Her team conducts research into creating and evaluating interventions for children and adolescents with reading disabilities. Dr. Lovett is recognized internationally for her contributions to reading disabilities research and practice, particularly regarding intervention.

Karen Steinbach and Maria De Palma are Program Coordinators with the Learning Disabilities Research Program (LDRP) and Meredith Temple is a senior Psychological Associate with the LDRP; all three are also Empower™ Teacher Trainers.

What we know

Effective remediation for struggling readers should:
- Target phonological difficulties and increase children’s awareness of, and ability to work with, individual sounds both orally and in print.
- Combine strategy instruction and teaching of the pre-skills needed to use each strategy effectively.
- Explicitly teach struggling readers how and when to apply and use newly acquired reading skills, and practice application to unfamiliar materials.
- Retrain misguided beliefs and attitudes about effort and achievement, and build perceptions of self-efficacy around reading and learning.
A comprehensive approach to adolescent literacy intervention

Teaching adolescent struggling readers presents a variety of challenges. Kristin De Vivo describes a tiered approach to address them.

RECENT RESEARCH REVEALS that, in addition to comprehension challenges, a large number of adolescent struggling readers also struggle with word-level reading skills. Scholastic Inc. has developed two tiers of reading interventions to support students across this spectrum.

READ 180 is a blended-model adolescent literacy intervention that combines cognitive science and research-based teaching practices with innovative technology to serve the needs of struggling readers in grades 4–12. The program was informed by the work of Dr. Ted Hasselbring’s Cognition and Technology Group at Vanderbilt University and the Orange County Literacy Project in Florida. An additional intervention, System 44, has also been developed for students who need more intensive support.

The READ 180 model

READ 180 was launched in 1999, and has been tested by teachers in the classroom for more than ten years. It combines teacher-directed learning based on best practices; materials that maximize engagement and learning; and personalized, adaptive technology. The program is delivered through 90-minute lessons, which should ideally have 15 students, and no more than 21. The lessons consist of 20 minutes of whole-class teaching followed by three 20-minute rotations where students rotate between small-group instruction, individual work on adaptive software, and modeled and independent reading. The class ends with a whole-group wrap-up for 10 minutes.

Feedback is matter-of-fact, personal, and encouraging, allowing students to practice at their level without embarrassment. In addition, the data management system makes all student results available to teachers and administrators through individual and group reports, and suggests resources for further support.

● Modeled and independent reading The modeled and independent reading rotation provides time to practice fluency and reading comprehension. Students use grade-level audiobooks, with a virtual reading coach modeling comprehension, vocabulary, and self-monitoring strategies. Students use their performance on the formative assessment, as well as their areas of interest, to identify titles from a library that they can read independently.

The effectiveness of READ 180

Over the last decade, there have been numerous studies of READ 180 that have resulted in enhancements of the program. One of the earliest studies, a 1998–99 collaboration between Scholastic and the Council of the Great City Schools, showed that READ 180 is effective in raising the achievement of struggling adolescent readers when implemented with fidelity. Since then, a growing body of research has attested to the program’s effectiveness in districts across the country, in a variety of educational contexts. This includes meta-analyses conducted by third parties such as Johns Hopkins University’s Center for Data-Driven Reform in Education and the federal What Works Clearinghouse.

More recently, a randomized controlled trial of READ 180 in an after-school program found that low-performing readers in grades...
STRUGGLING READERS
Helping poorly performing adolescents

4–6 showed significant improvements in vocabulary and reading comprehension scores. The authors reported that the results are robust and consistent with other findings. The students in the evaluation were designated “moderate risk” (reading approximately two years below level), which led the authors to propose that READ 180 may be most effective with these students. This reflects our own recommendations, although specific placement recommendations are always moving targets, given the variation in state reading assessments.

More intensive support
Response to Intervention (RTI) frameworks have three tiers of support for students. Tier I is core class teaching. Tier II support, such as READ 180, is aimed at children who are not keeping up in their lessons. READ 180 educators have reported that there are severely struggling students who need a deeper Tier III intervention that focuses on basic decoding strategies. This should take place before, or in addition to, placement into a Tier II program such as READ 180. Although estimates vary, approximately 5–10% of the student population have deficiencies in foundational reading skills.

