Literacy Interventions for Special Student Populations

This report by Hanover Research provides a broad overview of literacy programs and their studied effects as interventions for four student population groups: beginning readers, English language learners, urban-area children, and adolescents. The surveyed literature examining the programs is summarized from peer-reviewed journal articles, reports from reputed educational policy organizations, and government-sponsored research.
Report Overview

In the following pages, Hanover Research presents literacy interventions for special student population groups. In particular, this report aims to highlight intervention programs found to have the most positive effects on student performance when reviewed in randomized research studies. Profiles of these intervention programs and their studied effects comprise the bulk of this report, though this research will be framed within a discussion of the general practices found to be essential to literacy success for the different groups, including beginning readers, English language learners, urban-area children, and adolescents.

In describing interventions and assessing program effectiveness, this report will be guided by the Institute of Education Sciences’ What Works Clearinghouse (WWC) database, a useful tool that compiles relevant data from an exhaustive search of intervention effectiveness studies into reports using a uniform evaluation scale. The following sections of the report will provide background information on important literacy skills for different age level groups as well as profiles of programs that are found to be effective at those ages:

- **Section One:** Early Literacy Interventions
- **Section Two:** English Language Learner Interventions
- **Section Three:** Interventions in Urban Education Settings
- **Section Four:** Adolescent Literacy Interventions

The first three sections focus on school-age children in the primary grades (generally kindergarten through third grade) because the literature on reading interventions for these special student populations, specifically English language learners and urban students, focuses on this age group. As the WWC does not have a category for tracking research on interventions in urban education settings, we used ProQuest Education Journals as our primary source to locate recent studies. Research on adolescent literacy spans students in grades 4 through 12.

Given the vast number of literacy programs available, in each section we profile only those that have been shown to have some degree of positive effect in one or more reading skill areas (e.g., decoding, comprehension, etc.) on the relevant target population. Summaries and conclusions of research studies on selected interventions are drawn from WWC intervention reports or other peer-reviewed journals available online. We caution that the highlighted research in this report represents a small fraction of published studies with varying outcomes and opinions on the various literacy programs mentioned throughout this report, and as such, it is not fully comprehensive.
Section One: Early Literacy Interventions

Recognizing that reading is a foundation for students to become informed citizens, prepared workers, and life-long learners in the 21st century, educators are called upon to adopt practices that help all children learn to read well. Although most children learn to read and continue to improve, there continues to be a group of children for whom learning to read is a struggle. School districts must be able to identify these students in need of intervention and implement evidence-based interventions to promote their reading achievement. Thus the choosing of effective intervention programs and instructional strategies for the struggling reader continues to be a topic of concern for schools.

With this increased interest in preventing reading problems before they develop, schools are focusing not only on core reading programs but also targeting primary grades students with reading difficulties for interventions to prevent future reading failure. Early intervention is a preventative approach to educational outcomes and closing the achievement gap, predicated on the belief that certain children can be “spotted” early on and given extra attention so that what was once perceived as imminent failure becomes negated.\(^1\) Making literacy the center of an early intervention strategy emphasizes the necessity of raw skills in creating strong learners, and accepts the interconnectedness of academics and behavior.\(^2\)

Early literacy intervention (ELI) has taken many forms over the past several decades, with the development, implementation and study of a range of different model programs. Reviews of effective ELI programs have targeted some common characteristics that make these programs successful. One-on-one and small-group tutoring tend to be most effective for children who are struggling with reading, as these provide the most individualized attention and extra instructional time these readers need. The instruction for struggling readers needs to be congruent with the regular classroom instruction so that the two programs are coordinated. Moreover, children who are struggling to learn to read need excellent instruction provided by highly skilled personnel. This includes the instruction provided in the regular reading program and the intervention program.\(^3\)

One useful resource for comparing ELI programs is the What Works Clearinghouse (WWC), an online database provided by the U.S. Department of Education’s Institute of Education Sciences (IES). Since 2006, the IES has produced reports reviewing 29 early intervention programs designed to improve literacy skills. Each program report


\(^3\) Quatroche, D.J. 1999 (Sept.). Helping the Underachiever in Reading. ERIC Clearinghouse on Reading, English, and Communication Digest #141. http://www.indiana.edu/~reading/ico/digests/d141.html
is based on evidence from an exhaustive search of published and unpublished studies, written in English no earlier than 1985, involving children in grades K-3. The WWC reviews the effects of ELI programs on their effectiveness in the following learning domains: (1) alphabectics, including phonemic awareness, phonological awareness, letter recognition, print awareness and phonics; (2) reading fluency; (3) comprehension, including vocabulary and reading comprehension; and (4) general reading achievement, a term which refers to outcomes that combine skills from the other domains, or total reading ability.

Of the 29 literacy intervention programs reviewed by the WWC, the following 11 programs demonstrated either positive or potentially positive effects on at least two of the four literacy measures listed above:4

- Corrective Reading
- Early Intervention in Reading
- Earobics
- Kaplan SpellRead
- Ladders to Literacy
- Lexia Reading
- Literacy Intervention
- Peer-Assisted Learning Strategies (PALS)
- Reading Recovery
- Start Making A Reader Today (SMART)
- Success for All

The following 12 intervention programs were found by the WWC to have positive or potentially positive effects on one of the four literacy measures (alphabectics, reading fluency, comprehension, and general reading achievement):5

- Accelerated Reader
- ClassWide Tutoring
- Failure Free Reading
- Fast ForWord
- Fluency Formula
- LindaMood Phonemic Sequencing (LiPS)
- Little Books
- Read, Write & Type!
- Stepping Stones to Literacy
- Voyager Universal Literacy System

Waterford Early Reading Program
Wilson Reading System

One other ELI program, Cooperative Integrated Reading & Composition, was found to have no discernible effects on comprehension, the only outcome on which it was evaluated. Several other intervention programs, including Houghton Mifflin Reading, Invitations to Literacy, Open Court Reading, Read Naturally, and Reading Mastery, were found to have no research studies meeting inclusion criteria for WWC, meaning no conclusions could be drawn about their effectiveness.

Effective Early Literacy Intervention Programs

Below are the profiles of literacy intervention programs identified above that have shown positive effects in multiple reading skill areas on students at the primary level. An overview of the literature on each program cited by the WWC is presented, followed by other available relevant research, if any. (Some programs may be referred to again in subsequent sections of this report because WWC also reviews research on intervention programs in the context of other special student populations, e.g., English language learners.)

Corrective Reading

Corrective Reading is a supplementary classroom curriculum designed to improve the reading accuracy, fluency and comprehension skills of students in third grade or higher who are reading below grade level. The curriculum is delivered in 45-minute lessons, five times per week for groups of up to 20 students. Lessons cover decoding and comprehension across four different levels: Decoding level A, for non-readers; Levels B1 and B2, for struggling readers who do not read fluently or may confuse similar words; and Level C, for students who experience difficulty with vocabulary and complex sentence structures. At all levels, students complete mastery tests and individual reading “checkouts” to allow teachers to assess individual student achievement.

Research studies of the Corrective Reading intervention program reviewed by WWC demonstrate potentially positive effects on alphabetics and fluency, but no discernible effects on comprehension. The WWC considers the body of research supporting these effects to be small for these variables; specifically, the database cites one study of the program’s implementation in classrooms of 79 Pennsylvania students in third grade.

Early Intervention in Reading

Early Intervention in Reading (EIR) is a supplemental instruction program designed to provide extra help to students at risk of failing to learn to read. The program, appropriate for students in kindergarten through fourth grade, involves 15 to 20 minutes of daily supplemental instruction to a whole class or small groups of five to seven struggling readers. Activities at the kindergarten level include listening to stories, creative dramatics, and instruction in concepts of print, rhyme, phonemic segmentation and blending, and letter and sound recognition. In grades 1-2, classroom lessons include repeated reading of familiar stories and coached reading of new stories, phonemic awareness training, phonics instruction, guided sentence writing, vocabulary and comprehension instruction. In grades 3-4, lessons focus on multisyllabic words, fluency and comprehension through instruction based in narrative and informational picture books.8

The WWC reviewed one study on the effects of EIR on first grade classrooms across one Midwestern state, containing a total of 59 students. This study found the program to have potentially positive effects on the learning areas of both alphabets and comprehension, though the WWC considers this body of evidence to be small for these variables.9 Other studies have found positive results for EIR on readers in elementary school.

