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Instruction for Elementary Students With Learning Disabilities

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Instruction for Elementary Students With Learning Disabilities

By

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Abstract

In this starred paper, I examine three reading instruction models for elementary students with learning disabilities: 95 Phonics Core Program, PRESS, and Heggerty Phonemic Awareness. I analyzed data from earlier research and found that these instruction models help elementary students with learning disabilities increase their reading ability. LETRS professional development training was reviewed since school districts in Minnesota are required to revamp their literacy instruction.

Acknowledgements

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Chapter I: Introduction

The Science of Reading's body of research over five decades informs us how students learn to read, how to intervene when students are not successful in reading, and what kind of instruction works best for most students. According to the National Center for Education Statistics (2023), approximately one-third (32%) of fourth-grade students performed below Basic levels of reading in 2017. This fact makes it a priority to help students succeed in reading. In the Science of Reading research, two theoretical frameworks guide the research methods to collect data to help lead instruction (The Reading League [TRL], 2022). According to The Science of Reading: Defining Guide, the first framework is The Simple View of Reading. The framework has been supported by hundreds of researchers and studies. Students need to be strong in both word recognition and language comprehension to successfully achieve reading, if either one is weak reading comprehension suffers (TRL, 2022). Hollis Scarborough, a prominent leader in the field of literacy, states the importance of reading sub-scales are interdependent with obtaining language comprehension, comprehension, and word recognition (*Scarborough's reading rope: A groundbreaking infographic,* 2018). To illustrate this, she created a Reading Rope visual in 2001 (*Scarborough's Reading Rope,* n.d). The visual shows how a weakness in one area not only weakens that strand of the rope but also weakens all of the rope. This affects the student's ability to be a skilled reader. Our brains are not wired to learn reading, unlike speaking. teaching young children to read and write, instructions need to be based on the sound science of reading research (Harpps, 2023).

The second theoretical framework uses a Muli-Tiered Systems of Support (MTSS) as a school-wide method to provide effective instruction (TRL, 2022). MTSS can effectively target instruction to student needs through universal screening and diagnostic assessments. This

decision-making process provides tailored instructional targets to the needs of the students. The MTSS framework is a comprehensive system where nonproductive practices are abandoned and successful practices are implemented.

Research Question

The review of the literature is guided by the following research question: How do select intervention curricula support reading development for students with specific learning disabilities?

Focus of Research

Over 7.3 million students in America receive special education services (Press // Implementing Press, n.d). Of these students, over a third of them have a Specific Learning Disability (SLD), (Press // Implementing Press, n.d). Finding research-based interventions is imperative to help students develop reading skills and acquisition. The elementary reading curricula should focus on phonemic awareness, phonics, fluency, vocabulary, and comprehension (*A full breakdown of the science of reading components,* 2023). These skills are important to learning and becoming a productive citizen. In this paper, I will provide an overview a professional teacher training in literacy course aligned with the science of reading and three current reading curriculum/programs that address elements of reading instruction (phonemic awareness, phonics, fluency, vocabulary, comprehension).

Language Essential for Teachers of Reading and Spelling (LETRS), the teacher training course, was included in this review because this training is being taught to teachers throughout Minnesota as part of the new Read Act (*Read Act,* n.d.-a). Using a structured literacy approach, teachers learn how to deliver effective instruction to meet their students' needs. This will be helpful to teachers instructing students with specific reading learning disabilities.

The first reading program is the 95 Phonics Core Program (PCP). The PCP is an explicit, systematic, and sequential phonics program used for instruction with all students. It also uses the MTSS model for Tiers of Instruction: Tier 1: Whole class instruction, Tier 2: Intervention, and Tier 3: Intensive Intervention (*Efficacy studies,* 2023)

Data collected from the teachers who took part in an efficacy study conducted in June of 2022 results found nearly all of them felt confident when teaching (99%) and (96%) thought PCP was easy to use. 97% of the participants agreed that PCP was critical in the development of a skilled reader (*Efficacy studies*, 2023).

The second program is Path to Reading Excellence in School Sites (PRESS, n.d.). The PRESS program was developed by the Minnesota Center for Reading Research at the University of Minnesota. PRESS provides instruction in an MTSS model. The program can support and bolster reading and has been used by thousands of educators since 2014. It can be used with a variety of assessment programs. (*PRESS - Path to reading excellence in school sites,* n.d.)

The third program is Heggerty Phonemic Awareness Curriculum. The lessons are implemented in twelve minutes or less. Using an evidence-based program makes it easier for teachers to implement reading acquisition. Teachers have access to digital resources and training videos making lessons easy to plan and implement with fidelity.

Literacy Screening Tools for Grades K–3

Assessments are recommended with any reading instruction based on the science of reading. Assessments tools help teachers gain information for guiding reading instruction. The Minnesota Department of Education (MDE) has provided guidance on universal literacy and dyslexia screening. Universal screenings determine a student's risk of developing a reading difficulty. The dyslexia screening and data-reporting requirements are to be included in the Local

Literacy Plan (Ofgang, 2022). According to the READ Act (*READ Act: K-3 Universal and Dyslexia Literacy Screening Tool Review Criteria and Process,* n.d.-b), screening for characteristics of dyslexia can be integrated with universal literacy screenings.

The Minnesota Department of Education has approved the following screening tools for use when planning and instructing reading development because they are aligned with the initial process of screening students for characteristics of dyslexia. These tools help determine a student's risk of developing a reading difficulty, suggest interventions based on the results of the assessment, and guide future interventions as needed.