The Scholastic Phonics Inventory (SPI) was developed to identify the students who need support beyond Tier II. SPI distinguishes between adolescent struggling readers who are poor decoders and/or unable to recognize sight words with fluency, and those who have adequate skills in this area. It is based on research into how word-level reading fluency skills vary between poor and adequate decoders, and uses computer-based assessment to gather precise reaction-time information.

The SPI cutoff scores that delineate poor performance (high-risk readers) from adequate performance (moderate-risk readers) take into account the expectation that many Tier II programs, such as READ 180, provide enough exposure to phonics and word strategy for the moderate-risk students to catch up to their on-grade-level peers. A Tier III reading intervention is more appropriate for high-risk readers who need intensive focus on foundational reading skills either before, or in addition to, READ 180.

System 44
Intentionally metacognitive, System 44 helps students understand that the English language is a finite system of 44 sounds and 26 letters that they can master. System 44 combines research-based phonics instruction for older students with adaptive technology and age-appropriate, supportive, fiction and non-fiction text. Recognizing the importance of student engagement, System 44 provides older, disenfranchised students with opportunities to be successful quickly, along with built-in motivation systems.

The main objective of this tiered approach is to place students quickly and reliably into the appropriate level of reading intervention. The program is designed to be flexible enough that, once placed into a Tier III intervention, a student can move at his or her own pace. Because of the great variability of reading skills within this age group, school systems should try to build flexibility into scheduling to support mid-course corrections.

The future of READ 180 and System 44
Over the past decade, educators from across the U.S. have reported instances of READ 180 turning students’ lives around, overcoming reading challenges to succeed in school. More recently, System 44 fills a gap for the most struggling adolescent readers. Reports from the field have revealed similar stories of success for various types of learners. Rigorous research is currently under way with System 44; however, the preliminary findings are extremely positive and cause for an optimistic view of the possibilities for the most struggling adolescent readers.

About the author
Kristin De Vivo is the Vice President of Research and Validation for Scholastic Education Group. She completed her undergraduate studies in psychology and early graduate work in neuropsychology. She has conducted evaluations of various educational programs over the last 14 years.

Further reading
Early identification and prevention of reading problems

What elements maximize the success of classroom instruction and supplemental early interventions for struggling readers? Stephanie Al Otaiba explains

SCHOOLS IN THE U.S. AND THROUGHOUT THE WORLD are engaging in education reform that involves increasing accountability to show that children in the early years learn to read. An important premise spearheading this reform is that effective early literacy instruction is the first line of defense in preventing reading problems. Teachers monitor students’ response to instruction, and if data suggests growth is not adequate, they provide supplemental “tiers” of increasingly intensive early intervention. This preventative approach is known as Response to Intervention (RTI).

Maximizing the success of Tier 1, or classroom instruction
Elements that maximize the success of Tier 1 in preventing early reading problems include:
- Providing teachers with ongoing professional development to implement an evidence-based core literacy curriculum;
- Informing teachers by a data system that involves universal screening and ongoing monitoring of student progress to their goal; and
- Teachers delivering a dynamic mix of whole-class and differentiated small-group support, ensuring students have time to practice reading skills at their own independent levels.

Core literacy program
The first element of instructional support for teachers is an effective core literacy program. Because struggling readers have weak language and literacy skills, it is important that this includes not only explicit code-focused instruction (e.g., phonological awareness, phonics, and decoding), but also meaning-focused instruction (e.g., vocabulary and reading comprehension skills) so that children learn to read fluently with understanding. The core program supports teachers in organizing lessons systematically, when tasks are presented in a thoughtful sequence in order of least to most difficult, and when adequate review and practice opportunities are provided. Mindful of the adage “curricula don’t teach, teachers do,” over the past decade, our research team has worked with hundreds of kindergarten and first-grade teachers. In observational studies, we found that the most effective teachers (in terms of strongest students’ reading growth) used small-group instruction, personalized the materials and teaching strategies used for these groups, and helped children think aloud about their texts. By contrast, the least effective teachers mostly delivered whole-group instruction and some individual tasks (mainly worksheets). When they did provide small-group instruction, all students were using the same materials, regardless of whether these materials were too easy or too difficult for some. As a result, students were not on task or engaged in reading activities.

