

The Effects of a Comprehensive and Supplemental Middle School Reading Program

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Abstract

We present results of an evaluation of the first year of a multi-year comprehensive middle school reading program. Four public middle schools in rural Virginia with large populations of students with limited reading proficiency participated in a study to determine the reading program's impact. We evaluated 235 students with low reading achievement scores, including students with disabilities, to determine reading gains. The multi-year curriculum consisted of multiple components (word-level instruction, comprehension and vocabulary, motivation and engagement, and assessment) and seven related instructional units, each taught using explicit instruction. A quasi-experimental design was used to determine the intervention's effectiveness. Statistically significant differences were found between the experimental and comparison conditions on a standardized measure of reading achievement with some scores favoring the experimental condition. Results support, in part, the reading program's promise to improve middle school students' reading achievement scores at a level that may narrow the reading achievement gap.

Keywords: Adolescent reading, reading disabilities, reading interventions

In response to identified needs related to the limited reading proficiency (LRP) exhibited by many middle school students, a state agency and several district leaders from rural school districts in the southwestern region of the state of Virginia in the United States contacted the researchers for assistance in exploring possible solutions. Building on an existing partnership, the state and rural district leaders and the researchers decided to implement and evaluate the Fusion Reading (FR) program, a comprehensive intervention for struggling adolescent readers (Hock et al., 2012).

The state started by providing several schools with materials and professional development on FR for several reasons. First, they believed that the intervention could provide LRP students with improvements in the basic skills they need (e.g., decoding, fluency, vocabulary knowledge, comprehension). Second, previous reading interventions for these students had had little or small effects. And third, they believed that the intervention's use of literature that was engaging and relevant to the

lives of adolescents would increase student motivation and desire to engage in reading.

The overarching goal of the project was to conduct a rigorous evaluation of FR in rural schools and determine the level of impact on students with low scores on the state Standards of Learning (SOL) reading assessment (VDOE, 2017b). The primary research question was whether or not SOL scores and scores on a standardized reading measure would improve for the students with LRP who were taught FR.

The Challenge of Limited Reading Proficiency for Adolescents

A significant discrepancy exists between the reading abilities of adolescents with limited reading proficiency (LRP) and proficient readers, a discrepancy that has been growing. For example, in 2019, the average eighth-grade reading score on the National Assessment of Educational Progress (NAEP) was 263 points, a significant decline in scores from 2017. For

eighth-grade students living in poverty, the average score was 250 points; for students with disabilities, the average score was 229 points; and for English learners, the average score was 221 points (National Center for Education Statistics [NCES], 2019). More significant is how these point differentials translate into basic reading ability. For eighth-grade students living in poverty, 35% are reading below basic proficiency. For students with disabilities, 68% are reading below basic proficiency, and among English learners, 61% are reading below the basic level (NCES, 2019). Thus, a large number of students are not proficient in the reading skills needed for success in school.

For many students, limited reading proficiency can be a chronic condition. For example, by high school, students with limited reading proficiency are, on average, three years below grade level in reading (Cortiella & Horowitz, 2014). Students who score at below basic skill levels are unable to use prior knowledge to make a comparison, describe the central problem faced by a main character in a text, use context to identify meaning of vocabulary, provide text information to support a generalization, read across text to provide an explanation, or support an opinion with text information or related prior knowledge (NAEP, 2019). Consequently, students reading significantly below a basic level are unable to comprehend much of the written material they encounter in school.

The Magnitude of the Literacy Challenge

We previously conducted a descriptive study to bring clarity to the nature of the reading skills of adolescents, including students with disabilities (Hock et al., 2009). Entering ninth-grade students were administered 11 standardized reading tests across five reading domains: alphabets, word-level reading, fluency, vocabulary, and comprehension. The results of the study described the differences across reading domains between proficient readers and readers with limited reading proficiency. Students with limited reading proficiency scored statistically significantly lower than their proficient reader counterparts in each domain and 20 or more standard score points lower than the proficient reader group. Sixty-one percent of the limited reading proficiency group scored low in all five reading domains.

In a latent class analysis of the same data set, we found five statistically unique subgroups of adolescent readers with low reading achievement: (a) readers with severe global weaknesses, (b) readers with moderate global weaknesses, (c) dysfluent readers, (d) weak language comprehenders, and (e) weak reading comprehenders

(Brasseur-Hock et al., 2011). The profiles of these subgroups demonstrate considerable diversity and are distinguished by their specific strengths and weaknesses. For example, two of the subgroups scored from one to two standard deviations below the mean on almost all reading measures. Another subgroup demonstrated weaknesses only on the measure of fluency.

Other researchers have identified similar reading skill profiles and have extended the research to include related cognitive skill profiles. For example, examining the reading skills and cognitive attributes of middle school students, Miciak et al. (2014) found that measures of phonological awareness, listening comprehension, rapid naming, processing speed, verbal knowledge, and nonverbal reasoning identified three groups of inadequate responders to reading instruction. The three groups included students with (a) comprehension deficit; (b) decoding, fluency, and comprehension deficit; and (c) poor fluency skills. All groups had distinct score clusters for the six measures. Other researchers have found through multigroup confirmatory factor analyses that about 85% of the struggling readers had weaknesses in comprehension, decoding, and fluency (Cirino et al., 2013).

Given the significant and comprehensive needs of LRP students and the diversity of subgroups or clusters of poor comprehenders, increasing student literacy to the level required by more rigorous standards will be a significant challenge for teachers whose students lack basic reading skills.

The Evidence We Have

Literature reviews, meta-analyses, and recent studies of reading interventions, programs, as well as instructional methodology aimed at improving reading proficiency among adolescent struggling readers inform our understanding of what works with whom and under what conditions (e.g., Slavin et al., 2008; Torgesen et al., 2006; Vaughn & Wanzek, 2014). For example, the Center on Instruction's Practice Brief (Boardman et al., 2008) recommends that interventions designed for adolescents include instruction in the following components: word study, fluency, vocabulary, comprehension, and motivation. In addition, based on our studies, we suggest that secondary curricular demands and learner profiles of adolescent struggling readers be taken into consideration when designing and delivering reading interventions (e.g., Brasseur-Hock et al., 2011; Hock et al., 2009).

In the following, we have organized our review of the literature moving from broader instructional approaches to instruction with specific interventions and groups.