1. DIEBELS 8th Edition is a data system that provides student performance results and generates reports for DIBELS 8th Edition. This is a data system that provides student performance and generates reports to make data-driven decisions and improve student growth. DIEBELS (8th ed) includes the following assessment measures: Letter name fluency, phoneme segmentation fluency, nonsense word fluency, and oral reading fluency.
2. FastBridge includes the following assessment measures: Letter names, word segmenting, letter sound fluency, nonsense words, and oral reading fluency.

As a special education teacher, I work closely with elementary-level students who have reading disabilities. Helping my students acquire proficiency in reading is important to their success and well-being not only as students, but also as adults. According to Timothy Shanahan (2020), students who are proficient at reading are more likely to be successful in other domains. Reading involves information processing and being able to transform speech to print and print to meaning. A student who has learned to read can develop an information-processing ability that can help them acquire new knowledge. This ability helps the student's success and brain

development in other school subjects. A large percentage of students leave school with literacy levels too low to allow them to participate fully society (Shanahan, 2020).

Reading has a lasting effect on a student's future well-being. According to the National Center for Learning Disabilities, students with learning disabilities are three times more likely to drop out of school and are twice as likely to be suspended as those who do not have reading disabilities (Press // Implementing Press, n.d). The Minnesota Department of Education also states that only 75.8% of specific learning-disabled students graduate from high school, compared to 86.9% of regular education students (Hultquist, 2023).

The 2023 Minnesota Report Card states that only 47% of students are meeting reading standards. Becoming a successful reader is associated with many positive life outcomes, including academic accomplishment, enhanced career opportunities, and a lower likelihood of entering the criminal justice system (Hultquist, 2023). Despite the critical importance of literacy learning for lifelong success, 65% of students in fourth grade in the United States are below a proficient level in reading (Press // Implementing Press, n.d). Students who have not graduated from high school are more likely to be incarcerated *(Adult Prison Population Summary,* 2023) then those who did graduate from high school. Reading empowers students to become successful adults. This is why evidence-based practices are important.

Minnesota has made teaching reading a priority. On May 24, 2023, Governor Walz signed a new reading act into law in Minnesota. The Reading to Ensure Academic Development (READ) Act's goal is to ensure that Minnesota children from kindergarten to third grade, including multilingual and special education students, receive support to achieve their individualized reading goals The science of reading uses data-driven strategies and curricula to teach reading effectively.. The Minnesota Department of Education will mandate Minnesota

school districts and charter schools to submit data to the Minnesota Department of Learning on how kindergarten to third-grade students are progressing in phonemic awareness, phonics, decoding, fluency, and oral language. The districts and charter schools will also be required to have a literacy plan (Hultquist, 2023).

Key Term Definitions

*Comprehension. "*The ability to understand what one is reading" (*Learning literacy glossary*, n.d.).

Evidence-based Practices. "are practices that are supported by a strong high-quality evidence base that have seen effects that positively impact students" (*What do we mean by evidence-based?* 2022)

Fluency. "The ability to read words, phrases, sentences, and stories correctly, with enough speed and expression" (*A full breakdown of the science of reading components*, 2023).

Individuals With Disabilities Education Act (IDEA). According to the US Department of Education, "this is a law that makes available a free appropriate public education to eligible children with disabilities throughout the nation and ensures special education and related services to those children" (*Section 1401 (30)*, 2019).

Multitiered System of Supports (MTSS). "framework to address the needs of students, including struggling learners and students with disabilities. MTSS integrates screening and assessment and organizes differentiated intervention practices within a multilevel instructional and behavioral framework. MTSS is considered to be an effective framework for organizing intervention practices" (*Ensuring a high-quality education for highly mobile children,* 2023)

*Nonsense Word Fluency (NWF). "*NWF is a brief, direct measure of the alphabetic principle and basic phonics" (*Nonsense word fluency (NWF)* n.d.-a).

Oral Language. "The way you communicate with others through speaking and listening" (*Learning literacy glossary*, n.d.).

Phonics. "Reading instruction to aid the understanding of how letters and groups of letters link to sounds to form letter–sound relationships and spelling patterns" (*Learning literacy glossary*, n.d.).

Phonemic Awareness. "The ability to identify and play with individual sounds in spoken words" (*Learning literacy glossary*, n.d.).

Phoneme Segmentation Fluency (PSF). "is a brief, direct measure of phonemic awareness" (Phoneme segmentation fluency (PSF) n.d.-b)

Response to Intervention (RTI). "A multi-tiered instructional framework… schoolwide approach that addresses the needs of all students, including struggling learners and students with disabilities, and integrates assessment and intervention within a multi-level instructional and behavioral system to maximize student achievement and reduce problem behaviors (*Memo: OSEP memo 11-07 response to intervention (RTI) (January 21, 2011)* 2022).

Science of Reading. *"*is a vast, interdisciplinary body of scientifically based research about" reading and issues related to reading and writing (Lawson, 2021).

Specific learning disability (SLD). "A disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or complete mathematical calculations. This includes conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia," (*Section 1401 (30)* 2019).

Structured Literacy. Structured literacy is an approach to teaching oral and written language. It's based on the science of how kids learn to read. (Greene, n.d.).

Vocabulary. “Knowing what words mean and how to say and use them correctly” (*Learning literacy glossary*, n.d.).