Monitoring progress
The second element of teaching support is that schools and teachers use data to monitor progress on important curricular skills (for example, the number of letter sounds or sight words a student can correctly identify or the number of words a student can read aloud correctly in grade-level texts). This data will help teachers reliably identify children not demonstrating adequate gains in these crucial skills. Teachers can then determine who needs additional support and plan intensive small-group intervention targeting the specific weak skills.

Using data to group students
The third element is for teachers to be more effective at using data to group students flexibly for reading instruction. Our research team recently conducted a large experiment involving 14 schools and 556 students. We found that when we trained kindergarten teachers to follow data from assessments to personalize their small-group reading instruction, their students outperformed students of teachers in the contrast group. The difference in performance was significant and practically important.

Our teachers learned that a student who enters kindergarten lacking any letter sound correspondence, and with no ability to blend or segment sounds in words, may require twice as much teacher-led small-group instruction as some of their peers with stronger phonetic skills. Our teachers learned to organize and manage their classrooms in order to provide small-group instruction, while other classmates rotated

Teachers monitor students’ response to teaching, and if data suggests growth is not adequate, they provide supplemental “tiers” of increasingly intensive early intervention

Maximizing the success of supplemental early interventions
There are many evidence-based programs that teachers can use to supplement a strong core reading program (e.g., see reviews of programs by visiting the Best Evidence Encyclopedia at www.bestevidence.org). Fortunately, there is convincing and converging evidence that scripted interventions can be delivered effectively, not only by teachers, but also by teaching assistants and other adult tutors (e.g., community members, college students). The elements that research has determined can maximize outcomes of interventions delivered by non-certified teachers are rather specific. They include:
- A reading specialist or expert providing tutor training and supervision;
- The tutoring intervention being consistent with the classroom instruction;
STRUGGLING READERS
Catching problems in the early years

What we know
- Effective early literacy instruction is the first line of defense in preventing reading problems.
- The success of classroom instruction can be maximized by an effective core literacy program, and using data to monitor progress and group students.
- Teaching assistants can effectively deliver evidence-based supplemental interventions.

(i.e., 15 minutes of dialogic book reading strategies to build language and listening comprehension). Tutors were well trained and supervised and conducted the intervention with a high degree of fidelity, meaning that they were effective in their modeling, feedback, and that they followed program procedures. Our program was highly scripted to ensure tutors modeled skills (“My turn first to read the word”), provided guided practice (“Let’s try it together”), and independent practice (“Your turn”).

We monitored reading progress weekly. We found that students in the four-day condition showed greater growth on word reading, word attack, and passage comprehension than students in either the two-day or control condition on three reading measures.

Conclusions
There are several common elements across instruction and intervention that teachers can use to prevent reading difficulties, including:
- Choosing programs with multiple components, but focusing on explicit and systematic instruction in phonology and the alphabetic code;
- Using teaching strategies that are engaging, supportive, and interactive;
- Allowing students many guided and independent opportunities to respond;
- Providing ample opportunities to practice through cumulative reviews of reading skills designed to support mastery learning; and
- Collecting data to monitor progress and ensure interventions are conducted as intended.

About the author
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Summer learning programs linked to increased student achievement

SUMMER VACATION IS A TIME EAGERLY AWAITED by many school children. While they’re on break from the classroom though, a RAND Corporation study finds that children lose knowledge and skills, particularly in math, and that the learning loss disproportionately affects low-income children.

RAND completed this study in an effort to assess both the need for summer learning programs and the existing evidence on effective, viable, and sustainable summer learning programs in urban districts. To collect data on the topic, researchers conducted literature reviews on summer learning loss and the effectiveness of various types of summer learning programs. They also collected and reviewed data on summer learning program costs and facilitators and challenges to implementing these programs.

According to the review of existing research, by the end of summer students perform, on average, one month behind where they left off in the spring. This finding may be expected given the amount of time students are away from the classroom during summer break, but the learning loss was found to disproportionately impact low-income children. In particular, while math skills loss over the summer was found to be typical among most students, the research showed that low-income students also lost substantial ground in reading, further contributing to the achievement gap.