Instructional Approaches

In a comparison of four approaches to reading programs for adolescent struggling readers, Slavin and colleagues (2008) found that instructional-process programs, which improve daily teaching practices and are accompanied by professional development, had greater research support than mixed approaches and programs that focus on technology alone. The Slavin review included 33 separate studies, all using randomized or matched control groups.

In a synthesis of 69 experimental research studies across 51 reading programs for secondary students, Baye et al. (2018) found that instructional approaches that used one-to-one and small-group tutoring, cooperative learning, whole-school and writing-focused approaches showed positive outcomes. The researchers also found that reading instruction in social studies/science classes, teaching structured reading strategies, and personalized rotation learning models were effective. However, programs providing an extra hour of reading time and those utilizing technology were no more effective than programs without those features. Thus, across the 69 programs reviewed, the effects were relatively small (i.e., $ES = +0.09$ to $+0.13$).

Components of Reading Interventions

In a review of 22 randomized controlled trials (RCTs) on reading interventions for children and adolescents with reading disabilities, Galuschka et al. (2014) evaluated 49 comparisons of experimental and control groups that included reading fluency, phonemic awareness, reading comprehension, phonics instruction, auditory training, medical treatments, and interventions with colored overlays or lenses. A key finding showed that phonics instruction was statistically confirmed as the only approach to affect the reading and spelling performance of children and adolescents with reading disabilities. Specifically, this meta-analysis demonstrated that severe reading and spelling difficulties could be treated with appropriate instructional methods. The authors concluded that systematic instruction of letter-sound correspondences and decoding strategies was the most effective method for improving the literacy skills of children and adolescents with severe reading disabilities. Corroborating these conclusions, the Center on Instruction recommends phonics instruction for older readers to focus on advanced word study and decoding multisyllabic words (Boardman et al., 2008; Torgesen et al., 2007).

Scammacca et al. (2015) examined the findings from 82 studies of interventions for adolescent struggling readers in Grades 4-12. This meta-analysis was conducted as an extension of an earlier meta-analysis

(Scammacca et al., 2007) with similar research questions on the level of intervention effectiveness and use of reading comprehension measures. In both literature reviews, the researchers included interventions designed to impact reading fluency, vocabulary, and reading comprehension. Results showed that teachers could influence reading outcomes for older students with reading difficulties and that adolescents, including those with learning disabilities, could benefit from interventions that target both word-level and reading comprehension strategies (Scammacca et al., 2007, 2015). In the latter review, the researchers found that effect sizes in studies of more recent years (1980-2011) showed lower effect sizes, likely due to increased use of standardized measures as the outcome variable for reading comprehension (Scammacca et al., 2015). Additionally, the authors identified three other causes of lower effect sizes: (a) improved "business-as-usual" (BAU) instruction typically serving as the comparison in intervention studies, (b) use of more rigorous research designs, and (c) changes in participant characteristics.

Another synthesis of 14 studies of reading comprehension interventions for middle school students with learning disabilities, conducted between 1979-2009, found large effect sizes for researcher-developed comprehension measures and medium effect sizes for standardized comprehension measures (Solis et al., 2012). All but one intervention in these studies related to strategy instruction on main idea or summarization. However, 12 of the 14 interventions were implemented by researchers, somewhat limiting the generalizability of the findings.

In an effort to determine which features of vocabulary instruction have an influence on adolescents' comprehension, Wright and Cervetti (2017) conducted a systematic review of 36 studies of vocabulary interventions with comprehension as their outcome measure. One key finding from their analysis was that instruction focusing on the strategies for learning new words had a larger impact than teaching definitions of new words. Another finding indicated that there was no evidence to support one particular strategy for solving word meanings, but that students who actively used a strategy showed increased understanding of text.

Severe Reading Disability

In a recent article describing the impact of a two-year randomized control trial study with 194 fourth-grade students with severe reading disabilities, researchers found no statistically significant differences between students in treatment and those in a BAU condition on measures of word identification, vocabulary, and comprehension (Al Otaiba et al., 2018).

However, while there were no significant statistical differences, there were promising effect size gains ($ES = 0.14$ to 0.19). Given these gains, the researchers suggest that even more intense intervention for students with chronic and severe reading disabilities may be required. For example, the intensive reading program implemented, called Passport to Literacy, was a multi-component year-long Tier 2 reading program that met four days a week for about 30 min a day. Program components included instruction in word reading skills, vocabulary, and comprehension. Thus, intensive, comprehensive, and multicomponent reading programs may be required for students with severe reading disability (Al Otaiba et al., 2018).

Examining the effects of a year-long, small-group, intensive intervention for 41 eighth graders who persistently had inadequate response to previous reading interventions, Vaughn and colleagues (2012) found that students showed growth but still lacked grade-level proficiency. Students receiving intensive intervention demonstrated significantly higher scores than comparison students on standardized measures of comprehension ($ES = 1.20$) and word identification ($ES = 0.49$). However, most students in the treatment condition continued to lack grade-level proficiency in reading despite three years of intervention.

Further, Vaughn et al. (2013) reported the results of a longitudinal study of reading comprehension interventions for adolescents with learning disabilities receiving support within a response-to-intervention framework. In this study, the researchers developed interventions across three tiers of instruction, with increasing levels of intensity for students who were non-responsive to less intense instruction. The influence of the interventions with added intensity (i.e., Tier 2 and Tier 3 interventions) on student reading achievement scores showed larger gains for the experimental groups than comparison students.

However, the magnitude was considered small ($d = 0.16$). The results of this study and the previous study by Vaughn and colleagues (2012) show that even with explicit and intensive reading instruction, students with severe reading disabilities demonstrated limited reading improvement and suggest the need for intensive instruction for middle school students with severe reading disabilities to close their reading proficiency gap.

Rural Contextual Factors

To fully examine what reading instruction works for students with LRP, context must also be explored (Eppley et al., 2018). Some unique contextual challenges to literacy improvement efforts in rural school districts include lack of resources, skepticism about exter-

nally led initiatives, and limited teacher-collaboration opportunities due to geographic isolation and small school size (Azano, 2015; Hamann & Meltzer, 2005). Additionally, rural schools often experience teacher shortages and high turnover rates (Azano & Stewart, 2016; Holloway, 2002).

