



FAST FACT: Evidence of Effective Early Literacy Models

INFORMATION REQUEST

This state was seeking information about the evidence that exists for effective early literacy models. The questions posed were:

1. What does the research say about effective approaches to support early literacy?
2. What additional resources are available that the state can use to support districts' use of evidence-based models and approaches?

State's Goal

The information was needed by the state so it could support districts use of effective models and approaches to improve children's early literacy outcomes.

Background and Context

The Regional Comprehensive Center and CEELO met with the state education agency early childhood specialist coordinate technical assistance to the state. During the meeting, the Regional Comprehensive Center agreed to work with the early childhood specialist to convene stakeholders from each region throughout the state to articulate priority needs in the areas of early literacy and numeracy. CEELO agreed to provide the group with information and resources regarding the evidence of effective early literacy and numeracy models and approaches.

Response

CEELO staff reviewed key research including the National Early Literacy Panel (NELP) publications, information from the What Works Clearinghouse obtained by the Regional Education Lab and by CEELO staff, and through a review research obtained by the Council of Chief State School Officers (CCSSO) and the National Institute for Early Education Research (NIEER).

What We Know – Early Literacy Interventions

NELP Findings. A definitive study released in 2009 reviewed the evidence regarding early literacy outcomes from rigorous research studies and found that six key skills predict later literacy development:

- Alphabet knowledge
- Writing or writing name
- Rapid automatic naming of letters or digits
- Rapid automatic naming of objects or colors
- Phonological awareness
- Phonological memory

The report also suggests that some other skills are important for literacy:

- Concepts of print
- Print knowledge
- Reading readiness
- Oral language and visual processing

Figure 1 below provides an explanation of these skills and Figure 2 provides suggestions from early childhood professions about how teachers can best support children’s acquisition of these skills.

Figure 1. What Early Literacy Development Looks Like¹

Skills, as defined in the National Early Literacy Panel Report (2010, p. vii)	What we see when we observe young children who have this skill		
	Children developing this skill might...	Children who have initial acquisition of this skill might...	Children who have mastered this skill might...
Alphabet knowledge: “Knowledge of the names and sounds associated with printed letters.”	Say “ABC.” Sing “ABC ELMO P.” Tell you “ACDG.”	Sing “A, B, C, D, E, F, G, J, K, M, B, G, S, T, V, X, Y, Z.” Say “ABC...JKL,WXYYZ.”	Say the alphabet easily, with no mistakes, and no prompts.
Writing or writing own name: “The ability to write letters in isolation on request or to write one’s own name.”	Draw circles and loops signifying letters in their name or letters that they associate with objects. Put letter magnets or letter blocks in order that signifies names or letters.	Draw the initial letter in his or her name, parts of his or her name with some creative interpretation of the letters. Put alphabet letters in order.	Write full words with minimal errors in letter formation.
Rapid automatic naming (RAN) of letters or digits: “The ability to rapidly name a sequence of random letters or digits.”	Repeat some numbers or letters.	Repeat a list of letters or digits slowly or with occasional errors.	Repeat letters, numbers, or digits quickly, with ease and with minimal errors.
Rapid automatic naming of objects or colors: “The ability to rapidly name a sequence of repeating random sets of pictures of objects (e.g., ‘car,’ ‘tree,’ ‘house,’ ‘man’) or colors.”	Name some objects or some colors. Calls all colors “yellow” or might correctly identify one single color.	Correctly identify objects and a range of colors.	Correctly identify colors in the rainbow or a wider color palate (periwinkle, chartreuse, or turquoise). Demonstrate a rich vocabulary of objects.
Phonological awareness: “The ability to detect, manipulate, or analyze components of spoken words independent of meaning.”	Rhyme when asked which words start with the same letter.	Tell you the initial sound of their names and tell you words that rhyme or words that start with the same sound or with the same letter.	Correctly identify the sounds associated with individual letters of the alphabet and come up with words that rhyme on their own: cat, bat, sat, hat.
Phonological memory: “The ability to remember spoken information for a short period of time.”	Repeat some nonsense words.	Respond “you!” after hearing a teacher say “Willaby, wallaby, woo, the elephant sat on. . . .”	Fill in more complicated words or names after hearing nonsense rhymes. For example, after hearing “Willaby wallaby wiris the elephant sat on . . .” the child might respond “Iris”—anticipating the name of the child that rhymes.