Summer learning programs not only reduce learning loss, but can also lead to achievement gains.

To combat these losses, summer learning programs may be key. Researchers reviewed rigorous studies of voluntary summer programs, mandatory summer programs, and programs that encourage students to read at home in the summer, and found that all showed positive effects on student achievement. Specifically, the combined evidence suggested that summer learning programs not only reduce learning loss, but can also lead to achievement gains. What’s more, longitudinal studies showed that the effects may be lasting, at least for two years after participation in the summer program (the researchers did not find studies that have examined whether effects last beyond two years).

While these findings suggest the importance of summer learning programs, especially for low-income students, the researchers found that cost is a major barrier to implementing the programs and that districts question their cost-effectiveness. In RAND’s final report on the study, the researchers offer a set of recommendations for districts and other providers that want to invest in summer learning programs, and they also offer recommendations for policymakers and funders who are interested in supporting summer learning programs.

RAND Corporation
June 2011
www.rand.org/pubs/monographs/ MG1120.html

National Guard Youth ChalleNGe Program found to positively impact at-risk youth

The National Guard Youth ChalleNGe Program (ChalleNGe) is to reengage high school dropouts and provide them with the education, opportunity, and structured training and mentoring they need to succeed. It includes a 22-week residential phase (completed in a residential facility located on an active or closed National Guard base, a National Guard training center, or a school campus) followed by a year-long mentoring relationship with a specially trained member from each participant’s community. To evaluate the effectiveness of ChalleNGe, MDRC is conducting a study of the program using a random assignment design. Their most recent report, which presents three-year results from the study, suggests that the program is having a positive impact on participants’ education and entry into the workforce.

Approximately 3,000 youths entered the study in 2005 and 2006. These young adults all applied to the ChalleNGe program, but there were more qualified applicants than slots so a lottery-like process was used to determine which applicants were admitted. MDRC then followed the applicants and compared the youths that were admitted (the treatment group) to the youths that were not admitted (the control group). Surveys were used to collect data on the two groups and their progress over time. The most recent survey to be administered was completed by 1,200 youths in the treatment and control groups an average of three years after they entered the study.

Several promising findings have emerged from the study about the effects of the ChalleNGe program on its participants. For example, MDRC found that three years after beginning the study, youths in the treatment group were much more likely than youths in the control group to have obtained a General Educational Development (GED) certificate or a high school diploma and to have earned college credits. In addition, youths in the treatment group were more likely to be employed at the time of the three-year survey and they earned about 20% more than their control-group counterparts in the year before the survey.

On the other hand, few statistically significant differences were found between the treatment and control groups in regards to crime, delinquency, health, and other lifestyle outcomes, and in-depth interviews with a sample of program participants suggested that some of the ChalleNGe graduates were finding it difficult to sustain momentum. To address these shortfalls, the report’s authors suggest that the program experiment with ways to enhance the post-residential phase of the program.

MDRC
June 2011
www.mdrc.org/publications/599/ overview.html
Supporting parents to give children the best possible start

The Authors of a New Report out of the UK cite parental involvement in early learning as having a greater impact on children’s well-being and achievement than any other factor, such as family income, parental education, or school environment. They used quantitative and qualitative research to find out how much “home learning” parents engaged in before and after their children (aged two to four) started in funded childcare. Their aim was to identify what preschool and other early years programs can do to better support parents to develop their children’s learning at home.

The study, Provider Influence on the Early Home Learning Environment (EHLE), found that the parents who would most benefit from help were those who were not employed. Although the majority of parents in the sample maintained the same level of early home learning before and after their child started in a funded childcare center, parents in families where adults were not employed actually did less early home learning once the funded childcare began.

The report makes a number of suggestions for ways in which this could be improved. One of the simplest is to encourage childcare staff to talk to parents on a day-to-day basis, welcoming them into early care settings and explaining face-to-face what parents can do at home.

This research was commissioned by the former DCSF (the UK’s Department for Children, Schools and Families) and conducted by the UK’s Family and Parenting Institute in partnership with the Campaign for Learning.