In one study of the effectiveness of two commercially available explicit instruction approaches used to address the LRP needs of 49 sixth, seventh, and eighth graders living in rural areas, Shippen et al. (2014) found that students with more skills at pretest demonstrated more growth at posttest, underscoring the importance of paying attention to the initial capabilities of students when evaluating program effectiveness. Additionally, intervention placement procedures must be carefully implemented due to underlying factors that may not parallel placement practices in other places (Callahan et al., 2020). Lastly, in an effort to resist polarizing and rigid conceptions common to socially, culturally, and economically marginalized spaces (Peine et al., 2020), literacy improvement efforts must engage in a partnership and strengths-based approach (Knight et al., 2016).

Amalgamating these findings, we conclude that explicit, comprehensive reading strategy instruction is effective, to varying degrees, for students with LRP. Furthermore, the findings support the need to learn more about the instructional conditions that could close the reading gap for these readers in rural settings. Evidence showing that teachers are able to deliver interventions in real-world settings with as much efficacy as researchers is also needed. Finally, additional research is needed on the impact of multiyear, intensive, and comprehensive reading instruction designed to address all the critical reading component skills identified as essential to have high-impact on the reading achievement of LRP.

A Response to the Challenge: Fusion Reading

In an attempt to address this challenge, several rural Virginia schools adopted FR (Hock et al., 2008), a comprehensive intervention for struggling adolescent readers. Plans were developed for professional development, implementation, and rigorous evaluation that targeted student reading outcomes.

Briefly, FR is an intensive reading class designed to meet for 45-, 60-, or 90-min class periods daily or every other day. The course does not replace language arts or other core classes but is supplemental to core classes and is usually offered in special education classrooms or as an elective. Classes consist of 12-15 nonproficient readers in Grades 6-8 who typically score two or more grade levels below grade placement on a standard reading assess-

ment measure. A major goal of FR is to increase student motivation, engagement, and reading outcomes.

FR consists of seven instructional units. Both teacher and student materials (three workbooks) are provided in hard copy and electronic forms. FR units include (a) Classroom Structure – Establish the Course; (b) Thinking Reading Process; (c) Possible Selves for Readers; (d) Word-Level and Fluency Strategies; (e) Comprehension Strategies; (f) a Vocabulary Strategy; and (c) a Test-Taking Strategy. Throughout the program, daily and unit assessment is provided. Each unit is described in more detail in the Methods section.

Findings From Previous Studies of FR

Multiple studies have shown the impact of FR. For example, as part of an Institute of Education Sciences (2006) grant, an underpowered random assignment study of struggling 9th- and 10th-grade readers in urban high schools was conducted to bolster claims of promise for the intervention. Comparison condition students received Second Chance Reading (Showers et al., 1998). All students were administered the Group Reading and Diagnostic Evaluation (GRADE; Williams, 2001). An independent analysis of the data was conducted by the University of Houston's TIMES Center. Thirty-four students received FR and 35 students received Second Chance Reading.

The data were analyzed using a hierarchical linear modeling approach as implemented in SAS PROC MIXED. The dependent variables were the standard and raw scores on the GRADE comprehension composite test score. A significant interaction was found between treatment and measurement occasion for the standard score on the GRADE Comprehension Composite score, $F(2, 88) = 3.53, p = .03$. The pre- to posttest gain for the experimental group was statistically significant, $F(2, 88) = 4.59, p = .01$. The within-subjects effect size for this subtest score is Hedges's $g = .70$; $F(2, 93) = 3.06$; $p = .05$ raw score and Hedges's $g = .66$; $F(2, 93) = 3.73$; $p = .03$ for standard scores (Hock, Bulgren et al., 2017).

Another study, a quasi-experimental matched comparison group study, was conducted using FR and Corrective Reading (Hock, Brasseur-Hock et al., 2017). Forty middle school students with learning disabilities were included, 20 in each condition. Students attended a suburban school district. The GRADE (Williams, 2001) was administered pre- and posttest, and the Measure of Academic Progress (MAP) (Northwest Evaluation Association, 2011) was administered at multiple time points.

The difference in GRADE Total Test reading score was statistically significant. Given the nested nature of

the data, a repeated-measures analysis of covariance (ANCOVA) was conducted of the overall GRADE total scores. Significant differences were found between the intervention and comparison group over time; $F(1, 32) = 6.67, p = .015$, Hedges's $g = 1.66$. A second repeated-measures ANCOVA was conducted on MAP scores. Significant differences between the experimental and comparison groups were found over time; $F(1, 27) = 5.16, p = .031$, Hedges's $g = 1.04$.

In another analysis of the same data set, an independent-samples t test was conducted to compare the difference in Total Test scores of the GRADE. The mean score for the experimental group posttest ($M = 33.60, SD = 10.29$) was significantly greater than the mean score for the comparison group posttest ($M = 21.70, SD = 7.31$), $t(38) = 4.216, p < .001$. The standardized effect size index, Cohen's d , was 1.35 (Hock, Brasseur-Hock et al., 2017).

Expanding the Evidence

The evaluation reported in the current paper extends the research on the FR intervention to include students with limited reading proficiency from impoverished rural school districts and cultures. Specific research questions included:

1. What is the impact of FR on the reading achievement scores of middle school adolescents with limited reading proficiency in rural schools?
2. What is the magnitude of the gain score difference (effect size) for students in FR compared to students in a business-as-usual (BAU) reading comparison condition?
3. What is the level of fidelity of implementation for intervention dosage and curriculum implementation?

Methods

Setting

This study took place in two rural school divisions (districts) located in southwest Virginia. One division was a medium-size school division with a total student population of 9,182 across 10 elementary schools, 4 middle schools, and 4 high schools. The other division was a smaller school division with a total student population of 2,042 across two elementary schools, one middle school, and one high school (Virginia Department of Education [VDOE], 2017a).

A total of four schools participated in the study, with three schools from the larger division and one school from the smaller division. Students were from

sixth-, seventh-, or eighth-grade middle school classrooms (see Table 1 for specific student demographics). Three schools taught LRP students the intervention program, FR; the fourth school served as a BAU comparison condition.

In Virginia, where this study took place, a discrepancy similar to the national challenge exists. That is, on a statewide basis, 52% of all LRP students are reading below proficiency compared to 20% of their peers (VDOE, 2017a). The schools participating in this study reported that state Standards of Learning (SOL) scores were also low. For example, one middle school's SOL eighth-grade reading scores were lower than 90.7% of the middle schools in Virginia. Another middle school reported that only 60% of all students scored at the proficient level in reading (VDOE, 2017a).