Chapter II: Literature Review

Teaching children how to read is considered one of the most important goals of education. The science of reading research emphasized how vital literacy instruction is and how it needs to include phonological awareness, phonics and word recognition, fluency, vocabulary and oral language comprehension, and text comprehension (Jiban, 2024). Quality core reading instruction must include assessments. Over the last few decades, RTI has placed an emphasis on an MTSS delivery model (Zirkel & Thomas, 2010). To meet the needs of all students literacy instruction needs to adopt evidence-based practices that are successful with students in all tiers. This emphasis intensified in 2004 with amendments were made to IDEA. These amendments stated that districts may use this process (MTSS) to determine whether the child responds to scientific-based intervention as part of the evaluation process (Zirkel & Thomas, 2010).

There are many different types of reading instruction but I will focus my review on three reading programs that use assessments to guide the reading interventions. and a professional development teacher training in literacy. The professional development training, Language Essentials for Teachers of Reading and Spelling (LETRS) was included in this review because this training is being taught to teachers throughout Minnesota as part of the new Read Act (*Read Act,* n.d.-a). Reading is sequential and needs to be developmentally appropriate for the learner. Phonological/Phonemic awareness has become a main focus of literacy instruction. Language proficiency is also important and affects reading development. Once students have an understanding of phonemic awareness, their decoding and oral reading fluency will increase. The goal of reading is to comprehend and learn (Moats & Tolman, 2019b).

Reading is sequential and must be developmentally appropriate for the learner. Phonemic awareness has become a main focus of literacy instruction. Phonemic awareness and language proficiency are also important and affect reading development. According to Moats and Tolman (2019b), once students understand phonemic awareness, their decoding and oral reading fluency will increase. This will lead to the ultimate goal of reading, which is to comprehend and read to learn. To meet the needs of all students, literacy instruction must adopt research-based instruction that is successful with students of all capabilities. The goal of reading is to comprehend and learn. (Moats & Tolman, 2019b). There are many different types of reading instruction, however my review focuses on three types of reading practices that use assessments to guide the RTI interventions. The following sections will review LETRS, PCP, PRESS, and Heggerty.

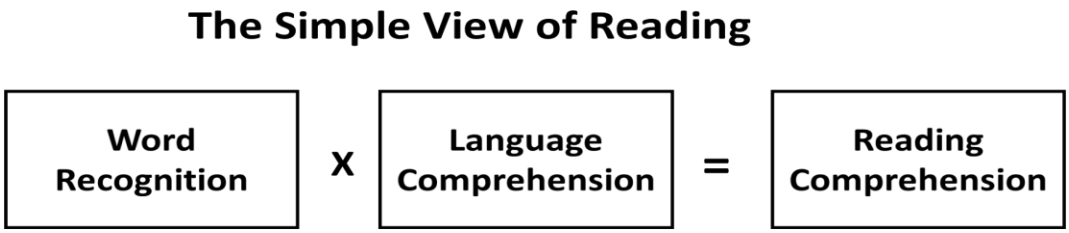
Language Essentials for Teachers of Reading and Spelling (LETRS)

The LETRS two-year training was planned to help teachers working with kindergarten through 3rd-grade students. The first-year teachers learn how to teach phoneme awareness decoding, word recognition, and spelling. The second year focuses on oral language, vocabulary, reading comprehension, and writing in response to reading. The figures below illustrate a theoretical schema to aid in coherence to understand literacy knowledge (Moats & Tolman, 2019b).

LETRS mentions scientifically recognized models of reading. The two-year LETRS course aligns with the validated construct of the Simple View Formula developed by Grough and Turner in 1986. This construct also known as the Simple of Reading emphasizes that reading comprehension is the outcome of word recognition and language comprehension. Figure 1 was adapted from Grough and Tuner in 1986, The Simple View Formula (Farrell et al., 2023).

Figure 1

View of Reading Acquisition in the LETRS Program

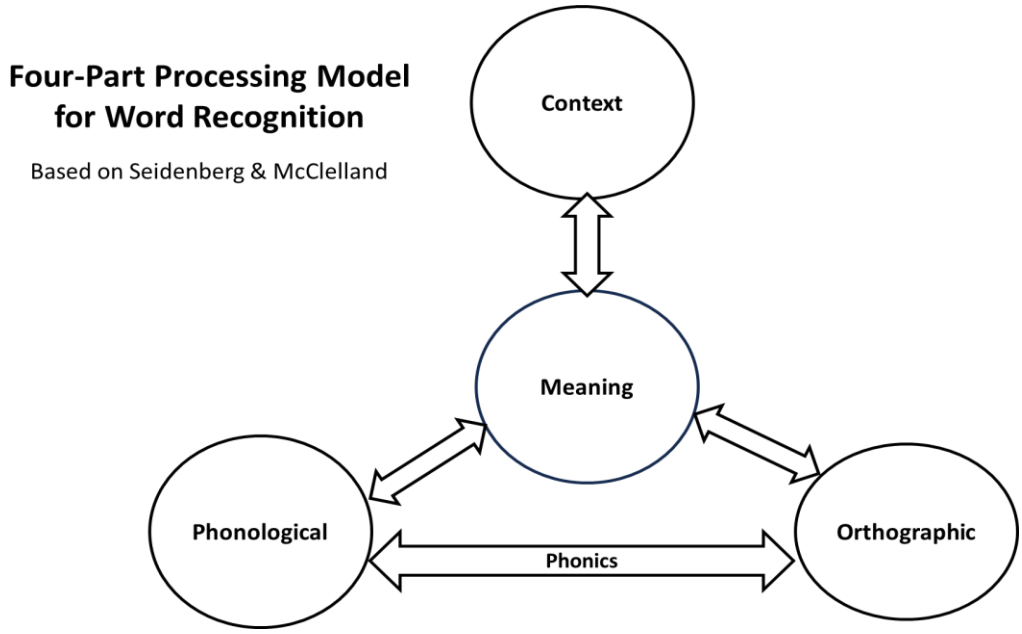


Note.Adapted from Moats & Tolman. (2019a).