¹ Sources: Broadstone, M. & Schilder, D. (2011). *Translating literacy research into best practice: Expert advice from early childhood professionals*. Waltham, MA: Education Development Center, Inc.; Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH, DHHS. (2010). *Early beginnings: Early literacy knowledge and instruction (A guide for early childhood administrators & professional development providers)* (NA). Washington, DC: U.S. Government Printing Office. Retrieved from: <http://lincs.ed.gov/publications/pdf/NELPEarlyBeginnings09.pdf>

Figure 2. Supporting Early Literacy—Do’s and Don’ts²

To Support Children’s Acquisition of Skills	Do This	Don’t Do
Alphabet Knowledge	Look for letters in the context of other activities. For example, on a walk look for print and symbols on signs When reading a book, point out letters on the page and talk about the sounds of the letters.	Have a “Letter of the Day” or “Letter of the Week” (because it isolates letters). Put things on the wall (like a letter chart) that are not at the child’s eye level or on high shelf (like a letter puzzle) that children cannot readily access. Teachers need to engage the children with the materials.
Writing	Use writing as part of the daily routine—like daily sign-in sheets. Introduce writing into dramatic play areas: invoices, shopping lists, recipes. Model writing and children will become interested. Use different materials to create letters: finger paints, Play-Doh, sand, and string. Have children help make labels for the classroom. Work on fine motor skills in general.	Require children to copy text on worksheets or copy text written on a whiteboard.
RAN Letters Objects	Use play as a vehicle—name props children use in imaginary play, point to pictures in a book. Make transition time fun and educational by pointing out objects when children are lining up. Play name recognition games.	Drill with flashcards.
Phonological awareness	Play nonsense rhyming games so children can focus on sounds without worrying about word meaning. Use lots of songs and games that play with language. Have different rhythms in read-aloud books. Provide listening centers and listening walks to introduce a variety of auditory experiences.	Skill and drill for letters, such as “Bee, Ba, ba, ba, ba, ba. . .”
Phonological memory	Reread favorite stories and by the end of the week children will be able to “read” the story to the teacher. Give children one or two-step directions: “Pick up your napkin and put it in the trashcan.”	Use “Repeat after me” activities. Test children on rote memorization. Overload children with too much information.

What Works Clearinghouse Findings

The *What Works Clearinghouse*, an initiative of the Institute for Education Sciences (IES) at the U.S. Department of Education, identifies studies that provide credible and reliable evidence of the effectiveness of a given practice, program, or policy (referred to as “interventions”). CEELo searched the WWC database and found 12 interventions with positive evidence that have been reviewed since 2008. A summary of the findings and a brief description of each intervention is presented below.

- **Accelerated Reader** was found to have no discernible effects on reading fluency, mixed effects on comprehension, and potentially positive effects on general reading achievement. The Accelerated Reader program is a guided reading intervention in which teachers are closely involved with student reading of text. It involves two components, the Accelerated Reader software and Accelerated Reader Best Classroom Practices (formerly called Reading Renaissance). The Accelerated Reader software is a computerized supplementary reading program. Accelerated Reader relies on independent reading practice as a way of managing student performance by providing students and

² Source: Broadstone, M. & Schilder, D. (2011). *Translating Literacy Research into Best Practice: Expert Advice from Early Childhood Professionals*. Waltham, MA: Education Development Center, Inc.

teachers feedback from quizzes based on books the students read. Accelerated Reader Best Classroom Practices are a set of recommended principles on guided independent reading (or teachers' direction of students' interactions with text) that ensure Accelerated Reader is implemented with integrity.

http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_accelreader_101408.pdf

- **Cooperative Integrated Reading and Composition®** was found to have potentially positive effects on comprehension and no discernible effects on general reading achievement for beginning readers. 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.
http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_circ_062612.pdf
- **Earobics®** was found to have positive effects on alphabets and potentially positive effects on reading fluency. Earobics® is interactive software that provides students in pre-K through third grade with individual, systematic instruction in early literacy skills as students interact with animated characters. Earobics® Foundations is the version for prekindergarten, kindergarten, and first grade. Earobics® Connections is for second and third graders and older struggling readers. The program builds children's skills in phonemic awareness, auditory processing, and phonics, as well as the cognitive and language skills required for comprehension. Each level of instruction addresses recognizing and blending sounds, rhyming, and discriminating phonemes within words, adjusting to each student's ability level. The software is supported by music, audiocassettes, and videotapes and includes picture/word cards, letter-sound decks, big books, little books, and leveled readers for reading independently or in groups.
http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_earobics_011309.pdf
- **Early Intervention in Reading (EIR)®** was found to have potentially positive effects on alphabets and comprehension. EIR® is a program designed to provide extra instruction to groups of students at risk of failing to learn to read. The program uses picture books to stress instruction in phonemic awareness, phonics, and contextual analysis, along with repeated reading and writing. In grades K, 1, and 2, the program is based on whole-class instruction, with additional small group instruction provided to struggling readers. In grades 3 and 4, the program consists of small group instruction for 20 minutes, four days a week. Teachers are trained for nine months using workshops and an Internet-based professional development program.
http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_eir_112508.pdf