Student Participants

A total of 235 students participated in the study; 153 students in the experimental condition and 82 in the comparison condition. All students in the study were considered to be LRP, defined as students with documented disabilities and reading goals, English language learners with low reading achievement scores, or students living in poverty. All students had low reading achievement scores. Students (a) were enrolled in Grades 6, 7, or 8; (b) scored between the 15th and 36th percentile on a standardized reading assessment; (c) scored below proficient on the division's reading screening test; and (d) scored below proficient on the Virginia reading Standards of Learning (SOL) test. See Table 1 for additional information on student participants.

Of the 153 students in the experimental group, 54 were in sixth grade, 54 were in seventh grade, and 45 were in eighth grade. A total of 82 students from these same grade levels were in the comparison condition.

All students were required to have parent or guardian consent to participate in the study, and students provided their assent to participate.

Teacher Participants

All teachers in both the experimental and comparison groups were VDOE-licensed. The experimental group was taught by three teachers who were new FR program implementers but were experienced teachers in the districts (see Table 2). None of the teachers, experimental or comparison, had prior FR teaching experience. The comparison group teacher was responsible for either directly teaching students in the BAU in enrichment/intervention classes or in enlisting the support of English or social studies teachers to support students as they worked on completing class assignments.

Experimental Condition

Students in the experimental condition received FR. The curriculum includes seven units, each taught using explicit instruction. Bundled into the program are four major components: (a) Engagement and Motivation, (b) Word-Level Instruction, (c) Comprehension, and (d) Ongoing Assessment (Hock et al., 2008).

Components of the Comprehensive Intervention

The Engagement and Motivation component includes the use of highly engaging teen literature, lessons designed for student success through explicit instruction, multilevel reading material, positive and corrective feedback, ongoing performance assessment, and Possible Selves for Readers (PSR) (Hock et al., 2012). PSR is used to focus students' attention on the importance of becoming expert readers and how being expert readers can help them reach their hopes and dreams as learners, individuals, and in career areas. For

Table 1
Student Demographics

School	Students Enrolled	Free/Reduced-Price Lunch	% IEPs ^a	% ELL	Black	Hispanic	White
Exp. 1	448	69.4%	15.6%	1.1%	29.7%	4%	66.3%
Exp. 2	648	53.3%	13.3%	1.2%	11.9%	9.3%	78.7%
Exp. 3	517	65.4%	17.2%	1.4%	29%	7.2%	63.8%
Comp.	576	57.5%	10.2%	9.4%	23.6%	18.4%	58%

Note. IEP= Individualized Education Program; ELL = English-language learner.

^aStudents with disabilities and IEP goals for reading made up 10.2% to 17.2% of the students in the study. Overall, about 35% of the students were classified as LD, 17% as speech-language hearing, 21% as other health impaired, and about 9% as autistic.

Table 2
FR Teacher Demographics

Teacher	Degree	Certifications	Number of Years Teaching	Gender	Race	Age
1	Bachelor's Degree	Early Education NK-4th Middle Education 4th-8th	26 years	Female	White	54
2	Master's in Education	Emotional Disabilities K-12th Specific Learning Disabilities K-12th Elementary 4th-7th Reading Specialist	27 years	Female	White	59
3	Bachelor's Degree	Elementary NK-8th	16 years	Female	White	38
4	Bachelor's Degree	Intellectual Disabilities K-12th Specific Learning Disabilities K-12th	25 years	Female	Black	57

example, students participate in structured interviews in which they describe themselves as an individual, as a learner, and as a worker. They also identify their hopes, expectations, and fears for the future in each of these areas. From this examination of what is possible for each student, an action plan is developed that clearly shows the linkage between reading and the attainment of the student-identified goals. PSR is an ongoing experience and reflects the dynamic nature of student goals.

Word-Level Instruction is taught through The Bridging Strategy (TBS) (Brasseur et al., 2012). TBS consists of four core units: phonics, decoding, word identification, and reading fluency. When students apply TBS, they use multiple skills and strategies to quickly and accurately recognize words in connected text. When they encounter an unfamiliar multisyllabic word, they learn to apply a four-step strategy in which they break unrecognized multiple syllabic words into pronounceable word parts. These word-level skills are explicitly taught to a level of automaticity and practiced with expository and narrative text using multilevel text. Teachers provide positive and corrective feedback to small cooperative groups and, as needed, to individual students.

The Comprehension component of FR consists of four key strategies: (a) Summarization, (b) Prediction, (c) Vocabulary, and (d) Strategy Integration (Brasseur et al., 2012; Hock et al., 2012). With the Summarization Strategy, students learn to identify important clues in the text, link the material to prior knowledge, read short chunks of information, find main ideas, and summarize major sections of text. In the Prediction Strategy, students learn

how to make predictions and draw inferences within their reading. With the Vocabulary Strategy, students learn a seven-step process that allows them to determine the meaning of unknown vocabulary through analysis of affixes and context clues and extensive classroom discussion of multiple word meanings, word usage in different contexts, and similarities of the target word to other words. Finally, and most important, through Strategy Integration, students learn how to apply and adapt all the reading strategies they have learned to reading materials in their math, science, language arts, and social studies core classes. They practice application of strategies in the FR class using the core class text materials and receive feedback from their teacher. Core class teachers and co-teachers then cue students to use the strategies during core class activities. About 60% of FR instruction focuses on core class reading material.

Two activities embedded in the Comprehension component, Thinking Reading and Book Study (Brasseur et al., 2012), are designed to increase the amount of time disengaged readers spend engaged in the reading process. Thinking Reading is an instructional process used to demonstrate expert reading behaviors, to forecast strategy application, and to provide opportunities to practice strategy application in the context of authentic reading material. Thinking Reading is similar to Reciprocal Teaching (Palincsar & Brown, 1984) in that the teacher eventually transfers the role of expert reader to students. In Thinking Reading, however, teachers use highly engaging reading materials in an effort to get disengaged readers reengaged with text.

Book Study is designed for extension and application of learned reading strategies outside the classroom. Students select books in their areas of interest and at their independent reading level. Then they complete assignments that are directly related to the strategies and vocabulary being taught. The goals of these activities are to get disengaged readers “eyes on print” (Chamberlain, 2006, p. 172), provide multiple exposures to expert reader models, offer readers opportunities to practice new reading strategies, and extend reading practice beyond the classroom.

Finally, the Assessment component provides individualized data that inform and personalize instruction. Individual student progress is carefully documented in each instructional unit. Formative assessment data are gathered daily for each strategy’s instructional lesson and during the various practice activities. Thus, regular measurement of motivation, engagement, word-level skills, and comprehension is embedded in the program and collected regularly by the teacher. This information helps assess individual student progress and provides immediate, individualized, positive, and corrective feedback to students.