UK Department for Education
June 2011

Report reviews new research on teacher performance pay

Do Teacher Performance Bonuses lead to increased student achievement? According to a report from the RAND Corporation, that doesn’t seem to be the case. A new study they completed found that a voluntary schoolwide bonus program that was implemented in New York City public schools did not improve student achievement at any grade level.

The three-year study tracked 427 high-needs schools that were randomly assigned to implement or not implement the bonus program in 2007-2008. To be included in the treatment group (schools that implemented the program), at least 55% of school staff had to agree to participate. These schools were then eligible to receive school-level bonus awards of up to $3,000 per teacher.

In order to receive the bonuses, treatment schools had to reach a performance target set by the New York City Department of Education based on the city’s “Progress Reports.” These Progress Reports measure students’ growth on standardized tests and performance relative to other schools with the most similar student population and to all schools citywide. If a school met its target, a four-person compensation committee, which each participating school had to establish, determined how to distribute the bonus among staff. More than $50 million in bonuses were distributed over the three-year duration of the study.

Using student achievement data from New York state accountability tests, researchers compared the performance of the treatment schools with the performance of the control schools (the schools that did not implement the program). Their findings showed that the average math and ELA tests scores of students from the elementary, middle, and K-8 treatment schools were no higher than those scores of students in the control schools. In addition, findings also showed that the program had no overall effects on state Regents Exam scores for high school students in year 1 or 2 of the study (year 3 data were not available for the evaluation).

In the study’s final report, the researchers explore several possible explanations for the lack of positive effects under the program, such as the newness of the program and that the conditions needed to motivate staff were not achieved, and discuss the implications of the findings for pay-for-performance policies.

RAND Corporation
July 2011
www.rand.org/pubs/monographs/MG1114.html
The Latest Research


What? With handheld electronic response devices, students can indicate answers to questions posed by a teacher, and then the teacher and students are provided with immediate feedback on the performance of individuals or classes. Typically, questions are displayed on an interactive whiteboard and the whole class has to respond to each question before the class can proceed to the next question. In this report, findings are presented from a small-scale randomized evaluation of a learning innovation that delivers questions to a screen on each student's handheld device, allowing students to answer questions at their own pace. This approach, in turn, enables children who know the material well to steam ahead, and puts less pressure on the students who need more time. In addition, it permits teachers to immediately see which children are struggling with the questions so they can intervene right away to correct a child's misunderstanding or provide additional support.

Seven schools in the UK participated in the study of this self-paced learning (SPL) innovation, four of which were randomly assigned to a treatment group and three of which were randomly assigned to a control group. In the treatment group, schools used SPL in their Year 5 classes (UK equivalent of fourth grade) alongside Learning Clip, a mathematics program delivered on the interactive whiteboard. In the control group, Learning Clip was used without the self-paced element.

In order to assess the performance of the treatment and control groups, researchers developed equivalent pre- and post-tests that were administered before the start of the study and after a 12-week implementation of SPL in the treatment schools. The tests were based on the math learning objectives for Year 5 students as identified in the UK's National Framework for Mathematics and the lesson content addressed by the Learning Clip units during the span of the study. The tests were not biased in favor of either group, as all of the classes were studying identical content.

In analyzing the achievement data, the researchers found no statistically significant difference between the students' pre-test scores, meaning the treatment group and control group were well matched. There was, however, a strong and statistically significant difference on post-test scores in favor of the treatment group. According to the researchers, this finding indicates significant potential for technology-supported self-paced learning in increasing children's mathematics achievement. They note that if the study's findings were to carry on over a year, it would be equivalent to children attending school for an additional 3 months.

Authors: Sheard M & Chambers B.

Where? The report can be found at www.york.ac.uk/iee/news/2011/self-paced-learning.htm


What? This report presents findings from a three-year study on the impact of a violence prevention intervention for middle schools. The intervention, which was implemented from 2006-07 to 2008-09, was comprised of a curriculum-based program, Responding in Peaceful and Positive Ways (RiPP), and a whole-school approach, Best Behavior. These programs are considered to be complimentary programs in that RiPP focuses on individual-level change while Best Behavior targets school-level change.