- **Fast ForWord®** was found to have positive effects on alphabets, no discernible effects on reading fluency, and mixed effects on comprehension for beginning readers. 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 30–100 minutes a day, 5 days a week, for 4–16 weeks, includes three series. The Fast ForWord® Language series and the Fast ForWord® Literacy series aim to build cognitive skills such as memory, attention, processing, and sequencing. They also strive to build language and reading skills, including listening accuracy, phonological awareness, and knowledge of language structures. The Fast ForWord® to Reading series (also known as the Fast ForWord® 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. The program is designed to adapt the nature and difficulty of the content based on individual student’s responses.

http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_ffw_031913.pdf
- **Lexia Reading** was found to have potentially positive effects on alphabets, no discernible effects on fluency, potentially positive effects on comprehension, and no discernible effects on general reading achievement. Lexia Reading is a computerized reading program that provides phonics instruction and gives students independent practice in basic reading skills. Lexia Reading is designed to supplement regular classroom instruction. It is designed to support skill development in the five areas of reading instruction identified by the National Reading Panel.

http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_lexia_063009.pdf
- **The Lindamood Phonemic Sequencing (LiPS)®** program was found to have potentially positive effects on alphabets and no discernible effects on comprehension. Findings on fluency and general reading achievement were not reported in the study. The Lindamood Phonemic Sequencing (LiPS)® program (formerly called the Auditory Discrimination in Depth® [ADD] program) is designed to teach students skills to decode words and to identify individual sounds and blends in words. Initial activities engage students in discovering the lip, tongue, and mouth actions needed to produce specific sounds. After students are able to produce, label, and organize the sounds, subsequent activities in sequencing, reading, and spelling use the oral aspects of sounds to identify and order them within words. The program also offers direct instruction in letter patterns, sight words, and context clues in reading. The LiPS® program is individualized to meet students’ needs and is often used with students who have learning disabilities or reading difficulties. The version of the program tested here involved computer-supported activities.

http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_lindamood_121608.pdf
- **Read Naturally®** was found to have potentially positive effects on general reading achievement, mixed effects on reading fluency, and no discernible effects on alphabets and comprehension for beginning readers. The Read Naturally® program is a supplemental reading program that aims to

improve reading fluency, accuracy, and comprehension of students in elementary, middle, or high school or adults using a combination of texts, audio CDs, and computer software. The program uses one of four products that share a common fluency-building strategy: Read Naturally® Masters Edition, Read Naturally® Encore, Read Naturally® Software Edition, and Read Naturally® Live. The common strategy includes: modeling of story reading, repeated reading of text for developing oral reading fluency, and systematic monitoring of student progress by teachers and the students themselves. Students work at their reading level, progress through the program at their own rate, and work (for the most part) on an independent basis. The program can be delivered in three ways: (1) students use audio CDs with hard-copy reading materials (Read Naturally® Masters, Read Naturally® Encore), (2) students use the computer-based version (Read Naturally® Software Edition), or (3) students use the web-based version (Read Naturally® Live). This intervention report includes studies of Read Naturally® Masters Edition and Read Naturally® Software Edition.

http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_readnaturally_070913.pdf

- **Peer Assisted Learning Strategies (PALS)** was found to have potentially positive effects on alphabets, no discernible effects on fluency, and mixed effects on comprehension for beginning readers. Peer-Assisted Learning Strategies and a similar program known as Peer-Assisted Literacy Strategies are peer-tutoring programs that supplement the primary reading curriculum (Fuchs, Fuchs, Kazdan, & Allen, 1999; Mathes & Babyak, 2001). This review uses the acronym PALS to encompass both programs and their respective full names when referring to a specific program. Students in PALS classrooms work in pairs on reading activities intended to improve reading accuracy, fluency, and comprehension. Students in the pairs—who alternately take on the role of tutor and tutee—read aloud, listen to their partner read, and provide feedback during various structured activities. Teachers train students to use the following learning strategies: passage reading with partners, paragraph “shrinking” (or describing the main idea), and prediction relay (predicting what is likely to happen next in the passage). PALS includes separate versions for kindergarten and grade. Peer-Assisted Learning Strategies also includes versions for grades 2–3 (which are part of a larger set produced for grades 2–6).

http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_pals_050112.pdf

- **Reading Recovery®** was found to have positive effects on general reading achievement and potentially positive effects on alphabets, reading fluency, and comprehension for beginning readers. Reading Recovery® is a short-term intervention that provides one-on-one tutoring to first-grade students who are struggling in reading and writing. The supplementary program aims to promote literacy skills and foster the development of reading and writing strategies by tailoring individualized lessons to each student. Tutoring is delivered by trained Reading Recovery® teachers in daily 30 minute pullout sessions over the course of 12–20 weeks.