Figure 2 is based on a four-part model for Word Recognition created by Seidenberg and McClelland in 1989 (*Four-Part Processor*, 2021).

Figure 2

Four-Part Processor Model for Word Recognition



Note.Adapted from Moats & Tolman (2019a).

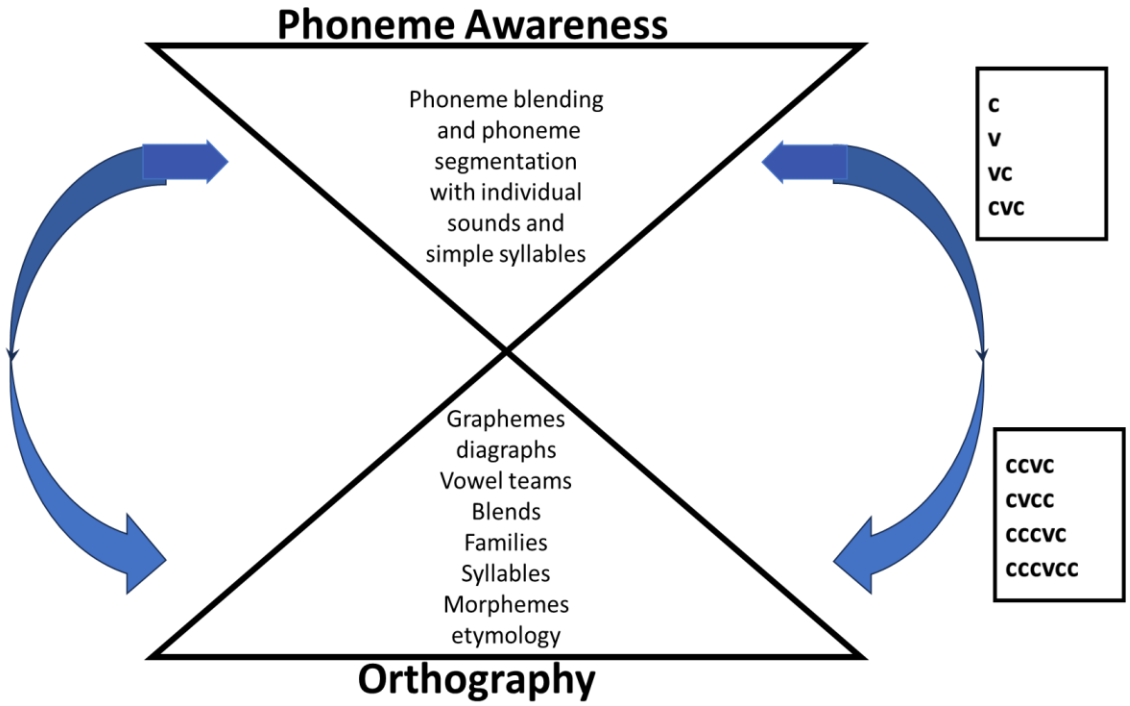
The reading brain can also be understood through these four parts: phonological, orthographic, meaning or semantic, and context processing systems (*Four-Part Processor,* 2021). This model represents the cognitive processing work in our brains and results in fluent reading. This model illustrates how we identify and remember written language symbols, how to produce speech sounds, how to interpret words in and out of context, and how to segment a word into phonemes and remember the word to translate to print (Adams, 2010).

Brain imaging studies have taken place throughout the United States, and the images are consistent again and again; therefore, what has to take place instructionally is consistent as well. As cognitive neuroscientist Stanislas Dehaene states, “It simply is not true that there are hundreds of ways to learn to read. … When it comes to reading, all [children] have roughly the same brain that imposes the same constraints and the same learning sequence” (The Science of Reading: Evidence for a New Era of Instruction, n.d.).

Figure 3 is based on the two constructs phonemic awareness and orthographic mapping of a work and illustrates how letters and sounds are interconnected.

Figure 3

Linking Letters and Sounds



*Note.*Adapted from Moats & Tolman (2019a). Courtesy of Carol A. Tolman.