A meta-analysis of EIR investigated research on the program at different levels. In particular, the authors summarize findings of other researchers who looked at EIR as a supplemental classroom intervention program in which a first- or second-grade teacher works with a group of the five to seven lowest achieving readers for 20-30 minutes a day. Across four studies of first graders, 67 percent of the EIR children could read on a primer level or higher by May, with 46 percent of the children able to read on an end-of-grade 1 level. In contrast, only 39 percent of the control children could read on a primer level or higher by May, with only 12 percent able to read at an end of grade 1 level. In the two studies in which standardized reading scores were available, the EIR children were found to score higher than the control children on these tests.10 Across two studies of second graders, 64 percent of the children who came to second grade reading well below a primer level were reading on a grade-2 level by the end of second grade.11

11 Ibid., 7
Earobics

The literacy intervention Earobics is an interactive software-based program consisting of Earobics Foundations, designed for students in pre-kindergarten, kindergarten and first grade, and Earobics Connections, aimed at students in grades 2-3, as well as older struggling readers and at-risk, general, and special education students. Engaging students in interactive activities guided by animated characters that address recognizing and blending sounds, rhyming, and discriminating phonemes within words meant to be used as a supplement to existing language arts programs, the software provides individualized systematic instruction in phonemic awareness, auditory processing, phonics, and cognitive and language skills required for reading comprehension.12

The WWC considers the extent of evidence for effectiveness of the Earobics program to be small. It cited four studies of the implementation of Earobics among the classrooms of 246 students in California, Florida, Alaska, and Illinois. Based on this research, the program was found to have positive effects on alphabets and potentially positive effects on reading fluency for children in grades K-3.13

Kaplan SpellRead

The Kaplan SpellRead program, formerly known as SpellRead Phonological Auditory Training, is a literacy intervention aimed at struggling readers in grades 2 or above, including special education students and English language learners. This program is also appropriate for students who are two or more years behind in reading, meaning that they read at a grade level more than two years below their own.14

The SpellRead program consists of 140 lessons divided into three phases, which can be completed in five to nine months. Each lesson is instructed in a classroom setting, with one instructor teaching small groups of five students for a 60 to 90 minute class. Phase A, containing 50 lessons, focuses on training the auditory process function of the brain to hear and manipulate different sounds of the English language. The second phase, Phase B, teaches 30 lessons covering secondary spelling of vowel sounds, consonant blends, and syllable sounds of two-syllable words. In Phase C, students complete 25 lessons focusing on decoding words of three or more syllables, as well as clusters and word forms.15

15 Ibid.
The WWC reviewed two studies on the effects of Kaplan SpellRead on a population of 208 students between the first and third grade years. This research found the program to have positive effects on skills in alphabetics and potentially positive effects on fluency and comprehension skills.16

Ladders to Literacy

Ladders to Literacy is a supplemental curriculum for kindergarten students designed to enhance skills in print awareness, phonological awareness skills and oral language skills. The curriculum is presented in the books Ladders to Literacy: A Preschool Activity Book, and Ladders to Literacy: A Kindergarten Activity Book. This profile will focus on the kindergarten-level version of the program. The kindergarten curriculum targets students from different backgrounds, including typically developing students, students with disabilities and those at risk of reading failure.17

The Ladders to Literacy curriculum contains about 20 lessons and activities in each of three sections which teach print awareness, phonological awareness skills and oral language skills. Teachers may choose from these activities based on what they are covering in lesson plans, and implement them on a weekly, monthly or one-time basis. All activities require little preparation time and are designed for large groups, like an entire class. Activities in the print awareness section answer questions about environmental print, print conventions, and letter names and sounds. The curriculum encourages teachers to use newspapers, menus, recipes, signs, messages and writing exercises to supplement books in the classroom. In phonological awareness activities, students are asked to identify environmental sounds, repeat words or phrases in songs and nursery rhymes, play games of alliteration, and blend and segment words. In the oral language section, students complete activities that encourage developmental conversation prompted by storybooks, pictures, objects and films. The oral language section integrates the other sections by encouraging students to reference print and phonological awareness activities.18

A moderate to large body of evidence of the effects of the Ladders to Literacy intervention was reviewed by the WWC. In particular, four studies of implementation of the program in classrooms of 760 total kindergarten students at 14 schools across the Midwest found the effects of the program to be potentially positive on alphabetics skills and fluency, with mixed effects on comprehension.19

Lexia Reading

Lexia Reading is an intervention program that combines three versions of the literacy software developed by Lexia Learning Systems, including Early Reading, Primary Reading, and Strategies for Older Students. Together, these programs serve students of pre-kindergarten through adult age. Lexia Reading is a supplementary reading software program comprised of 20-30 minute lessons meant to be completed in two to five weekly sessions depending on the ability of the student. With Internet-based software that automatically tracks student responses, the program is available on demand in homes, libraries, after-school programs, and community centers. Students reading at grade level or above are instructed to use the program twice a week; students who are at-risk or are English language learners should use the program three to four times a week; the program should be used five times a week for special education, Title I, and English language learners who have serious reading deficiencies.20

The WWC reviewed three studies of the effectiveness of Lexia Reading on 314 kindergarten and first grade students in two states; this resource considers the extent of evidence to be small. Based on this research, *Lexia Reading was found to have potentially positive effects on both alphabetics and comprehension*, but no discernible effects on fluency or general reading achievement.21

Peer-Assisted Learning Strategies

Peer-Assisted Learning Strategies (PALS) is a unique literacy intervention program designed to provide a supplementary reading curriculum for students in the elementary school years. In PALS, students are paired together based on their abilities on certain skills taught in the classroom, such as reading comprehension; each pair contains a “player,” a student who may be struggling with that skill, and a “coach,” a student who can appropriately assist them. The roles will rotate through different activities, such as reading aloud or retelling stories. Each partner session contains structured activities and exercises lasting 30-35 minutes, occurring three times a week.22

The PALS program includes separate versions for kindergarten (K-PALS), first grade (First-Grade PALS), and grades 2-6. The PALS curriculum provides specific lesson sheets for kindergarten and first grade student participants, and teachers select appropriate reading material for partner reading at all program grade levels.

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Kindergarten and first grade PALS sessions might include partner activities focusing on learning to hear and identify sounds, sounding out words, learning sight words, practicing passage reading, predicting story plots, reading aloud, and retelling stories. In the later grades, students may complete specific activities to improve reading accuracy, fluency, and comprehension.\textsuperscript{23}

The WWC reviewed four studies of the implementation of PALS in classrooms with a total of 360 students in grades 1-3 in the U.S. This body of evidence, considered small, found the program to have \textit{potentially positive effects on student skills in alphabetics, fluency, and comprehension}.\textsuperscript{24}

Additional trials have studied the effects of the PALS intervention program in both reading and math on a wide range of children from all income backgrounds in mainstream schools across south Texas, several cities in Minnesota, and Nashville, Tennessee. The results of these studies found that students with learning disabilities, low-achieving students without disabilities, average-achieving students, and high-achieving students all made greater progress in PALS reading and math classrooms than their respective counterparts in non-PALS classes. These results support evidence that regardless of whether students entered the program performing at low, average or high achievement levels, all ended the year with stronger skills in the learning areas emphasized by the intervention program.\textsuperscript{25}

In another study, teacher Brandy Dunn examined the effects of the PALS program on a group of 21 first grade students at an elementary school that had failed to meet Adequate Yearly Progress two years in a row. The site for the study was a Title I school where over 90 percent of students received free or reduced lunch, with an ethnically diverse population containing over 65 percent English language learners. Dunn expressed that the goal of the program was to help students performing below the grade reading level to catch up to their peers. Dunn also noted that during the teacher-led portion of the program, in which an instructor guides students in letter naming, sound practicing, blending, sight word recognition and fluency, the students enjoyed the lessons and made significant gains.\textsuperscript{26}

The PALS class of 21 students was compared with a control group of 19 students of equivalent age and beginning reading achievement levels. Three benchmarking assessment exams were given to both classes in the fall, winter, and spring. When compared, it was found that the \textit{PALS class scored significantly better than the control group on all three exams. Additionally, students in the PALS class experienced a 24 percent increase in...}
reading fluency rates during each semester of the program, such that where in the fall, 42 percent of the class was reading at the state standard of 60 words per minute, by winter break two-thirds percent of students reached that rate. At the end of the year, all students in the PALS class had reached the state standard of reading fluency.27

Reading Recovery

Reading Recovery is a short-term literacy intervention program that provides personal tutoring for first grade students at the bottom 20 percent of their class. The program aims to help these students gain literacy skills equivalent to their grade level in order to prevent long-term reading difficulties. In Reading Recovery lessons, teachers interact with students to convey lessons that incorporate several components of reading instruction, including phonemic awareness, phonics, vocabulary, fluency, comprehension, writing, and oral language. Together, student and teacher will read familiar and new stories and complete activities such as manipulating letters and words, and writing and assembling stories. Students who do not reach this level after the 20 weeks of the program are referred for further evaluation and a plan for future action. In order to teach Reading Recovery, instructors must complete a one-year, university-based training program as well as ongoing professional development.28