http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_readrecovery_071613.pdf

- **Sound Partners** was found to have positive effects on alphabets, fluency, and comprehension and no discernible effects on general reading achievement on beginning readers. Sound Partners (Vadasy et al., 2004) is a phonics-based tutoring program that provides supplemental reading instruction to elementary school students grades K–3 with below average reading skills. The program is designed specifically for use by tutors with minimal training and experience. Instruction emphasizes letter-sound correspondences, phoneme blending, decoding and encoding phonetically regular words, and reading irregular high-frequency words, with oral reading to practice applying phonics skills in text. The program consists of a set of scripted lessons in alphabetic and phonics skills and uses Bob Books® beginning reading series as one of the primary texts for oral reading practice. The tutoring can be provided as a pullout or after-school program, as well as by parents who home school their children.

http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_soundpartners_092110.pdf

- **Success for All®** was found to have positive effects on alphabets, mixed effects for comprehension, and potentially positive effects on general reading achievement. Success for All (SFA)® is a whole-school reform model that includes a reading, writing, and oral language development program for students in prekindergarten through eighth grade. Classroom reading instruction is delivered in daily 90-minute blocks to students grouped by reading ability. Immediate intervention with tutors who are certified teachers is given each day to those students who are having difficulty reading at the same level as their classmates.

http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_sfa_081109.pdf

A number of literacy interventions exist that do not currently have published research evidence that demonstrate they are effective based on WWC evidence standards. These programs might have such published studies in the future. 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 the following on beginning readers. The following interventions lack such evidence:

- *Invitations to Literacy*, is an integrated K–8 reading and language arts program. The philosophy behind the program is that literacy instruction should stimulate, teach, and extend the communication and thinking skills that will allow students to become effective readers, writers, communicators, and lifelong learners. The program is structured around themes. It includes hands-on activities that allow students to collaborate or share information on a theme-related project with other classrooms around the world (for example, participating in a collaborative poem-writing exercise) and virtual field trips to Internet sites that have content, activities, and projects related to the theme.
- *Reading Mastery*, one of several curriculum components that constitute the Direct Instruction program designed to provide systematic instruction in reading to students in grades K–6. Reading Mastery, is used as an intervention program for struggling readers, as a supplement to a core reading program, or as a stand-alone reading program. The WWC review of Reading Mastery for Beginning Reading focused on students in grades K–3.

- The Spalding Method®, a language arts program for grades K–6 that uses explicit, integrated instruction and multisensory techniques to teach spelling, writing, and reading.
- *Words Their Way™* an approach to phonics, vocabulary, and spelling instruction for students in kindergarten through high school. The WWC review of Words Their Way™ for the Beginning Reading topic area focused on reading outcomes of students in grades K–3.

Teacher and Teacher Leader Guides

The What Works Clearinghouse has produced a number of guides to support teachers and teacher leaders with the implementation of evidence-based approaches. Three that were reviewed are summarized below.

- **Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades.** Summary: This guide offers five specific recommendations to help educators identify struggling readers and implement evidence-based strategies to promote their reading achievement. Recommendations cover how to screen students for reading problems, design a multi-tier intervention program, adjust instruction to help struggling readers, and monitor student progress.
http://ies.ed.gov/ncee/wwc/pdf/practice_guides/rti_reading_pg_021809.pdf
- **Improving Reading Comprehension in Kindergarten Through 3rd Grade.** Summary: students who read with understanding at an early age gain access to a broader range of texts, knowledge, and educational opportunities, making early reading comprehension instruction particularly critical. This guide recommends five specific steps that teachers, reading coaches, and principals can take to successfully improve reading comprehension for young readers. The five strategies are as follows: 1. Teach students how to use reading; 2. Teach students to identify and use the text’s organizational structure to comprehend, learn, and remember content; 3. Guide students through focused, high-quality discussion on the meaning of text; 4. Select texts purposefully to support comprehension development; and 5. Establish an engaging and motivating context in which to teach reading comprehension
http://ies.ed.gov/ncee/wwc/pdf/practice_guides/readingcomp_pg_092810.pdf
- **Response to Intervention (RtI) in Early Reading and Mathematics: Moving Evidence on What Works into Practice.** Summary: a panel of researchers, policy specialists, and practitioners discuss their experiences with RtI in math and reading and the recommendations included in the WWC practice guides: Assisting Students Struggling with Mathematics and Assisting Students Struggling with Reading. <http://ies.ed.gov/ncee/wwc/multimedia.aspx?sid=4>

Resources and Links

The following organizations have additional resources on early literacy.

- Center for Early Literacy Learning: <http://www.earlyliteracylearning.org>
- Early Childhood Technical Assistance Center: <http://ectacenter.org/topics/literacy/literacy.asp>
- International Reading Association: <http://www.reading.org>

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