Progress measures are embedded within each major unit of the curriculum. These measures inform the learner and teacher about the level of student mastery of a particular reading strategy, mastery of skills being taught, and comprehension of reading material. The measures are also used to make future program curriculum decisions for individuals or groups of students. Overall achievement gains are documented by division end-of-grade assessments and/or standardized reading measures.

The Instructional Process and Procedures

A key structure of FR is the Daily Lesson Format (DLF), which provides a structure for the class that ensures all critical instructional activities are included in each class session. For example, during a 60-min class, teachers and students rotate through five activities: Warm-Up (5 min), Thinking Reading (12 min), Explicit Instruction (20 min), Vocabulary (18 min), and Wrap-Up (5 min). The instructional activities are as follows:

1. Students do a Warm-Up activity as soon as they enter the classroom. The Warm-Up is usually a vocabulary question related to the novel the class is reading. Students earn points for completing the activity.
2. Students transition to Thinking Reading, where the teacher models metacognitive strategies and the thinking of an expert reader. Students read highly engaging novels and eventually demonstrate and practice the reading strategies they have been taught.

3. During Explicit Instruction teachers explain a strategy, model the strategy, guide student application of the strategy, have students practice the strategy, and then provide feedback to students. Students are taught the individual course reading strategies during this time.
4. Next, students study Vocabulary, and are guided through the seven-step strategy applying affix meanings and discussion to define the meaning of the word; opportunities are provided to locate other words that contain the same affixes.
5. Finally, during lesson Wrap-Up, students are given a quick assessment of the main skill taught. Usually, this involves having students complete an exit ticket assignment. Also, the upcoming lesson is previewed.

The DLF structure helps ensure that each class has instructional variety and that every minute possible is an opportunity for explicit instruction.

Explicit Instruction. Teachers follow explicit instruction practices for all reading and strategy instruction. In FR, the procedure includes the following steps: First, teachers clearly explain each skill or strategy that will be learned during each lesson. Then teachers provide an expert model of how the skill is applied or how the strategy works in the context of narrative or expository text. Once teachers have provided an expert model of the skill or strategy, they engage students in guided practice.

Guided practice scaffolds teachers’ support, with the students taking responsibility for application of the reading skill or strategy. Guided practice is a recursive process with the teacher providing additional modeling and supports as needed. Once students demonstrate some level of initial proficiency in guided practice, they work with a partner and continue to practice with reading material that moves from easy to more difficult levels. During partner practice, the teacher works with individual students to assess proficiency and provide support to students who require elaborated feedback. Finally, new skills and strategies are applied to actual core class materials. These processes and procedures are followed for each of the daily lessons in the program.

Professional Development

Each participating FR teacher received extensive blended PD from one of the program developers and two certified FR trainers. That is, face-to-face PD was provided in combination with online modules designed to provide personalized professional learning. Blended professional development for this study is defined as consisting of both online digital media and face-to-face PD and

coaching from FR coaches. In addition, building and district-level administrators responsible for curriculum and instruction also received PD. The importance of including building and district leaders in secondary school PD plans is well documented (e.g., Bredeson, 2000; McDonald et al., 2009). The model employed to provide all PD was based on validated practices for professional learning (e.g., Darling-Hammond et al., 2017; Fullan, 2005; Knight & van Nieuwerburgh, 2012; Kurz et al., 2017).

The specialized PD provided to FR teachers was scheduled based on the pace of their implementation. Summer PD for Year 1 was conducted over two consecutive days. Training included information on attributes of struggling readers, theoretical underpinnings of FR, classroom routines and set-up, instructional methodology, student grouping strategies, progress monitoring, and an overview of the instructional materials. In addition, the FR teachers were taught how to instruct students during the first unit of the curriculum entitled Establish the Course.

During the fall semester of Year 1, each FR teacher received three additional days of PD over the course of three months that included instruction on the Prediction Strategy, Possible Selves for Readers, and The Bridging Strategy. PD for the Prediction Strategy and Possible Selves for Readers was conducted over two half-day sessions on different dates in the form of a professional learning community (PLC). This PLC watched the online modules for each of the strategies and engaged in in-depth conversations about implementation and next steps in combination with their FR coaches. The Bridging Strategy PD was implemented differently due to the content of this strategy. Since past FR teachers had found PD for the Bridging Strategy to be more challenging than other strategies, Bridging Strategy PD was conducted by certified trainers over an entire professional learning day.

Coaching. FR coaches and professional developers were in frequent contact with the curriculum director and special education coordinator to respond to questions and monitor progress. Furthermore, FR coaches provided monthly coaching to each of the FR sites to ensure fidelity of implementation. During the coaching sessions, the FR coaches employed strategy checklists, classroom modeling requested by the FR teacher of specific strategy components, problem-solving and comparing checklists during their planning period, and provided encouragement and motivation for each of the FR teachers. Coaching techniques followed the principles of Partnership Instructional Coaching (e.g., Knight, 2007, 2009).

End of Year 1. In June 2017 of Year 1, FR teachers received a full-day review of the following information

from Year 1: data analysis from each of the FR sites, student success stories, review and refresher of Thinking Reading and administration and scoring of the TOSCRF-2, FR alignment with Virginia's SOL, and teacher survey review of Year 1 FR; in addition, they began planning the launch of FR Year 2 for the 2017-2018 school year.

Comparison Condition

The BAU teacher was described as not using a specific intensive and explicit reading program. Instead, BAU instruction was teacher-designed remediation lessons using the grade-level English curriculum. For example, students in need of reading assistance were scheduled for 45-minute sessions during an academic resource period that met five days per week throughout the school year. During this time, the students received tutoring support for their English language course assignments by the special education teacher. No formal reading program was universally provided. In addition, some core class teachers tutored these same students in the general education curriculum based on out-of-class assignments or homework assignments. Thus, students with disabilities were primarily instructed or tutored by the special education teacher who followed the tutorial model described previously. Adolescents with LRP and without disabilities were instructed or tutored by their grade-level English teachers.