The WWC reviewed research studies of the effectiveness of Reading Recovery among classrooms of 700 first grade students in more than 46 U.S. schools, determining this body of evidence to be medium to large for the variables of alphabets and reading achievement skills, and small for fluency and comprehension. The results of this research found the intervention to have positive effects on general reading achievement and alphabets, and potentially positive effects on fluency and comprehension.29

In an attempt to provide a more comprehensive evaluation of Reading Recovery, researchers in 2004 conducted a meta-analysis of the program that included studies that utilized more rigorous designs. Of the 109 studies, 36 met the criteria for inclusion. From these studies, 1,379 effect sizes were computed across outcome type (e.g., standard achievement test or observation survey measure such as letter identification), comparison group, treatment-group type, and test time.30 For outcome type, Reading Recovery students had larger posttest scores on all measures except standardized achievement tests. On all observation survey measures, Reading Recovery students appeared to have larger pre-post differences than similar needy students, particularly discontinued students.31

29 Ibid.
31 Ibid., 34-35
In 2005, researchers from Boise State University and Purdue University conducted a detailed study on the long-term effectiveness of the Reading Recovery intervention. This study examined students who had successfully completed the Reading Recovery program—meaning that their lessons had been discontinued during first grade—at points one, two, and three years beyond receiving the intervention, in comparison to students of the same age who had not participated in Reading Recovery. Students’ reading abilities were assessed on performance in oral text reading and the Gates-MacGinitie Reading Tests, which includes scores on comprehension and vocabulary subtests as well as an overall test score.\(^{32}\)

The results of this study showed that a considerable majority of students who had successfully completed Reading Recovery was able to read text at or above their grade level, and at all levels performed roughly as well or better on the task of oral text reading when compared with peers who had not participated in the intervention. Additionally, the majority of former Reading Recovery students performed within the average range for their respective grade levels on the Gates-MacGinitie Reading Test; fourth graders from this group achieved a normal curve distribution with a mean of the 45th percentile on the Indiana State Test of Education Progress (ISTEP), when they had previously performed in the 15-20 percentile range during first grade.\(^{33}\)

**Start Making A Reader Today**

Start Making A Reader Today (SMART) is a volunteer-supported tutoring program that pairs children in grades K-3 with tutors for one-on-one reading sessions lasting 30 minutes, twice a week. Developed by the Oregon Children’s Foundation, the program has been implemented in the classrooms of 100,000 students across the state. Schools qualified for the SMART intervention program (where at least 40 percent of students are eligible for free or reduced priced lunch) work with a coordinator to recruit and train volunteers from among the community, schedule reading sessions, and serve as a primary contact for school personnel.\(^{34}\)

The SMART reading curriculum follows four main reading strategies, outlined in the program handbook: reading to students, reading with students, re-reading, and asking comprehension questions. One study reviewed by the WWC examined the effectiveness of the SMART program on 125 low-performing first grade students from classrooms in six Title I schools across the state of Oregon. Based on the results of this study, WWC considers the intervention to have potentially positive effects.

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on the areas of alphabitics, fluency, and comprehension, although the extent of evidence supporting these effects is small.\(^{35}\)

**Success for All**

Success for All is a school reform model that includes a reading, writing and oral language development intervention for students in pre-kindergarten through eighth grade. In classrooms, Success for All takes the form of daily 90-minute reading periods, during which students meet in class groups of 15 to 20 students performing at the same reading level, regardless of age or grade distinctions. Reading teachers lead each class in literacy activities such as reading books aloud and discussing the story. At the kindergarten and first grade levels, teachers emphasize reading activities that focus on phonemic awareness, auditory discrimination, and sound blending. Teachers of students in grades 2-5 use reading materials provided by the school or district to guide structured, interactive activities in which students read, discuss, and write about the books, particularly focusing on collaborative learning exercises like partner reading.\(^{36}\)

Seven studies of Success for All met research requirements for the WWC database. These studies assessed the program’s effects on 4,000 students between grades K-3 attending 70 elementary schools across the U.S. who received the program for various periods of one to three years in length. The WWC considers this body of evidence to be medium to large for the variables assessed. *Overall, this research found Success for All to have positive effects on alphabitics, mixed effects on comprehension, and potentially positive effects on general reading achievement.*\(^{37}\)

A 2007 broad-based study of Success for All was conducted across 18 schools serving approximately 10,000 children in districts throughout the U.S. During the first year of implementation, the phonetically regular storybooks and instruction employed in kindergarten within Success for All schools produced strong initial advantages on the Word Attack subtest, which measures students’ phonemic awareness. By the third year of the study, at the end of second grade, children’s initial advantages in phonemic awareness held, and additional advantages emerged across the other literacy domains tested. In addition, the improvements in school-wide effects across the first three years of implementation suggest that the program is sufficiently comprehensive to impact all children attending Success for All schools regardless of the number of years they were exposed to the intervention.\(^{38}\)

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37 Ibid.
Section Two: English Language Learner Interventions

As the U.S. immigrant population continues to grow, so does the need for effective teaching of non-English speakers in public schools. These English language learners (ELLs) with varying levels of proficiency in English come from homes in which no English is spoken as well as those where only English is spoken; others have been exposed to or use multiple languages. Comprising more than 10 percent of the total pre-K through twelfth grade public school enrollment and growing at a faster rate than the general school population over the past decade, ELL students are a diverse group that offers challenges and opportunities to U.S. education and to English language arts teachers in particular.\textsuperscript{39}

Compounding the issue is the fact that public schools are under pressure to demonstrate significant increases in student achievement under the Federal No Child Left Behind Act of 2001 (NCLB). Large urban school districts, who primarily serve low income and language minority students, are under more pressure to identify and implement educational programs, especially in reading, that will address the needs of their students. Despite the widespread implementation of literacy programs specifically targeting urban student populations, the absence of research and evaluation documenting the effectiveness of such programs makes it more difficult for districts to select programs that will ensure adequate yearly progress for all students including ELLs.

This lack of high-quality research prompted the IES (of the U.S. Department of Education) to create the What Works Clearinghouse (WWC), a project designed to review studies of instructional intervention effectiveness based on strict criteria for what constitutes scientifically based research in education. Since 2006, WWC has identified 32 interventions for ELLs designed to improve literacy skills. Where applicable, each program report is based on evidence from an exhaustive search of published and unpublished studies, written in English no earlier than 1985, with a focus on students in grades K-6. The effects of an intervention are rated within a given outcome domain by WWC as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative.\textsuperscript{40}

Based on this research, the following programs were found to have a level of positive effect (i.e., positive, potentially positive) on skills predicting later literacy success for ELLs:\textsuperscript{41}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{41} “Interventions for English Language Learners.” WWC, IES. http://ies.ed.gov/ncee/wwc/reports/topicarea.aspx?tid=10
\end{itemize}
\end{footnotesize}
Arthur
- Bilingual Cooperative Integrated Reading and Composition (BCIRC)
- Enhanced Proactive Reading
- Fast ForWord Language
- Instructional Conversations and Literature Logs
- Peer Tutoring and Response Groups
- PALS
- Read Well
- Reading Mastery/SRA/McGraw-Hill
- Success for All
- Vocabulary Improvement Program for English Language Learners and Their Classmates (VIP)

The following other 21 programs were found by WWC to have no studies available that meet its evidence standards or indicate mixed or no discernable effects on skills predicting later literacy success for ELLs:

- Accelerated Reader
- Augmenting Thinking Through Language Acquisition Skills (ATTLAS)
- ClassWide Peer Tutoring
- Cognitive Academic Language Learning Approach (CALLA)
- Curriculum-Based Instruction
- Effective Use of Time
- ESL in the Content Areas
- Front Row Phonics
- Instructional Practices
- Into English
- Learning Centers
- Metacognitive Teaching Approach
- NEARSTar
- On Our Way to English
- Project MASTER
- Read Naturally
- Reading Recovery
- Sheltered Instruction Observation Protocol (SIOP)
- Story Structure Strategies/Story Structure Utilization
- Structured Immersion
- Supplemental Reading Instruction

Note that both groups of interventions above do not address ELLs in middle school and high school. According to researchers in the field, schools face very different

issues in designing instruction for students who enter school when they are young (and often have received no education or minimal instruction in another language or education system) and those who enter in grades 6-12 often are making a transition to another language and another education system. For that reason, we chose to focus on students in the elementary grades. Interventions that we found in recent studies related to ELLs include Reading Recovery, Read Well, Enhanced Proactive Reading, Reading Mastery, Early Interventions in Reading, and Read Naturally. An additional program in the ELL literature not mentioned by WWC is the Waterford Early Reading Program. Program descriptions provided by WWC are highlighted in sidebars in the next subsection.