The research sample was 36 geographically dispersed middle schools serving grades 6 through 8. Of these 36 schools, half were randomly assigned to receive the RiPP/Best Behavior intervention (the treatment group) and half were randomly assigned to continue with any program they were currently using, but not implement the combined intervention (the control group). In addition to studying the general student population within the sample, researchers identified a subset of students to evaluate who were at high risk for violent and aggressive behaviors.

A student survey was administered in the spring of 2009 to estimate the impact of the intervention after three years. Several topic-related domains were covered including students' safety concerns, self-reported coping strategies, and attitudes toward violence. A teacher survey was also administered to collect data on program implementation and outcomes such as school climate.

After three years of implementation, results of the study showed that there were no statistically significant differences between the treatment and control schools on self-reported student violence or victimization measures. In addition, the intervention had no statistically significant impacts on the students who were identified as being high risk. While these findings suggest that the combined intervention was not effective, it is important to note that the implementation data showed that the intervention was not fully implemented with complete fidelity in all cases. As the final report states, this has the potential to limit the ability to find statistically significant differences between treatment and control schools.

Authors: Silvia et al.

Where? The report can be found at ies.ed.gov/ncee/pubs/20114017
The Latest Research


What? The U.S. Department of Education’s Pre-Elementary Education Longitudinal Study (PEELS) began in 2003-2004 and followed a nationally representative sample of over 3,000 children who received preschool special education services as they progressed through the elementary years. The purpose of the study was to examine the characteristics of the children, the services they received, their transition across education levels, and their performance on assessments of academic and adaptive skills. Using standardized assessments, such as Woodcock-Johnson tests, researchers collected data on the children’s achievement through 2008-2009.

For this report, researchers reviewed data from PEELS in an effort to answer two research questions:
1. How do children who receive preschool special education services perform over time on assessments of receptive vocabulary and math skills?
2. How does their receptive vocabulary and math performance vary over time by primary disability category?

Findings relating to question #1 revealed that the children did show growth each year on measures of receptive vocabulary and performance. However, this growth slowed on both measures as the children got older.

For question #2, the data showed that the children’s performance over time did vary by primary disability category. For example, at age 3, children with a speech or language impairment had a significantly higher mean score on the receptive vocabulary measure than children with a development delay, and this gap persisted at age 10. Also at age 3, children with a speech or language impairment had statistically higher mean scores on the math skills measure than children with autism or a development delay. However, while the gap between scores for children with a speech or language impairment and children with a development delay persisted at age 10, the gap did not persist for children with autism. By age 10, the data showed that children with autism had caught up to children with a speech or language impairment.

Authors: Carlson et al.

Where? ies.ed.gov/ncser/pubs/20113006

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What? This report reviews research from two federally-funded evaluations of professional development (PD) for teachers: The Impact of Two Professional Development Interventions on Early Reading Instruction and Achievement (Garet et al., 2008) and Middle School Mathematics Professional Development Impact Study (Garet et al., 2010 & 2011). It synthesizes findings from these studies, provides information on how the PD offered in the studies affected both instruction and student achievement, and explores possible explanations for the results.

According to the report, the two studies together included nearly 170 elementary and middle schools that were randomly assigned to either a treatment group or control group. In the treatment group, second-grade reading teachers and seventh-grade math teachers received intensive PD related to their respective subjects. In the control group, teachers received only the professional development that was typically offered by their districts. The report notes that the treatment group’s PD went beyond a “one-shot workshop approach,” and included intensive summer institutes, follow-up group sessions, and coaching of individual teachers.

Although the treatment group’s PD was more rigorous, mixed results emerged from the studies about its impact on instruction and student learning. For example, only in the reading study (not the math study) did teachers in the treatment group have a significantly higher overall score on a test of content knowledge than their control-group counterparts. Also, both studies showed that the PD had positive effects on some targeted instructional practices, but not on others. As for student learning, both studies found that students of teachers in the treatment group scored no higher on subject-matter achievement tests than students of teachers in the control group.

While the report does explore several factors that may have contributed to the lack of positive findings (e.g., teacher and student turnover and the content, quantity, and quality of the professional development that was delivered), it ultimately concludes that in-service training should not be the only vehicle for improving student achievement.

Author: Quint J.

Where? The report can be found at www.mdrc.org/publications/603/overview.html

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