Measures

Two measures were used in this study: the state of Virginia Reading Standards of Learning (SOL) assessment (VDOE, 2017b) and the Test of Silent Contextualized Reading Fluency-2 (TOSCRF-2; Hammill et al., 2014). The SOL assessment contains two types of tests, the online passage-based computer adaptive test (CAT) and the traditional test. A passage-based CAT is a customized assessment where each student receives a unique set of passages and items. The passages are fictional and nonfictional taken from the state's core class curricula. For example, questions from *The Monkey's Paw* (W.W. Jacobs, 1902) are included in the middle school English language arts test. This is in contrast to the traditional test in which all students who take a particular version of the test receive the same passages and respond to the same test questions. The reading test covers the SOL in the reading strand of the English SOL. The SOL are grouped into categories, labeled as reporting categories, that address related content and skills. For example, a reporting category for the read-

ing SOL test is: *Use word analysis strategies and word reference materials*. Each SOL in this reporting category addresses skills using word analysis strategies or word reference materials. When the results of the SOL tests are reported, the scores are presented for each reporting category and as a total test score. The Virginia Reading SOL assessments provide no data on reliability or validity. However, the tests are developed with teacher input and are aligned with the state standards, which provides some measure of validity.

The second measure, The Test of Silent Contextual Reading Fluency-2 (TOSCRF-2; Hammill et al., 2014), is an updated version of the TOSCRF (Hammill et al., 2006) and was normed on a nationally representative sample of 2,375 students ranging in age from 7 to 24 years. The test measures the speed with which students can recognize the individual words in a series of passages that become progressively more difficult in content, vocabulary, and grammar. The TOSCRF-2 measures a variety of reading skills, including recognizing print words and knowing their meaning, use of syntax and morphology, using word knowledge and grammar to grasp the meaning of words, sentences, paragraphs, contextual material, and to understand contextual material with silent fluency. The TOSCRF-2 also measures fluency.

Authors of the TOSCRF-2 report very large correlations with popular measures of reading comprehension (mean corrected correlation .75; range .41–.92). For example, the average correlation between TOSCRF-2 and the Oral Reading Index from *Gray Oral Reading Tests—Fifth Edition* (GORT-5; Wiederholt & Bryant, 2012) was .73. The tests also correlated .75 with the *Tests of Silent Reading Efficiency and Comprehension* (TOSREC; Wagner et al., 2010). The TOSCRF-2 has evidence of high reliability (median .87; range .84–.90), sensitivity (median .78; range .73–.84), specificity (median .79; range .71–.84), and receiver operating characteristic/area under the curve (ROC/AUC; median .88; range .85–.89).

Research Design

The research design for this study was a quasi-experimental comparison group design involving intact groups. One division with three middle schools was selected by VDOE to implement and evaluate the FR program. In order to strengthen the evaluation, a comparison middle school from another division agreed to participate as the comparison condition. The comparison school was given the opportunity to adopt FR after the study was completed. Table 1 compares the characteristics of the participating schools receiving FR.

The three schools implementing FR were labeled Fusion Reading 1, Fusion Reading 2, and Fusion Read-

ing 3. These three schools made up the experimental condition. The fourth middle school was the comparison condition, which offered LRP readers BAU support for reading instruction.

Fidelity of Implementation

Instructional checklists designed to measure implementation of the FR program and a Fusion Reading Teacher Reflection (FRTR) form were developed to measure fidelity of implementation for the experimental condition. Fidelity was conceptualized as the difference between the intended program model, based on FR lesson plans, and the FR program actually implemented by the teacher.

The first checklist, *What's Fusion Reading Looking Like?*, was divided into two major sections: global fidelity to the lesson format and fidelity to specific instructional procedures. The fidelity checklist measured how closely the FR teacher followed the design of the DLF and instructional practices. The fidelity checklist observation measure was administered for all six lessons: (a) Classroom Climate, (b) Daily Warm-Up Activity, (c) Thinking Reading, (d) Explicit Instruction, (e) Vocabulary, and (f) Wrap-Up. The second checklist, *Vocabulary Instruction*, was intended to help guide FR teachers through the entire seven-step vocabulary strategy, which in turn allowed students to be engaged with meaningful discussions and make decisions about the meaning of a given word. The third checklist, *Thinking Reading*, evaluated how well FR teachers implemented the Thinking Reading process. That is, did the teachers model how a strategic reader reads as well as how a strategic reader thinks while making sense of the text? The final form, *How's Fusion Reading Going?*, was given to FR teachers a week prior to a scheduled monthly coaching visit. This form allowed FR teachers to provide FR coaches with feedback on how they had been progressing with FR. The information helped FR coaches to plan their visit and address any fidelity issues or barriers a FR teacher may have documented.

FR coaches learned how to utilize each of the checklists through online modules prepared by the FR program authors. FR coaches met monthly to compare checklists and feedback given to FR teachers to ensure consistent decisions about fidelity of instruction among FR coaches. Furthermore, FR coaches met with the FR authors using a virtual conferencing tool to deepen the understanding and generalization of coaching FR with each of the FR schools. All information gathered during these meetings was deliberated and shared amongst all FR coaches.

FR coaches made observational notes regarding fidelity of FR implementation based on instructional

component checklists. Additional fidelity information was gathered directly from the FR teachers when they completed the FRTR form prior to a scheduled monthly coaching visit. Checklists and observational notes were the foundation of coaching conversations, and were given directly to FR teachers by the coaches at the request of the teachers. Goals for the next coaching session were established and grounded on these checklists and any anecdotal information provided to the FR teacher. Additionally, FR coaches demonstrated specific components of FR when requested by the FR teacher.

Qualitative analysis of all data gathered indicated that two of three FR teachers implemented FR with a high level of fidelity. The remaining teacher had numerous absences during the 2016-2017 school year due to documented medical reasons, and consequently was unable to focus her attention on the new intervention being implemented.

Analysis and Results

An analysis of outlier status using percentiles and boxplots (using SPSS version 22; Tukey, 1977) was conducted in accordance with standard practice to protect against inflated error rates and distortions of statistical estimates. The scores of zero students were outliers; thus, all scores were included in subsequent analyses.

To determine whether there were differences in performance between comparison and FR students, an ANCOVA was conducted on students' TOSCRF-2 scores with grade level (sixth, seventh, and eighth grade) and group/school (Comparison, Fusion Reading 1, Fusion Reading 2, and Fusion Reading 3) as between-subjects variables and 2016 scores from the Virginia Standards of Learning measure (VA SOL) as a covariate. VA SOL scores will be identified as just scores in the following text. Partial eta-squared was used as a measure of effect size (Richardson, 2011). Effect sizes for partial eta squared (η_p^2) are generally considered small 0.01, medium 0.06, or large 0.14 (Murphy & Myous, 2004).