Recent Studies of ELL Interventions

Research indicates that gaps remain in the knowledge base regarding the long-term effects of interventions for ELLs. Much of the research conducted on programs for ELLs has been comparative, focusing on whether and how children’s first language should be used in an instructional program. In particular, researchers have compared the academic achievement of students with English as a second language who have received classroom instruction in a variety of first and second language settings. Two models have predominated in response to meeting the academic needs of ELLs: instruction only in English (“English-only”) and instruction with some native-language use (often called “bilingual”). Table 1 summarizes these programs.

Table 1: Characteristics of Common Programs for English Language Learners

<table>
<thead>
<tr>
<th>Model and Goal</th>
<th>Program (Typical Names)</th>
<th>Language(s) of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>English-only: Developing literacy in English</td>
<td>English language development</td>
<td>English; students are served in mainstream classrooms with ESL instructional support provided in the classroom by a specialist.</td>
</tr>
<tr>
<td></td>
<td>English as a second language (ESL) pull-out</td>
<td>English adapted to students’ proficiency level, supplemented by gestures, visual aids, manipulatives, etc. First-language (L1) support may be provided separately.</td>
</tr>
</tbody>
</table>

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### Model and Goal

<table>
<thead>
<tr>
<th>Program (Typical Names)</th>
<th>Language(s) of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structured English immersion</td>
<td>All instruction in English, adapted to students’ proficiency levels. L1 support may be provided separately.</td>
</tr>
<tr>
<td>Bilingual immersion</td>
<td>Both English &amp; students’ native language(s), usually throughout elementary school.</td>
</tr>
<tr>
<td>Dual language immersion</td>
<td>Developmental bilingual education</td>
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<tr>
<td>Two-way immersion</td>
<td>Late-exit</td>
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<tr>
<td>Maintenance education</td>
<td>Heritage language</td>
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<tr>
<td>Indigenous language program</td>
<td>Bilingual with transitional support: English acquisition; transfer to English-only classrooms</td>
</tr>
<tr>
<td>Early-exit</td>
<td>Transitional bilingual education</td>
</tr>
<tr>
<td></td>
<td>Both English &amp; students’ native language(s). After transition, no further instruction in L1.</td>
</tr>
</tbody>
</table>

Source: Rivera, M.O., et al. (adapted from National Clearinghouse for English Language Acquisition, 2007)

### Reading Recovery

The effectiveness of Reading Recovery has been tested on ELLs in addition to its effect on beginning reading skills. **(See Section One for a program description.)** No studies of Reading Recovery that fall within the scope of the ELL review protocol meet WWC evidence standards. The lack of studies meeting WWC evidence standards means that, at this time, the WWC is unable to draw any conclusions based on research about the effectiveness or ineffectiveness of Reading Recovery on ELLs, though one such study is highlighted below.\(^{45}\)

In 2000, researchers at New York University (NYU) investigated whether Reading Recovery is effective as an instructional intervention for first graders who are ELLs. The study attempted to replicate research conducted in England in the previous year, the findings of which indicated that both populations of bilingual children receiving either Reading Recovery (instruction delivered in English) or Descubriendo La Lectura (a Spanish reconstruction of Reading Recovery) made progress and reached average levels of classroom literacy performance.\(^{46}\) Similarly, the NYU researchers focused on distinctions in Reading Recovery services and program performance between native and non-native English speakers.

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The data used in the NYU study were drawn from the Reading Recovery Data Sheet, produced by the National Data Evaluation Center at The Ohio State University. Of the total number of 55,875 students in the groups (Reading Recovery, Random Sample, and Comparison), 3,540 were non-native, mostly Spanish, speakers with limited English proficiency. The results of the study showed that that the limited English proficient children were just as successful as their native English-speaking peers. Further analysis of the data demonstrated that language proficiency was not a factor impacting children’s opportunities to complete the program.

Read Well

Read Well is another intervention that has received attention in the literature about ELLs. The program is designed for students in grades K-1. (See sidebar for a program description provided by the WWC.) Concerning ELLs, one study of Read Well that falls within the scope of the review protocol meets WWC evidence standards. This study, which included 34 first-grade ELL students from one school in rural Colorado, examined program impacts on students’ reading and English language development. Based on this one study, the WWC considers the extent of evidence for Read Well on ELLs to be small for both reading achievement and English language development.

In 2003, researchers compared the effectiveness of the Read Well intervention with the reading performance of ELLs who received a tutorial intervention consisting of repeated readings over 11 weeks. The results from that study indicated that ELLs who received the Read Well intervention outperformed those that participated in the other tutorial. Following this study, another group of researchers in 2006 investigated the impact of the Read Well curriculum on the reading comprehension of ELLs, as the prior study showed a faster rate of progress of oral reading fluency for Read Well students but a less clear distinction between ELLs and other students on measures of comprehension.

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48 Ibid., 35
49 “Intervention: Read Well: English Language Learners.” WWC, IES. http://ies.ed.gov/ncee/wwc/reports/english_lang/read_well/
For the 2006 study, the subjects included four second graders who were ELLs. The researchers trained the reading teacher and graduate assistants in the implementation of the Read Well program, who implemented instruction individually with the students and followed all aspects of the program. Receiving an average of 30 minutes of instruction per lesson, the students’ interventions ranged from seven to 14 weeks. Regarding word fluency, all participants demonstrated a higher rate of correct responses on the Oral Reading Fluency (ORF) assessments following the intervention. The Read Well program also resulted in an overall increase in Phonemic Segmentation Fluency (PSF) scores of the participants as well as improved performance on the alphabetic skill measures from pre- to post-intervention. Further, on the Passage Comprehension subtest, scores for two of the three applicable participants increased.

Reading Mastery

In addition to Read Well, the Reading Mastery (also known as Direct Instruction using the Reading Mastery texts or SRA Direct Instruction—Reading Mastery) program has been recently reviewed by ELL researchers. (See sidebar for a program description provided by the WWC.) One study of Reading Mastery for Spanish-speaking ELLs and English-speaking students in grades K-4 in Oregon met the WWC evidence standards. The researchers found that Reading Mastery as a supplemental program had positive effects on the reading achievement of ELLs. Other studies also highlight the program.

In 2008, Canadian researchers studied reading outcomes of struggling readers who were below average in oral language and verbal skills and varied in English as a first language (EFL) versus ELL status. Their study involved 166 children (90 EFL and 76 ELL) ages six to 13 of equivalent levels of underachievement as revealed by a battery of pretests. Children in groups (of four to eight students, based on age and scores on word identification and word attack) were assigned to a phonologically-based remedial reading program or to a special education curricular control condition and received one hour of

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52 Ibid., 110
53 Ibid., 111
intervention daily, four to five days per week.\textsuperscript{56} The reading interventions provided a total of 105 hours of remedial reading instruction using Reading Mastery I/II Fast Cycle or SRA Corrective Reading materials.\textsuperscript{57}

As for the results, \textit{children who had received the research-based interventions were superior at posttest on all measures of instructed content to children who had received special education reading remediation.} In contrast, no significant effects were found for EFL and ELL status when final outcomes were modeled.\textsuperscript{58} Regarding outcomes on standardized tests of reading skill, children in the research-based intervention group were superior at posttest on standardized measures of word attack, phonological processing, and word reading, and demonstrated steeper rates of growth in these domains over the intervention period than did the special education control participants.\textsuperscript{59} ELL struggling readers were not overall inferior to their EFL counterparts on phonological skill.\textsuperscript{60}

Enhanced Proactive Reading

Enhanced Proactive Reading is another comprehensive early reading curriculum emphasizing phonics instruction that has been validated in previous intervention research. (See sidebar for a program description provided by the WWC.) Based on two studies (that met WWC criteria) of students in Texas, Enhanced Proactive Reading was found to have potentially positive effects on reading achievement and no discernible effects on English language development.\textsuperscript{61}

In particular, researchers from two Texas universities examined English and Spanish performance one year after intervention for ELLs who participated in treatment and comparison conditions in either language. Two intervention studies with 215 first graders, each over two cohorts, were conducted at schools with large ELL populations. The researchers assigned students to treatment and control groups, aligning the language of their supplemental instruction with the language of their primary instruction. The students received intervention for one school year in small groups, for 50 minutes each day, as a supplement to their core reading

\textsuperscript{57} Ibid., 339
\textsuperscript{58} Ibid., 342
\textsuperscript{59} Ibid., 346
\textsuperscript{60} Ibid., 348
\textsuperscript{61} “Intervention: Read Well: Enhanced Proactive Reading: English Language Learners.” WWC, IES. http://ies.ed.gov/ncee/wwc/reports/english_lang/epr/
instruction. For the English intervention, Enhanced Proactive Reading was used. An alternate version of the program, Lectura Proactiva, was used for the Spanish intervention, which is similar in terms of instructional design and delivery.