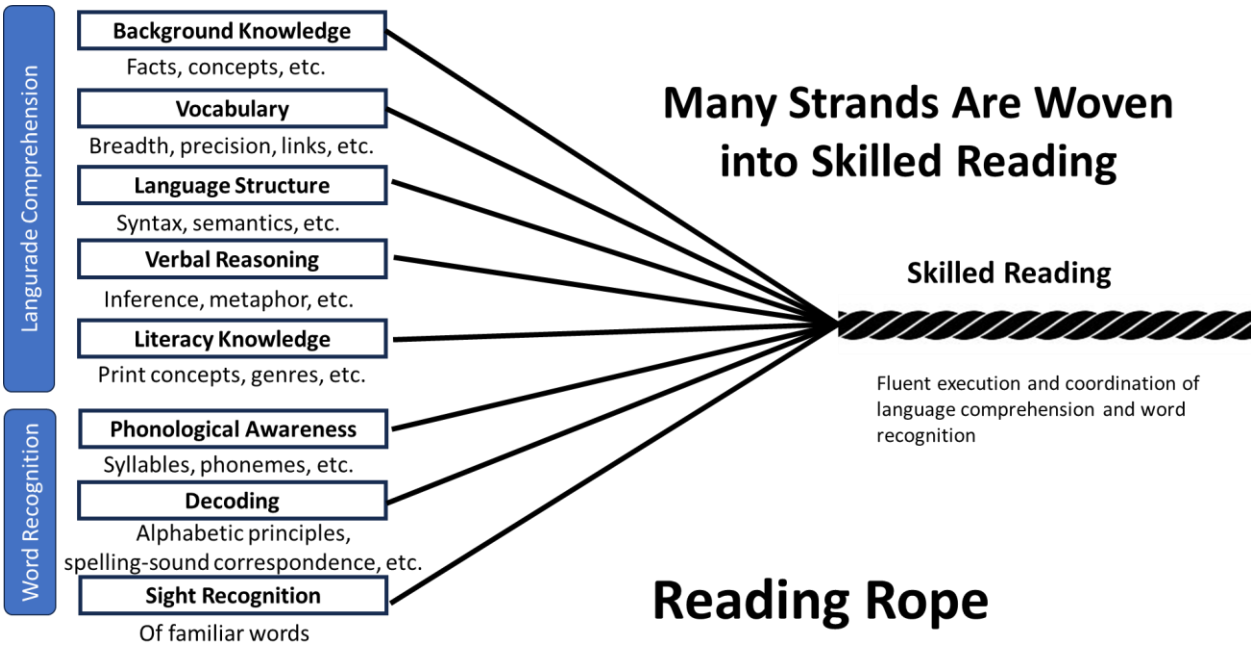
The hourglass shows how recognizing words by sight depends on understanding how letters and sounds are linked. (Moats & Tolman, 2019b). The top portion of the hourglass represents students' progression in detecting phonemes within words and turning them in the mind by listening. The bottom part of the hourglass represents orthographic mapping. Orthographic mapping is a mental process used to store and remember words. It helps students

connect something new with something they already knew (mapping.https://keystoliteracy.com/blog/the-role-of-orthographic-mapping-in-learning-to-read/)

The second main principle of LETRS is language comprehension. Figure 4 is called the Reading Rope. The Reading Rope was developed by Dr. Hollis Scarborough (2001). This figure does a great job showing a variety of skills children need to become proficient readers. The Reading Rope has two main sections: Word Recognition and Language Comprehension. Each of the sections has smaller strands that represent the skills needed to become proficient readers. These strands are woven to make a rope that represents reading acquisition. The strands are dependent on each other. If one strand is weak, it affects the student's reading proficiency. (Moats & Tolman, 2019b).

Figure 4

Scarborough's Reading Rope



*Note.*Adapted from Moats & Tolman (2019a).

LETRS Study 1

Language Essentials for Teachers of Reading and Spelling (LETRS) instruction came to the fore of literacy education after a study in Mississippi in 2014–2015. According to the National Assessment of Educational Progress, Mississippi students have historically been below the national average on reading assessments (Lexia® LETRS® efficacy research, 2023). Concerned by these findings, educators and legislators in Mississippi took action. In April 2013, Mississippi's Literacy-Based Promotion Act was made law. This prompted the Mississippi Department of Education to begin providing early literacy professional development to all K–3 educators using the LETRS program (Moats & Tolman, 2019b). Participants received professional development content across eight modules split into two phases. Each phase included 6 weeks of online coursework and 3 days of face-to-face workshops. The first phase of LETRS training is usually taught over 1 school year.

As a result of this initiative, the Mississippi Department of Education, along with the Regional Educational Laboratory (REL) Southeast, created two instruments to support the implementation: the Teacher Knowledge of Early Literacy Skills (TKELS) survey and the Coach's Classroom Observation Tool (CCOT). Mississippi educators in kindergarten through third grade were asked to take these surveys four times a year. The study sought to investigate changes in teacher knowledge, how literacy instruction changes were perceived regarding teaching competencies, and progress and changes as a result of the LETRS professional development.

Four main findings emerged from the study:

- Between spring 2014 and fall 2015, average Teacher Knowledge of Early Literacy Skills (TKELS) increased from 49.56 on the TKELS survey to 52.28 (measured in T-score points, a standardized score with an average of 50 and a standard deviation of 10), equivalent to answering at least one more item out of 31 correctly. This corresponded to an increase from the 48th percentile to the 59th.

Table 1

TKELS Scores & Percentile (Spring 2014 to Fall 2015)

	Before	**After**
TKELS Score	49.56	52.58
TKELS Percentile	48th	59th

- The increase in teachers' knowledge of early literacy skills was associated with progress in the professional development program. Educators who had completed the program scored an average of 2.90 points higher than educators who had not started it. At the end of the study, educators who had not started the program were in the 54th percentile on the TKELS survey, while educators who had completed it were in the 65th percentile.
- Between winter 2014 and spring 2015 in target schools, the average ratings of the following metrics increased: quality of early literacy skills instruction, student engagement during early literacy skills instruction and teaching competencies.. The average rating of teaching competencies increased from the 30th percentile to the 44th percentile, quality of instruction from the 31st percentile to the 58th percentile, and student engagement from the 37th percentile to the 53rd percentile. See Table 2.