The grade-level group difference between sixth-, seventh-, and eighth-grade students' mean TOSCRF-2 scores at pretest was nonsignificant after statistically controlling for 2016 scores, $F(2, 222) = 0.27, p = 0.773, \eta_p^2 = 0.08$. There was insufficient evidence to indicate a difference in performance between the three grade levels. In contrast, the group difference between comparison and FR school students' mean TOSCRF-2 scores at posttest was significant after statistically controlling for 2016 scores, $F(3, 222) = 8.67, p = 0.01, \eta_p^2 = 0.81$. However, this main effect was qualified by a significant interaction between grade level and group, $F(6, 222) = 4.07, p = 0.001, \eta_p^2 = 0.10$.

To investigate this interaction, the data from each grade level were examined separately. Results showed that the sixth-grade students' average TOSCRF-2 scores differed significantly as a function of group, $F(3, 69) = 11.92, p < 0.01, \eta_p^2 = 0.34$, after statistically controlling for 2016 scores. Using Bonferroni correction (adjusted $\alpha = .0167$), pairwise comparisons of sixth-grade students' data revealed that the scores of students who received the FR intervention were higher than the scores of students who received the comparison intervention (BAU) (see Table 3). The seventh-grade students' average TOSCRF-2 scores differed significantly as a function of group, $F(3, 71) = 10.30, p < .001, \eta_p^2 = 0.30$, after statistically controlling for 2016 scores. Using Bonferroni correction (adjusted $\alpha = .0167$), pairwise comparisons of seventh-grade students' data revealed that the scores of students who received the FR intervention were higher than the scores of students who received the comparison intervention (see Table 3). Finally, the eighth-grade students' average TOSCRF-2 scores also differed significantly as a function of group, $F(3, 80) = 20.35, p < .001, \eta_p^2 = 0.43$, after statistically controlling for 2016 scores. Using Bonferroni correction (adjusted $\alpha = .0167$), pairwise comparisons of eighth-grade students' data revealed that the scores of students at two out of the three FR intervention schools were higher than the scores of students who received the comparison intervention (see Table 3).

To investigate this interaction, the data from each grade level were examined separately. The following pairwise comparisons controlled for multiple comparisons through the Bonferroni adjustment for multiple comparisons ($\alpha = 0.0167$). The sixth-grade students' average VA SOL scores were marginally significant as a function of school/group, $F(3, 81) = 2.16, p < 0.10, \eta_p^2 = 0.07$, after statistically controlling for 2016 VA SOL scores. Pairwise comparisons of sixth-grade students' data failed to reach statistical significance; however, inspection of individual schools indicated that student scores at two of three FR schools improved (see Table 4). The seventh-grade students' average VA SOL scores differed significantly as a function of school/group, $F(3, 77) = 7.01, p < .001, \eta_p^2 = 0.22$, after statistically controlling for 2016 scores. Similar to sixth-graders' data, student scores at FR intervention schools were higher than the scores of students who received the comparison intervention; however, only one pairwise comparison reached statistical significance (see Table 4). There was insufficient evidence to indicate a difference in eighth-grade students' average VA SOL scores as a function of school/group, $F(3, 100) = 0.47, p = 0.71, \eta_p^2 = 0.01$, after statistically controlling for 2016 scores.

A post hoc power analysis was conducted with G*Power (Erdfelder et al., 1996) to determine whether

Table 3
Mean (and Standard Error) TOSCRF-2 Scores

Grade Level	Group	N	Mean TOSCRF-2 (SE)	p-value ^a (vs. comparison school)
6th Grade	Comparison	20	18.35 (5.00)	
	Fusion 1	16	48.85 (4.36)	< 0.001
	Fusion 2	21	53.50 (4.60)	< 0.001
	Fusion 3	17	57.29 (5.20)	< 0.001
7th Grade	Comparison	22	24.42 (4.65)	
	Fusion 1	15	58.27 (5.66)	< 0.001
	Fusion 2	24	50.09 (4.46)	0.001
	Fusion 3	15	56.98 (5.64)	< 0.001
8th Grade	Comparison	40	28.32 (3.12)	
	Fusion 1	10	64.92 (6.24)	< 0.001
	Fusion 2	15	68.30 (5.10)	< 0.001
	Fusion 3	20	36.12 (4.41)	0.919

^ap-values reflect Bonferroni adjustment for multiple comparisons.

the design had sufficient power to detect an interaction between grade level and group. The effect size f (based on the partial eta-squared of 0.05) was 0.23. The power to detect an effect of this size with four groups, one covariate, and a total sample size of 273 was determined to be 0.81. In contrast, power analyses for the pairwise comparisons for sixth and seventh graders indicated that the contrasts between the comparison and Fusion 1 were underpowered to detect an effect ($d = 0.58$, $\alpha = 0.0167$, $df = 42$, one-tailed, power = 37.9%; $d = 0.06$, $\alpha = 0.0167$, $df = 39$, one-tailed, power = 2.53%) whereas the other two contrasts had 99.99% power to detect an effect.

Discussion

Regarding Research Questions 1 and 2, the findings from this study of middle school students with LRP indicated that students who received the FR program performed significantly higher on a standardized measure of reading skills than students in a comparison middle school. Specifically, when reading skills were assessed using the TOSCRF-2, FR students, across the three grade levels, scored significantly higher than comparison students. The TOSCRF-2 measures a variety of reading skills, including recognizing print words and knowing their meaning; use of syntax and morphology; and using word knowledge and grammar

to grasp the meaning of words, sentences, paragraphs, contextual material, and to understand contextual material with silent fluency. In previous studies, we have found the TOSCRF and TOSCRF-2 to be sensitive to the FR program.

The impact or effect size of the differences in scores between the FR and comparison groups on the TOSCRF-2 was large favoring the FR condition. In addition, the effect on scores between grade-level groups favored the FR groups as well, indicating a more moderate effect. However, the eighth-grade group comparison only favored two of the three FR groups.

The VA SOL assessment requires sixth-grade students to be able to discuss the impact of setting on plot development; describe character development; differentiate between first- and third-person point of view; differentiate between free verse and rhymed poetry; explain how an author's choice of vocabulary contributes to the author's style; skim materials to develop a general overview of content and to locate specific information; identify transitional words and phrases that signal an author's organizational pattern; identify organizational pattern(s); identify the elements of narrative structure, including setting, character, plot, conflict; describe how word choice and imagery contribute to the meaning of a text; identify and analyze the author's use of figurative language; and analyze ideas within and between selections providing textual evidence (VDOE, 2017b).