The original findings of these studies revealed that treatment students outperformed similar at-risk students who received typical instruction in assessed domains of phonological awareness, word reading fluency, reading comprehension, and spelling. One year later, the treatment students (with no further intervention since first grade) demonstrated gains through second grade, regardless of whether the intervention was in Spanish or English. Further, no detrimental impact on either language or reading skills was observed in either study, and in no case did comparison students significantly outperform intervention students on any measure, in either language. The researchers noted that despite gains made in reading comprehension, performances were not yet within the average range, even for intervention students, and difficulties for these students may increase as they are expected to read more complex literature.

**Various Programs: Small Group Instruction**

A separate paper by Gersten et al. references studies of Enhanced Proactive Reading, Read Well, and Reading Mastery—all of which have been previously identified in this report—in its recommendations for effective literacy practices for ELLs. Participants in these studies of the three programs in 2002-2006 were ELLs in grades 1-5 with serious reading problems. The research involved daily reading instruction that took between 30 and 50 minutes to implement per day. The interventions also had intensive small-group instruction following the principles of direct and explicit instruction in the core areas of reading. Reading achievement was assessed on a wide range of measures, including word reading, comprehension, and vocabulary.

The studies provide strong evidence that intensive small-group interventions for ELLs should be the primary means of instructional delivery. Specifically, positive achievement outcomes were maintained when students who received the Enhanced Proactive Reading intervention in the first grade were assessed at the end of the second grade. Students in the first grade intervention group read at higher levels than students in the control group one year after the intervention ended. For the Reading Mastery program, the positive reading effect was maintained two years after the intervention ended. Based on the similarities of the three reviewed programs, the authors conclude that other programs also exhibit similar outcomes.

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64 Ibid., 761

65 Ibid., 777

interventions that follow the same principles of direct and explicit instruction to teach core reading elements in small groups are likely to have the same beneficial effects.\textsuperscript{67}

Other studies have emphasized small-group reading instruction for ELLs. In particular, researchers at the University of Kansas conducted a comparison study in 2007 of 170 ELLs and 148 English-only first graders of their growth in measures of early literacy skills through second grade. The investigation included 16 culturally diverse urban and suburban schools over a five-year period.\textsuperscript{68} Comparisons were made for direct instruction interventions for students determined as at-risk for reading failure based on DIBELS screening, including Early Intervention in Reading (see next subsection), Read Well, and Reading Mastery plus Read Naturally (see sidebar\textsuperscript{69}) following the other direct instruction interventions, and English as a Second Language pullout and class groupings using balanced literacy instruction.\textsuperscript{70}

Overall, results from the study indicate positive outcomes for primarily Spanish-speaking ELL students in the experimental schools, and specifically those participating in interventions using curricula with a direct instruction approach and delivered in small groups.\textsuperscript{71} ELLs appeared to benefit from the same early literacy interventions found to be successful with the English-only students, showing that professional development costs and materials may be shared across both at-risk groups. A strong second grade intervention in addition to completion of the first grade programs for participating students was Read Naturally, which was also very effective with ELL students.\textsuperscript{72}

**Early Intervention in Reading**

Separate studies have investigated the use of the Early Intervention in Reading (EIR) program for ELLs. (See Section One for a program description.) Although no studies that meet

\textsuperscript{67} Ibid., 15
\textsuperscript{69} “Intervention: Read Well: Read Naturally: English Language Learners.” WWC, IES. http://ies.ed.gov/ncee/wcc/reports/english_lang/read_naturally/index.asp
\textsuperscript{71} Ibid., 160
\textsuperscript{72} Ibid., 166
WWC evidence standards with or without reservations examined the effectiveness of EIR in the fluency or general reading achievement of ELLs, another recent paper looks at the program in this context.

In 2009, EIR was examined by researchers as a supplemental early reading intervention for the beginning literacy skills of urban ELLs. Eleven of these students selected for inclusion were kindergarteners from three classrooms who were below grade-level reading ability, and the remaining student was a first grader. All of the students were from a low socioeconomic background and received services from the ESL program three times a week for 30 minutes. This reading instruction and regular daily lessons from classroom teachers under the Trophies (and parallel Spanish-language version, Troteos) reading program served as baseline for the study. The Early Intervention in Reading (EIR) curriculum was then introduced as the intervention, with participants receiving instruction for approximately 20-minute sessions two to four times weekly over a period ranging from seven to 15 weeks.

Following the intervention, all of the students showed progress on the DIBELS measures. A functional relationship between EIR instruction and student growth is indicated from the data for PSF. In accordance with prior studies, the improvement in the number of correct segment sounds per minute for some students were immediate and dramatic, while for others the progress was more gradual but eventually resulted in sizeable gains. Similar gains were evident for the nonsense word fluency (NWF) across all ELL groups. Again, the level of improvement varied throughout the intervention, but the students increased their individual performance by at least 11 correct letter sounds per minute. The authors suggest that student results may have been more robust if the study had started earlier in the school year, enabling a longer intervention period.

Waterford Early Reading Program

The Waterford Early Reading Program is another intervention that has not been noted by the WWC to be thoroughly studied for its effects on the reading achievement of ELLs. (See sidebar for a program description provided by the

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74 Ibid., 149
75 Ibid., 150
76 Ibid., 152
77 Ibid., 157
However, one study met the WWC’s evidence standards on beginning reading, with reservations. The single study included more than 70 kindergarten students from six schools in Ohio. For these general students, the WWC considers the extent of evidence for Waterford Early Reading Program to be small for alphabetics and for comprehension. No studies that met WWC evidence standards with or without reservations addressed fluency or general reading achievement.78

Concerning ELLs, a 2009 study explored the design and the findings of a large-scale evaluation of a reading intervention implemented in schools with substantial populations of ELLs in a large urban school district in California. The paper describes the Waterford Early Reading Program, a computer-based literacy curriculum created by the non-profit Waterford Institute, adopted by the Los Angeles Unified School District in 2001 as an in-class supplement to the district’s primary reading program, Open Court.79 The two-year study included 100 kindergarten classrooms and 100 first grade classrooms, of which 50 in each grade were in the treatment group and the other 50 in the comparison group. Two-thirds of the students in both years of the study were ELLs.

*Overall, the two-year evaluation of the Waterford Early Reading Program revealed that the use of the courseware as a supplement to the primary reading program did not help ELL or English-only students make improvements in reading achievement.*80 The researchers note that implementation of the courseware was low. In both years, no differences for kindergarteners were found between the treatment and the comparison group on any of the Woodcock Reading Mastery Tests - Revised (WRMT-R); for first graders, treatment students had larger gains than comparison students in letter identification only.81 Regarding program effectiveness by language classification, the analyses revealed no differences between the kindergarten ELLs in the treatment group and ELLs in the comparison group.82

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80 Ibid., 45-46
81 Ibid., 41
82 Ibid., 42
Section Three: Interventions in Urban Education Settings

Despite the ongoing national debate about improving reading achievement in schools, reading research has produced a limited number of studies of the effects of instructional programs on student achievement scores. At the national level, scores on the National Assessment of Educational Progress (NAEP) have been stagnant in reading and have shown only small gains in math. Urban schools, which enroll a large share of America’s children, also form much of the nation’s achievement gap in education between wealthier suburban districts and poorer inner-city schools with larger populations of poverty-stricken minorities. According to some estimates, city school districts serve 40 percent of the country’s minority students and 30 percent of the economically disadvantaged students. Moreover, research shows:

The majority of students that attend urban schools are from minority families who live below the poverty line. Most often they are from single-parent families where the parent is usually holding more than one job to support the family and so little attention is given to the child. Many students have very few positive role models. Several of their parents have drug or alcohol addictions, are verbally abusive, neglectful and or are school dropouts themselves. Many urban children are also deprived of food on a daily basis and come to school hungry. These children also lack proper health care.

In light of these obstacles for urban students, school districts need to apply successful reform efforts to combat achievement gaps. Concerning literacy, numerous studies of high-performing high-poverty schools have pointed to important building-level factors that must be in place in order for all children to achieve at high levels in reading. Effective schools research shows the factors of building collaboration, professional development, instructional reflection and change, collaborative leadership, and parent partnerships as pertinent to increases in student performance on a range of reading measures. At the classroom level, research has shown that more effective teachers maintained an academic focus, kept a high incidence of pupils on task, and provided direct instruction, included making learning goals clear, asking students questions as part of monitoring their understanding of what was being covered, and providing feedback to students about their academic progress.

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The research we present in the next subsection focuses on reading interventions for students in urban districts. Unlike for our review of ELL interventions in the previous section of this report, the WWC does not categorize evidence of effectiveness of programs, products, practices, and policies that claim to improve student outcomes for urban students. We thus relied on resources such as ProQuest Educational Journals and other publications from education policy groups. Again, we chose to focus on students in the elementary grades because of the research we located for our own survey of literature. Interventions that we found in recent studies related to urban education include Success for All, Read Naturally, Lindamood Phonemic Sequencing, Reading Recovery, Open Court Reading, and Scott Foresman Early Reading Intervention. As before, program descriptions provided by WWC are highlighted in sidebars.