Table 2

TKELS & teaching characteristics (Program End)

	Not started	**Completed**
TKELS Percentile	54th Percentile	65th Percentile
Teaching Competencies	30th Percentile	58th Percentile
Quality of Instruction	31st Percentile	44th Percentile
Student Engagement	37th Percentile	53rd Percentile

The increases in the average ratings of teaching competencies, quality of instruction, and student engagement in target schools were associated with progress in the professional development program. Teachers who had completed the program were rated 0.41 points higher in teaching competencies, 0.30 points higher in quality of instruction, and 0.22 points higher in student engagement than teachers who had not started it. At the end of the study, teachers who had not started the program were rated in the 38th percentile for teaching competencies, the 42nd percentile for quality of instruction, and the 39th percentile for student engagement, whereas teachers who had completed the program were rated in the 54th percentile for teaching competencies, the 59th percentile for quality of instruction, and the 53rd percentile for student engagement (*Lexia® LETRS® efficacy research,* 2023).

LETRS Study 2

A study conducted from 2016 to 2018 examined the implementation of the LETRS program in Ohio. It found that improvement in educator knowledge during the implementation process was statistically significant in both cohorts of trained educators. Educators are better able

to use an MTSS approach in instruction then when the MTSS approach is not used. The students of teachers in both cohorts showed improvement in many curriculum-based assessments. The percentage of students with disabilities rated proficient or higher on Ohio's Third Grade English Language Arts Achievement Test improved for Cohort 1, but not Cohort 2. The percentage of students on track for reading proficiency increased for both cohorts (*Ohio part B SSIP phase III year 3 report,* 2018).

LETRS Study 3

A quantitative study was conducted in two rural schools in South Carolina.. The study examined first-grade students' reading ability. One of the school's educators had completed LETRS training. The other school's educators had not received the training. T-tests were used to compare fall, winter, and spring benchmarks. The educators who had completed only 25% of the LETRS training by the time the fall benchmark was assessed, saw no significant difference in their students reading then the students in the control schools. . The educators who had completed only 50% of the LETRS training by the time the winter benchmark was assessed found that the first-grade students whose teachers had received LETRS training had higher average scores than their counterparts in the control schools. At the spring benchmark, the educators who had completed 75% of the LETRS training found that there were significant differences from the winter benchmarks (Kemp Woodward, 2023).

95 Phonics Core Program (PCP)

The 95 Phonics Core Program (PCP) is an explicit, systematic, and sequential phonics program used for instruction with all students. The underlying principle of the program is that explicit and systematic phonics instruction enables students to succeed in reading. The program

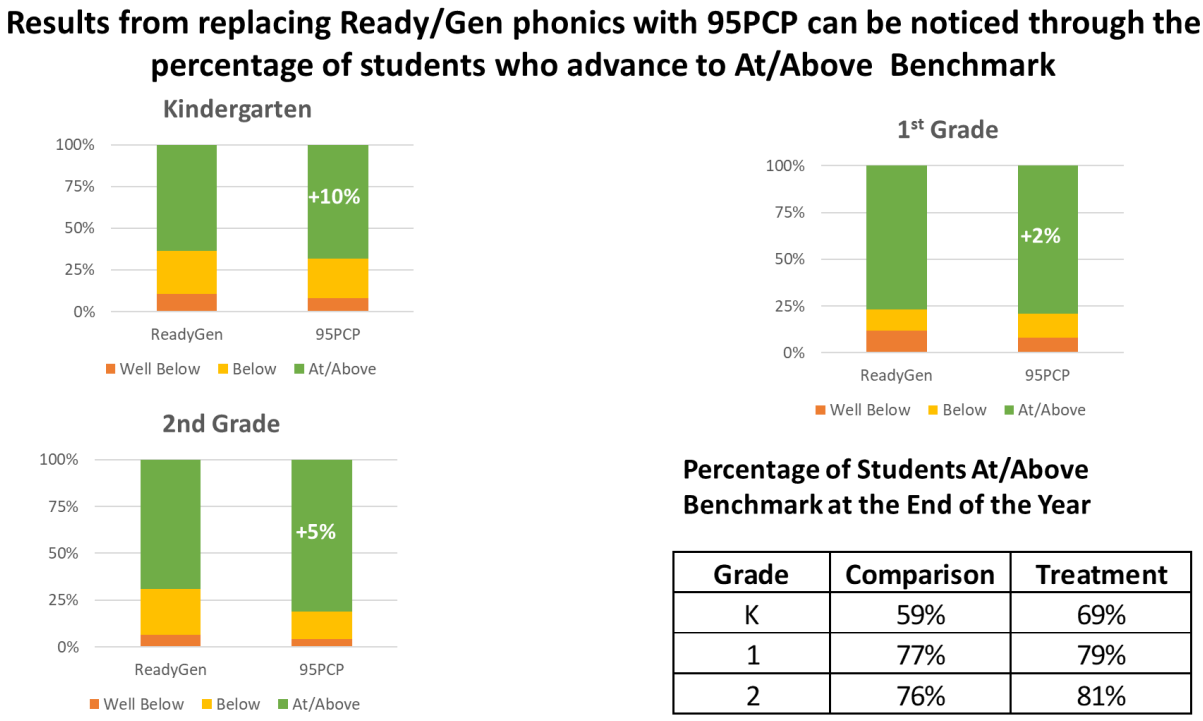
implements the science of reading practices by using evidence-based tools and knowledge. PCP uses the MTSS model for tiers of instruction. Like other best-practice literacy programs, Tier 1 is the whole class instruction, Tier 2 is intermediate intervention, and Tier 3 is intensive intervention. This program saves teachers time that can be spent more productively. They do not have to spend time gathering and creating materials (*Teaching Blending Evidence Packet*, n.d.).