Table 4
Mean (and Standard Error) VA SOL Scores

Grade Level	Group	N	Mean VA SOL (SE)	p-value ^a (vs. comparison school)
6th Grade	Comparison	27	381.66 (6.76)	
	Fusion 1	17	377.28 (8.29)	0.999
	Fusion 2	23	392.25 (7.02)	0.999
	Fusion 3	19	402.56 (7.81)	0.309
7th Grade	Comparison	26	387.15 (6.03)	
	Fusion 1	15	387.56 (7.99)	0.999
	Fusion 2	25	422.66 (6.16)	0.001
	Fusion 3	16	394.13 (7.71)	0.999
8th Grade	Comparison	54	373.16 (4.55)	
	Fusion 1	12	384.63 (9.66)	0.999
	Fusion 2	19	378.57 (7.68)	0.999
	Fusion 3	20	378.66 (7.48)	0.999

^ap-values reflect Bonferroni adjustment for multiple comparisons.

Most of these skills were not a focus of the supplemental FR Year 1 program. These skills are typically addressed in English language arts classes and supported by multiple occasions to integrate FR skills and strategies with English language arts content materials. Thus, significant statistical differences were not found between the FR students and the comparison students on the state reading SOL measure. The effects of FR on student outcomes for sixth grade was small, while seventh-grade students showed moderate to large impact. Effects for eighth-grade students were not significant.

In sum, FR shows promise as a supplemental and comprehensive reading program for adolescent readers with LRP whose low reading achievement is related to a lack of basic word level, vocabulary, and reading comprehension strategies. How, and if, FR can address the specific language arts skills on the VA SOL assessment (or other state reading assessments) is unclear. Thus, while FR does focus on supported generalization and integration of reading skills and strategies necessary for success in core classes, enhancements to the integration process seem warranted. That is, more explicate instruction and extended practice with elaborated feedback as students apply reading skills and strategies to actual English language arts course material may help them acquire the language arts skills measured by state SOL assessments. Additionally, some language arts standards may need to be woven into the FR program.

Fidelity of Implementation

Our third research question addressed fidelity of implementation of the FR program. Measures and checklists of fidelity, developed during previous studies, were used to measure fidelity across several domains, including (a) global fidelity, (b) instructional procedures, (c) Thinking Reading procedures, and (d) the vocabulary instructional process. While we were unable to retrieve all the measures and conduct a statistical analysis of fidelity data, we were able to make informed decisions about the overall level of fidelity from coaching notes and logs, concluding that two of three experimental teachers had a high level of fidelity and one had a low level of fidelity due, in large measure, to chronic health and absentee issues. The low-fidelity classroom may have suffered from extensive use of substitute teachers, who were not formally taught how to teach the FR program. Instead, the substitutes focused on Thinking Reading and learning vocabulary words by an independent study activity. Given these data limitations, the study goal of measuring fidelity of implementation could not be fully documented.

Limitations

There are several limitations to this study. First, the lack of direct data on fidelity of implementation of the

BAU program limits the comparison. Whether BAU was fully implemented as designed and whether and where instructional overlap occurred between BAU and FR is unknown. For example, both the BAU and FR could have had elements of explicit instruction, and explicit instruction has been found to positively impact reading outcomes for students with disabilities (e.g., Swanson, 1999). Not knowing if BAU skills and strategies were taught explicitly, or were taught at all, limits our understanding of what works. In addition, and as explained above, much of the fidelity of implementation data for the FR condition was missing at the end of the study, and the statistical analysis of fidelity of implementation was limited. This was due to the desire of teachers to receive documentation of written checklist feedback during the coaching session and our decision to honor this request. Beyond the consensus of FR coaches, the extent to which the FR program was implemented with fidelity in its totality is unknown.

Second, compared to the experimental groups, the sample size of the comparison condition was smaller and from only one school. This could impact findings as groups could be impacted by factors not related solely to reading achievement. Thus, while the comparison school was matched on several key points, the quasi-experimental design limits the strength of the findings.

Third, FR is a comprehensive and intensive adolescent reading program. In this study, we report only on the results of one year of a multi-year program. Thus, during this period, students received only a portion of what is designed to be a program that builds upon mastery of seven core reading strategy units. It may be, therefore, that the more distal effect on the SOL test scores had not yet occurred after just one year. Other researchers have concluded that more than one year might be needed for some students with LRP. For example, Vaughn et al. (2012) suggested that multiple-year reading interventions might be needed to close the reading achievement gap. Thus, it is unknown what change or impact the program might have on students who participate in the instructional activities beyond one year. Our goal for this study was to measure the promise of the FR program to improve reading outcomes after one year of instruction and to respond

to the school district to evaluate impact after one year of instruction. This information would be used to help determine if the program should continue.

Implications

Supplemental reading programs can be effective if certain systems and structures are in place (Bemboom & McMaster, 2013). For example, a supplemental course requires scheduling support, extensive PD and coaching, a dedicated classroom, and instructional materials. Teachers need extended time to teach; FR requires that students attend the class five times a week for at least 50 min each day. Scheduling challenges in middle and high schools need to be addressed before effective supplemental instruction can be delivered to all adolescent LRP readers. For example, since FR is supplemental, students may have to use an elective class option to participate in the class, forcing them to miss another elective.

We are convinced that there is no short-term solution to the challenge of improving the reading outcomes of adolescent struggling readers, and for that reason we have designed FR as a multi-year curriculum. Other researchers are developing comprehensive reading programs that move beyond six- or eight-week courses. As additional data are becoming available from rigorous studies of adolescent reading programs, there is some consistency in the difficulty of obtaining high-impact outcomes that document closing of the achievement gap (e.g., Al Otaiba et al., 2018; Vaughn et al., 2012). Finally, the direct link of supplemental reading courses to core class material is critical for generalization of reading skills. Supplemental reading programs that are decontextualized from core class text materials may be one reason for the limited long-term effects of some current reading programs. We believe that additional focus is needed to support integration and application of reading skills and strategies to authentic core class materials. While comprehensive, intensive adolescent reading programs may be part of the solution to the challenges facing adolescents with LRP, the integration of instruction that makes practice and elaborative feedback more personalized may be another.

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