Recent Studies of Urban School Interventions

As recent educational initiatives have emphasized the important role of early reading instruction in the prevention of reading difficulties, current research also has focused on literacy interventions for students who have not responded to primary instruction. Extra attention has been given to urban districts where an alarming racial achievement gap is apparent, evidenced by a recent NAEP report released in November 2010 that says only 12 percent of African-American boys in grade 4 were proficient in reading, compared to 38 percent of their white counterparts.87 One general approach to narrowing the gap that has gained traction over the years is the concept of “balanced literacy,” which emphasizes a balance between (1) reading and writing; (2) teacher-directed and student-centered activities; and (3) phonics-based and reading comprehension approaches.88

Researchers at the University of Kansas studying balanced literacy investigated the use of related reading activities and strategies in an urban school district setting. They used classroom observations, teacher surveys, and other tools to measure each balanced literacy component. At these 32 inner-city elementary schools, the most regularly occurring activity was reading aloud, followed closely by independent reading and independent writing. The researchers also frequently observed balanced literacy strategies, of which conferencing occurred the most. The results of the classroom observations are shown in Table 2, below. Note that 467 observations of 20-minute duration were conducted across 167 classrooms, and activities and strategies could have occurred simultaneously.89

89 Ibid., 275-276
### Table 2: Observed Proportion of Literacy Instruction Time Spent on Balanced Literacy Components

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Balanced Literacy Component</th>
<th>Working Definition</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Independent Writing</td>
<td>Students write independently, in pairs, or in small groups, usually on a topic of their choosing.</td>
<td>.20</td>
</tr>
<tr>
<td></td>
<td>Read Aloud</td>
<td>Teacher reads a copy of the text to a large group of students.</td>
<td>.18</td>
</tr>
<tr>
<td></td>
<td>Independent Reading</td>
<td>Students read a text to themselves without support or instruction.</td>
<td>.17</td>
</tr>
<tr>
<td></td>
<td>Shared Reading</td>
<td>Teacher reads aloud with a large group of students, who either have their own copy of the book or can see the share big book.</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Guided Reading</td>
<td>Teacher supports the development of effective strategies for processing novel texts at increasingly challenging levels of difficulty.</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>(Not applicable.)</td>
<td>.19</td>
</tr>
<tr>
<td><strong>Strategies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conferencing</td>
<td>A time when the teacher and student, or student peers, discuss a goal or assignment in the context of balanced literacy activities.</td>
<td>.34</td>
</tr>
<tr>
<td></td>
<td>Accountable Talk</td>
<td>Talk that reflects or encourages accountability to the learning community, to accurate and appropriate knowledge, and to rigorous thinking.</td>
<td>.18</td>
</tr>
<tr>
<td></td>
<td>Predictions</td>
<td>A teaching strategy in which students are asked to guess what will come later in the text.</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td>Pair and Share</td>
<td>Students divide into pairs and share ideas, answers to questions, or their work.</td>
<td>.03</td>
</tr>
</tbody>
</table>


Consistent with prior research, the researchers found that teachers need to emphasize literacy through regular uninterrupted periods of successful literacy experiences within a positive environment. More specifically, the data indicated that independent student work occurred with higher frequency than did teacher-directed activities. The researchers caution, however, that while individualized work is necessary and efficient as a classroom management technique, teacher-directed instruction is a fundamental aspect of a balanced literacy program. They further suggest that “when a district moves to a mandated literacy program that emphasizes a balance of literacy activities, teachers will need support and encouragement to use a variety of literacy activities and to offer effective instruction within the context of the activity.”

### Reading Recovery

Switching to studies on specific interventions, researchers at the University of London’s Institute of Education (United Kingdom) studied the literacy progress of elementary schools from poor urban settings, comparing Reading Recovery to other interventions.

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91 Ibid., 279
interventions. Published in 2007, their work during the 2005-06 school year evaluated the impact of early literacy intervention for 234 of the lowest-achieving first-grade children in 42 disadvantaged London schools.\textsuperscript{92} All of the students started the year with literacy levels below that of a five year-old. Further, statistical analysis did not indicate any significant difference in word reading and phonic skills means at classroom level between the two sample groups at the beginning of the year.\textsuperscript{93}

Regarding the results, those children who received Reading Recovery achieved significant gains in all assessments compared with those who did not. In schools with Reading Recovery, boys and girls did equally well. At the end of the year the children who had received Reading Recovery had an average reading age of six years seven months, in line with their chronological age. The comparison group was 14 months behind, with an average reading age of five years five months. On literacy, classrooms with Reading Recovery available to the lowest group ended the year with an average reading age 4 months above that of children in comparison classrooms. This difference demonstrates some effect on norms of successfully raising the literacy level of the lowest achieving group of children, but the researchers note that it may also show some impact of Reading Recovery expertise being employed in the classroom, and in other less-intensive interventions matched to differing children’s needs.\textsuperscript{94}

**Success for All**

Prior to the above study, a paper on urban education published in 2000 by researchers at the Harvard Kennedy School considers studies comparing Success for All to matched control groups. Programs like Success for All are designed to reduce the need for special education placements, emphasizing prevention and early intervention rather than remediation or long-term special education.\textsuperscript{95} On reading achievement, one study compared the reading achievement of approximately 6,000 Baltimore students in grades 1-5 (multiple cohorts in each grade over 10 years) at Success for All or control schools using a method called multi-site replicated experiment. They also compared cohort means of follow-up measures of students in grades 6-7 at experimental and control schools.\textsuperscript{96}

The study found statistically significant positive effects of Success for All compared to controls on every measure at every grade level, using the cohort as the unit of analysis. For students in general, mean reading grade equivalents and effect sizes averaged about one-half standard deviation at all grade levels. Effects were somewhat higher than this for the Woodcock Word Attack scale in first and second grades, but in grades 3-5, effect


\textsuperscript{93} Ibid., 27

\textsuperscript{94} Ibid., 43

\textsuperscript{95} Slavin, R.E., and Madden, N.A. Op. cit., 26

\textsuperscript{96} Ibid., 13
sizes were more or less equivalent on all aspects of reading. Consistently, effect sizes for students in the lowest 25 percent of their grades were particularly positive.97 A follow-up study of the experimental and control schools found that similar positive program effects for the full sample of students continued into grades 6-7.

Phono-Graphix & Read Naturally

In 2006, researchers conducted a high-intensity reading intervention study of students in grades 1-3 at four schools in a large urban school district. About half of the students were African American and slightly less than a quarter of them were Hispanic.98 All 27 students demonstrated persistent reading problems, and many of them were defined as inadequate responders to previous quality classroom instruction, and in some cases supplemental interventions. Delivered by six experienced, trained teachers, two eight-week interventions were administered to the students at their home schools but in a setting outside of their usual classrooms: the Phono-Graphix (see sidebar99) program for two 50-minute sessions and Read Naturally program for one hour per day.100 The two interventions focused on decoding, fluency, and comprehension.

Across 16 weeks of interventions, significant improvement was apparent in multiple domains of reading, particularly in fluency. However, many students’ reading ability remained below average after the intervention. Following the eight weeks of Phono-Graphix intervention, the students realized gains in fluency and comprehension. After the Read Naturally phase that emphasized repeated reading, results showed that it had significant effects on the abilities of students to fluently and accurately read words in lists and connected text, but lower gains in reading comprehension during this phase occurred. The researchers surmise that some of the participants would have benefited from more extended decoding intervention before beginning a repeated reading intervention.101

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101 Ibid., 460-462
Lindamood Phoneme Sequencing

A 2002 study in which eight students with severe word recognition difficulties ranging in age from 7 to 17 years received intervention for two hours per day, five days a week for eight weeks using the Lindamood Phoneme Sequencing (LiPS) Program for Reading, Spelling, and Speech (see sidebar102). After intervention, each student’s word reading accuracy scores improved into the average range.103 A separate study published in 2006 of this intervention examined a heavily minority urban school district in Colorado over five years. The researchers focused on Colorado Student Assessment Program (CSAP)—a state-mandated reading comprehension test—results in grades 3-5. With Accelerated Reader as the main supplemental literature program, the 28 schools included in the study had an average minority enrollment of 65 percent.104

The 2006 study integrated a few reading programs by researchers Lindamood and Bell, teaching phonological and phonemic awareness through the LiPS program; sight words and contextual reading through the Seeing Stars program; and vocabulary and comprehension through the visualizing-verbalizing (VV) technique. Another aspect of the intervention was differentiated student grouping according to individual need.105 The results of the analyses across grades 3-5 showed that the treatment group outperformed comparable Colorado schools on CSAP tests, and this was true both for all schools and Title I schools considered separately. The level at which the district outperformed these comparable schools increased over the years of the intervention, but the results could not be attributed to differences in school size of percentage of minority students enrolled.106

Open Court Reading

In 2008, researchers at University of North Carolina at Charlotte provided intensive interventions for first graders at risk for reading failure and compared their progress using DIBELS and

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105 Ibid., 140
106 Ibid., 150
other literacy measures to that of their peers who received only district-guided reading instruction. Six schools in an urban district were selected for the study, four of which received the intervention while the remaining two served as the control group. The treatment group (59 percent male, 57 percent African American) comprised 101 students, and the size of the control group was 38 (68 percent male, 72 percent African American). Open Court Reading (see sidebar\textsuperscript{108}), which includes independent work time (IWT) is the core reading program in all of the selected elementary schools. Students who failed to make adequate progress in the core curriculum received replacement supplemental instruction during the IWT portion of their literacy instruction.