PCP Study 1

The first PCP study took place in the 2021–2022 school year in a Missouri school district. This randomized study consisted of more than 3,000 students from 14 schools (Efficacy studies 2023). Treatment schools were assigned to use the PCP as a replacement for their usual phonics instruction. Compared to control schools, treatment schools increased their composite scores of the Acadience Reading assessment, qualifying the intervention for a strong Every Student Success Act (ESSA) rating. Figure 5 shows the results.

Figure 5

95 Phonics Core Program 2021–2022, Grades K–2 Efficacy Study



Percentage of Students At/Above Benchmark at the End of the Year

Grade	Comparison	Treatment
K	59%	69%
1	77%	79%
2	76%	81%

Note. Adapted from *Teaching Blending Evidence Packet* (n.d.).

Highlighted findings for each grade include the following:

- Kindergarten students in the treatment group demonstrated significantly more growth in Phoneme Segmentation Fluency (PSF) and Nonsense Word Fluency Correct Letter Sounds (NWF-CLS) scores than students in the control group.
- First-grade students in the treatment group demonstrated growth in NWF-CLS scores than students in the control group.
- Second-grade students in the treatment group demonstrated significantly more growth in composite and Oral Reading Fluency (ORF) scores than students in the control group.

PCP Study 2

The second study was a matched study. It was implemented during the 2022–2023 school year. The participants included a diverse cohort of over 400 kindergarten through first-grade students from a district in Arizona. Participants were from two schools, and the study population included 29% Hispanic/Latino students and 27% Indigenous students. The two schools that volunteered to implement PCP were matched with students from three demographically similar schools for comparison. On the aimswebPlus assessment, students in the PCP schools demonstrated growth in early literacy scores than students in comparison schools.
The invention in one study qualified for a moderate Every Student Success Act (ESSA) rating and the invention in the study qualified for a strong Every Student Success Act (ESSA) rating (Kemp Woodward, 2023).

Path to Reading Excellence in School Settings (PRESS)

PRESS addresses reading skills of phonemic awareness, phonics, fluency, vocabulary and comprehension,. The PRESS program uses data collected through PSF and NWF assessments to make decisions for students where educational support is based on an MTSS model. A successful MTSS model relies on 80% of the students working at grade level in reading. The program comprises four components: quality core instruction, tiered interventions, embedded and ongoing professional development, and data-driven decision-making (*READ Act: K-3 Universal and Dyslexia Literacy Screening Tool Review Criteria and Process,* n.d.-b)

A three-part process is used to make implementation decisions for student placement. First, students are screened three times a year. Second, information gathered from the screening is used to identify which skill to target. Third, progress is monitored weekly to determine the

effectiveness of the intervention. Monitoring examines how students are progressing both toward their instructional goals and toward their grade level.

PRESS Study 1

A pilot project was implemented by PRESS faculty and coaches to show teachers how to use PRESS as the main instruction tool to teach literacy to students in third grade. This PRESS pilot was developed using an RTI approach. Teachers learned new ways to collect and analyze data. A universal screener was used to plan better instructional decisions. Tier 1 interventions were then implemented with 41 students across two classrooms. Pre- and post-data were shared to support the program's effectiveness. Results from a study in two third-grade classrooms showed a 32% increase in the number of students performing at or above their seasonal benchmark after receiving a class-wide PRESS intervention (*Press // Implementing Press,* n.d).

PRESS Study 2

This study looks at research methods that focus on reading and math interventions at a Tier 2 level. Existing data from researchers Burns, et. al (2015), found, "the effectiveness of a comprehension intervention (addressed multiple components of reading; g = .35) to a targeted invention (addressed one component of the reading based on student need; g - .65) (*Press // Implementing Press,* n.d). The latter was determined to be more effective. Burns, et. al (2015) also resolved interventions are more successful if they target students' areas of need (*PRESS - Path to reading excellence in school sites*, n.d.). This study uses a meta-analysis process to a comprehensive intervention to a targeted intervention. The results showed students struggled with comprehension, fluency, decoding, and phonemic awareness. Data on these deficits was collected on 175 second and third-grade students. The data showed that targeting the intervention based on problem analysis of the four broad areas led to more growth than the comprehensive

interventions the school had been using. However, these positive results were also dependent on effective grade-level teams to conduct the problem analysis, an easy-to-use data warehouse system, a data manager to facilitate the problem analysis, implementation integrity of the interventions, and quality core instruction (*PRESS - Path to reading excellence in school sites*, n.d.).

Heggerty Phonemic Awareness curriculum

Heggerty Phonemic Awareness Curriculum is taught to preschoolers and primary grade students. The program uses a structured format to supplement phonological and phonemic awareness development. Lessons focus on specific skills for each grade. Teachers use hand motions to help support student acquisition of focal skills. Teachers have access to a digital hub that supports implementation including hand motions.