The students in need of this supplemental targeted intervention followed formats and a sequence of skills recommended in Direct Instruction Reading. In small groups or individually, they received 10-15 minutes a day of explicit instruction using lessons incorporating phonemic awareness, alphabetic understanding, decoding, fluency, and sight words (which were the most frequently used ones in the Open Court materials).\textsuperscript{109} The treatment group of students made statistically significant progress on all three grade-based standard scores of WRMT-R, but the control group students only made such progress on one of these measures. The students in the treatment group also made greater improvements in their literacy skills during the first year compared with the control group students. The outcome for NWF was different, with both groups making significant progress during the year.\textsuperscript{110}

Scott Foresman Early Reading Intervention

A 2009 study of at-risk urban kindergarteners investigated the effects of the Scott Foresman Early Reading Intervention (ERI) on growth rates in early literacy skills. Found in previous studies to produce moderate to substantial reading increases, ERI is a supplemental reading program to teach phoneme awareness and alphabetic principle skills (see sidebar on the following page\textsuperscript{111}). Participants were selected from a pool of 58 kindergarten students across four classes in an urban K-5 Title I
school, and the group was reflective of the school’s ethnic composition of 61 percent African American and 37 percent Latino.112 All participants received district-prescribed reading instruction in Open Court for 90 minutes in their respective classrooms and were assigned to one of three groups: treatment-intensive/strategic, treatment-benchmark, and nontreatment-benchmark. The treatment group students received a 30-minute ERI program from classroom teachers three days a week for 5 to 14 weeks.113

Results indicated that DIBELS PSF and NWF benchmark performance gaps decreased between the treatment-intensive/strategic and nontreatment-benchmark groups, indicating beneficial effects for the ERI. Additionally, the treatment-intensive/strategic students greatly improved their PSF and NWF growth rates with statistical significance after the intervention was implemented, and the treatment-intensive/strategic students produced the highest growth rates on both PSF and NWF progress monitoring measures, followed by the treatment-benchmark students, and then the nontreatment-benchmark students.114 The researchers suggest that the combination of the core literacy program (Open Court) and the supplemental reading intervention during the spring semester are responsible for the treatment-intensive/strategic students’ performance.115

Scott Foresman Early Reading Intervention

The Scott Foresman Early Reading Intervention (ERI) is designed to provide at-risk kindergarten and first grade children with an intervention to improve reading achievement. A teacher or teacher assistant delivers 30-minute daily lessons to small groups of 2-5 students. This intervention is comprised of 126 lessons distributed across approximately 30 weeks of instruction.

According to the WWC, no studies of ERI currently meet its evidence standards.

113 Ibid., 17
114 Ibid., 22
115 Ibid., 23
Section Four: Adolescent Literacy Interventions

Reading intervention programs undertaken in elementary school can be helpful tools for establishing a solid literacy foundation on which to build more advanced knowledge. Intervention programs applied in the later years may be equally important to academic success, especially as a means of recovery for struggling students. According to a 2007 report by the National Institute for Literacy, approximately 8.7 million students in grades 4-12 struggle with the reading and writing tasks required of them in school; in fact, many students who drop out of school choose to do so because they experience these academic difficulties.\textsuperscript{116} To prevent dropouts, literacy intervention programs tailored to the more complex tasks required of older students, have increasingly been developed, administered, and studied at middle and high schools across the country.

Again we turn to the IES (of the U.S. Department of Education) for insight on interventions beyond the early reading level judged by the What Works Clearinghouse (WWC). Since 2006, WWC has identified 15 interventions for adolescents designed to improve literacy skills. Where applicable, each program report is based on evidence from an exhaustive search of published and unpublished studies, written in English no earlier than 1985, with a focus on students in grades 4-12. The effects of an intervention are rated within a given outcome domain by WWC as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative.

Based on this research, the following eight programs were found to have a level of positive effect (i.e., positive, potentially positive) on skills predicting later literacy success for adolescents:\textsuperscript{117}

- Cooperative Integrated Reading and Composition (CIRC)
- Fast ForWord
- Project CRISS
- Read 180
- Reading Apprenticeship
- Reading Mastery
- Reading Plus
- SuccessMaker

The following other seven programs were found by WWC to have no studies available that meet its evidence standards or indicate mixed or no discernible effects on skills predicting later literacy success for adolescents:\textsuperscript{118}


\textsuperscript{118} Ibid.
Accelerated Reader
- Advancement Via Individual Determination (AVID)
- Book Clubs
- ClassWide Peer Tutoring
- Concept-Oriented Reading Instruction (CORI)
- Corrective Reading
- Reciprocal Teaching

**Effective Adolescent Literacy Intervention Programs**

The Alliance for Excellent Education (AEE) has been influential in shaping discussions on adolescent literacy. A 2006 report by AEE for the Carnegie Corporation of New York cautions that much of the attention on reading has been directed towards early literacy and argues that more must be done to ensure adequate ongoing literacy development for all students in the middle and high school years. The authors also acknowledge that “we do not yet possess an overall strategy for directing and coordinating remedial tools for the maximum benefit to [older] students at risk of academic failure, nor do we know enough about how current programs and approaches can be most effectively combined.”

Table 3 delineates their suggested 15 elements aimed at improving middle and high school literacy achievement.

<table>
<thead>
<tr>
<th>Type</th>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional</td>
<td>Direct, explicit comprehension instruction</td>
<td>Instruction in the strategies and processes that proficient readers use to understand what they read, including summarizing, keeping track of one’s own understanding, and a host of other practices</td>
</tr>
<tr>
<td>Improvement</td>
<td>Effective instructional principles embedded in content</td>
<td>Language arts teachers using content-area texts and content-area teachers providing instruction and practice in reading and writing skills specific to their subject area</td>
</tr>
<tr>
<td></td>
<td>Motivation and self-directed learning</td>
<td>Building motivation to read and learn and providing students with the instruction and supports needed for independent learning tasks they will face after graduation</td>
</tr>
<tr>
<td></td>
<td>Text-based collaborative learning</td>
<td>Students interacting with one another around a variety of texts</td>
</tr>
<tr>
<td></td>
<td>Strategic tutoring</td>
<td>Providing students with intense individualized reading, writing, and content instruction as needed</td>
</tr>
<tr>
<td></td>
<td>Diverse texts</td>
<td>Texts at a variety of difficulty levels and on a variety of topics</td>
</tr>
</tbody>
</table>

120 Ibid., 4-5
Below are the profiles of literacy intervention programs that have shown positive effects in various reading skill areas on students at the intermediate and secondary levels. An overview of the literature on each program cited by WWC is presented, followed by other available relevant research, if any.

**Cooperative Integrated Reading and Composition**

Cooperative Integrated Reading and Composition (CIRC) is a reading and writing program for students in grades 2-6. It has three principal elements: story-related activities, direct instruction in reading comprehension, and integrated language arts/writing. Daily lessons provide students with an opportunity to practice comprehension and reading skills in pairs and small groups. Pairs of students read to each other; predict how stories will end; summarize stories; write responses to questions posed by the teacher; and practice spelling, decoding, and vocabulary. Within cooperative teams of four, students work to understand the main idea of a story and work through the writing activities linked to the story. A Spanish version of the program is available for grades 2-5.121

Two studies in the mid-1990s that meet WWC evidence standards found that the program resulted in medium to large gains for adolescent learners in the literacy skill areas of

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comprehension and general literacy achievement. The two studies included approximately 1,460 students in grades 2-6 who attended nine schools located in two school districts in the U.S. No studies that meet WWC evidence standards examined the effectiveness of CIRC on adolescent learners in the alphabatics or reading fluency domains.122

**Fast ForWord**

Fast ForWord is a computer-based reading program intended to help students develop and strengthen the cognitive skills necessary for successful reading and learning. The program, which is designed to be used 30 to 100 minutes a day, five days a week, for 4 to 16 weeks, includes the following two components:123

- **Fast ForWord Language and Literacy** series aims to build cognitive skills such as memory, attention, processing, and sequencing, as well as language and reading skills, including listening accuracy, phonological awareness, and knowledge of language structures.

- **Fast ForWord to Reading** series aims to increase processing efficiency and further improve reading skills such as sound-letter associations, phonological awareness, word recognition, knowledge of English language conventions, vocabulary, and comprehension.

Several WWC studies on adolescent literacy show *small evidence for Fast ForWord on students’ gains in alphabatics and reading fluency and medium to large gains for the comprehension and general literacy achievement domains*. Eight studies included about 2,000 students, ranging in age from 5 to 17, who attended elementary, middle, and high schools in Indiana, Maryland, North Carolina, Ohio, Pennsylvania, Virginia, and an urban district in the northeastern U.S. as well as Australia.124 Six of these studies focused on comprehension, one of which showed statistically significant positive effects, two studies showed substantively important positive effects, and three studies showed indeterminate effects. Regarding general literacy achievement, five of the studies showed indeterminate effects on adolescent students.125

**Project CRISS**

Project CRISS (Creating Independence through Student-owned Strategies) is a professional development program for teachers of third through twelfth grade students that aims to improve literacy instruction and learning. This intervention involves the encouragement of three main student behaviors in the classroom:

124 Ibid., 2
125 Ibid., 5-6
(1) students monitoring their learning to assess when they have understood content; (2) students integrating new information with prior knowledge; and (3) students being actively involved in the learning process through discussing, writing, organizing information, and analyzing the structure of text to help improve comprehension. According to the program developers, Project CRISS has been used across curricula in math, science, social studies, language arts, fine arts and technology in elementary, middle and high school classrooms.126

In Project CRISS, teachers model literacy strategies for students and provide time for guided practice to help students understand their own learning processes and transfer strategies to independent learning situations. Teachers integrate the CRISS Strategic Learning Plan, introduced to them through training, into regular classroom instruction through the use of comprehension strategies applied to course content. Students are then encouraged to independently apply these strategies to content they encounter, to learn when and how to apply the strategies and to discover which strategies work best for them. Project CRISS trains teachers to help their students interact with content, understand patterns and structures of text, engage actively in the learning process, write reports and essays, and learn new vocabulary.127

WWC reviewed two studies of the implementation of Project CRISS in classrooms of 2,569 fourth to sixth grade students across the U.S. The resource considers this body of evidence to be medium to large for the variables tested, which include comprehension. Project CRISS was found to have potentially positive effects on comprehension.128

Read 180

Developed in 1994 by Scholastic, Read 180 is a year-long literacy intervention program designed for students in elementary through high school who demonstrate reading achievement that is below grade level. The program is designed as a supplementary reading curriculum delivered through a computer program, literature, workbooks, audiobooks and CDs, and direct instruction in reading skills. Read 180 is one of the most commonly used intervention programs, and has been implemented in over 10,000 classrooms in all 50 states since its development in 1999.129

Students in Read 180 participate in 90-minute sessions, each containing 20 minutes of whole-group direct instruction, 60 minutes of small-group rotations, and a 10 minute wrap-up as a whole class. Small group rotations can involve use of independent activities, such as using the program software or engaging in independent reading.

128 Ibid., 2
using print books and/or audiobooks. The Read 180 software is designed to adjust to students’ abilities based on their performance. The software also allows teachers to monitor student progress, by producing reports and periodic progress updates. Teachers of the Read 180 program complete training consisting of a one-day leadership orientation, two days of in-service training upon implementation of the program, an online course, eight half-day seminars, and reading courses provided within the software package.

A large number of research studies have tested the effectiveness of the Read 180 program, likely because of its current prevalence in U.S. schools. A comprehensive report on adolescent literacy intervention programs produced by LearningPoint Associates summarizes a handful of studies focusing on the impact of Read 180 on student performance on standardized exams. This document reports that in studies of middle and high schools in Los Angeles, Boston, Dallas, Houston, Columbus and Orange County (California), students in the Read 180 program demonstrated higher than expected score gains on Scholastic Reading Inventory Lexile Framework exams; significant score gains (compared to non-Read 180 students) on the Stanford Achievement Test, ninth edition; and significant gains in achievement on other assessment measures when compared to a cohort of control students.

Additionally, WWC reviewed seven studies of the effectiveness of Read 180 on 10,638 students between the fourth and ninth grades across seven different states. The WWC considers this extent of evidence to be medium to large. Overall, the studies support outcomes of potentially positive effects of Read 180 on both comprehension and general literacy achievement.

**Reading Apprenticeship**

The Reading Apprenticeship literacy intervention program is based on an instructional approach that requires teachers to assume the role of expert reader in a classroom in order to model and guide text-based problem solving and develop comprehension, self-monitoring and recovery strategies among students. In addition to its use across a range of content areas in middle and high school, Reading Apprenticeship has been implemented in several community college classrooms since 2005. This program has been used in classrooms of struggling readers, English language learners and special education students, as well as students in honors or advanced placement classes.

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133 Ibid., 2-3
The Reading Apprenticeship program aims to improve students’ reading skills by guiding them, through a teacher’s instruction, to examine their own reading strategies as well as those of their teacher and peers, and to subsequently develop effective strategies for reading and comprehending the different course material they are given in class. This process is facilitated by small group and full classroom conversations, and personal reflection, on the cognitive process behind reading. Through these conversations, teachers of Reading Apprenticeship integrate four dimensions of classroom life into subject area teaching:¹³⁵

- **Social:** Using students’ interests in social interaction to create a safe, collaborative learning environment in which to discuss academic texts;
- **Personal:** Drawing on skills used by students in settings out of the classroom as well as students’ personal interests, identities as readers and personal goals for reading;
- **Cognitive:** Involving developing readers’ mental processes such as comprehension and problem-solving; and
- **Knowledge-building:** Including identifying and expanding the knowledge students bring to a text, such as word construction, vocabulary, text structure, genre, language and content.

One study involving over 2,000 ninth graders across the U.S. studying under the Reading Apprenticeship intervention program was reviewed by the WWC, comprising a small body of evidence for this research. Based on this study, Reading Apprenticeship was found to have potentially positive effects on comprehension.¹³⁶

**Reading Mastery**

*(See sidebar on page 19 of this report for a description of this program.*) Based on two studies of 361 students in grades 4-5, the WWC considers the extent of evidence for Reading Mastery on adolescent learners to be small for the reading fluency and comprehension domains. No studies that meet WWC evidence standards examined the effectiveness of Reading Mastery on adolescent learners in alphabets or general literacy achievement.¹³⁷

**Reading Plus**

Reading Plus is a web-based reading intervention that uses technology to provide individualized scaffolded silent reading practice for students in grade 3 and higher. Reading Plus aims to develop and improve students’ silent reading fluency,

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¹³⁶ Ibid.
comprehension, and vocabulary. Reading Plus is designed to adjust the difficulty of the content and duration of reading activities so that students proceed at a pace that corresponds to their reading skill level. The intervention includes differentiated reading activities, computer-based reading assessments, tools to monitor student progress, ongoing implementation support, and supplemental offline activities.\textsuperscript{138}

One study of Reading Plus that falls within the scope of the adolescent literacy review protocol meets WWC evidence standards with reservations. The study included 13,128 students, ranging from grades 5-9, who attended schools in Miami-Dade County in Florida. Based on this study, the WWC considers the extent of evidence for Reading Plus on adolescent learners to be small for the comprehension domain. The one study that meets WWC evidence standards with reservations did not examine the effectiveness of Reading Plus on adolescent learners in the alphabatics, reading fluency, or general literacy achievement domains.\textsuperscript{139}

**SuccessMaker**

SuccessMaker is a set of computer-based courses that aims to improve essential reading skills such as phonological awareness, phonics, fluency, vocabulary, comprehension and concepts of print. Students use the computer program to complete lessons that tailor to their ability level within two sets of courses: “Foundations,” which help students develop and maintain reading levels, and “Exploreware,” which provide opportunities for exploration, open-ended instruction and development of analytical skills. SuccessMaker is designed to supplement regular reading instruction curriculum in classrooms of students in grades K-8.\textsuperscript{140}

The WWC reviewed three studies of the effects of SuccessMaker on 450 students between the ages of nine and 16 (in grades 4-10) in Alabama, Illinois, and Virginia. Based on these studies, considered a small set of evidence by WWC, SuccessMaker was found to have potentially positive effects on both comprehension and general literacy achievement, and no discernible effects on alphabatics and reading fluency.\textsuperscript{141}

\textsuperscript{139} Ibid., 1
\textsuperscript{141} Ibid., 2
Project Evaluation Form

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