Study 1

In 2022 the Heggerty company contracted services from an outside research firm to study the Heggerty Phonemic Awareness (PA) Curriculum during the 2022-2023 school year. The study included 16 kindergarten and first-grade teachers' impressions and program implementation. The study tested students using DIBELS 8. Literacy results focused on phoneme segmentation fluency and nonsense word fluency. The study consisted of four classrooms from four school districts throughout the United States. There was no treatment group so a Level 3 correlation design was implemented to meet a Promising rating. Students made gains in their phoneme segmentation fluency and nonsense word fluency from Fall to Spring. One fault of this study is that it did not include special education students results.

Teacher perceptions Findings for this program study

1. Nearly all teachers reported that the materials were of good or excellent quality (93%) and very effective at developing various student skills (79%+ teachers for most skills).
2. All teachers indicated they would recommend Heggerty PA to another teacher. Most teachers reported that they experienced no challenges using the program (75%+). For those who did, they indicated they had time constraints or would have liked to have had more training.
3. Nearly all teachers (93%) reported they could implement all or most of a typical lesson. The report includes many details about teachers' impressions of the program, which would be helpful to review for all schools planning for their implementation (Schechter, 2023).

Kindergarten Highlighted Findings

1. Kindergarten Highlighted Findings for Phoneme Segmentation Fluency (PSF), kindergarten students (N=207) made significant improvements across the year, with their spring scores 10 points higher scores than the first graders' fall scores (43 points vs. 32 points).

2. Similarly, for Nonsense Word Fluency - Correct Letter Sounds (CLS), kindergarten students improved throughout the year, with their spring scores 4 points higher than the first graders' fall scores (40 points vs. 36 points). CLS gains, on average, went from 9 letter sounds in the fall to 40 in the spring. Words Read Correctly (WRC) improved from 1 to 10 words (Schechter, 2023).

First Grade Highlighted Findings

1. The first graders (N=44) also made progress on PSF and NWF-CLS.
2. For NWF-CLS, students (N=78) gained 49 letter sounds across the year (36 to 85)
3. For NWF-WRC, students improved from 7 to 26 words across the year (Schechter, 2023).

Study 2

A study conducted by in 2022 by master's student, Siobhan Carpenter as part of fulfillment of the requirements for Master of Arts in Special Education from Caldwell College, investigated whether the addition of movement, as a multisensory component, positively affects K-2 special education students' ability to isolate, blend, and manipulate sounds at the word level (Carpenter, 2022). The researcher/teacher in this study used portions of the Heggerty Phonemic Awareness Curriculum for interventions to develop the phonemic awareness skills of isolating, blending, and manipulating sounds (without graphemes). The eight students in this study also received daily instruction from Wilson FUNdations. Quantitative and qualitative data were collected, which determined that the addition of kinesthetic movement with direct phonemic awareness instruction helped improve learning and confidence in the group of language learning disability students in her study. Results from this intervention demonstrated her students' participation and understanding of target phonemic awareness skills.

Summary of Literature Review

Becoming a successful reader is associated with many positive life outcomes, including academic accomplishment, enhanced career opportunities, and less likelihood of entering the criminal justice system (Hernandez, 2011). Despite the importance of literacy for lifelong

success, 65% of fourth-grade students in the United States are below a proficient level in reading (Press // Implementing Press, n.d).

Literacy programs grounded in the framework of the science of reading have produced students who are more likely to become accomplished readers. Heggerty, PCP, and PRESS use this framework to great effect. All three programs include phonological awareness, phonics and word recognition, fluency, vocabulary and oral language comprehension, and text comprehension. They use an RTI as a framework to build a school-wide process to deliver high-quality literacy instruction. Through an MTSS model, these programs use a universal screener, and progress monitoring drives decisions to make sure that all students are supported in the proper setting to receive their literacy-supported instruction.

LETRS training provides the knowledge base for teachers to understand the importance of teaching skills to support reading development phonemic awareness, phonics, fluency, vocabulary, and comprehension. This course allows teachers to implement what they have learned in delivering instruction to students with learning disabilities in an MTSS model. Minnesota as well as other states are in the process of improving how they teach literacy. LETRS can help in this process. LETRS literacy training familiarizes teachers with supported research and new methods through the two-year professional development on how literacy skills need to be taught and backing the recommendations of the method with research (Schwartz, 2022).

Chapter III: Conclusions and Recommendations

Best practices for reading instruction should be based on strategies that have been found by research to improve students' ability to read. Instruction should be monitored and evaluated to make sure the teaching is at an appropriate level. Proven reading instruction programs includes tiered instruction so that reading inventions are correctly administered Educators need to have access to evidence-based curriculum. The curriculum should be easy to use. When I have used these interventions it has saved me valuable time in my very busy schedule. The invention are easy to facilitate. Professional Development and Training should be conducted to help educators stay current in best practices. Easy to obtain but also accurate data should be collected to make intervention decisions.

Science of Reading Strategy Instruction

Quality instruction aligned with the science of reading is based on research into the cognitive mechanisms of reading, the neural processes involved in reading, and computational models of learning to read (Shanahan, 2020). Heggerty PCP, and PRESS follow the principles of the science of reading instruction. When the MTSS format is followed the students are more effectively helped. Research has shown that these three practices are effective and efficient in increasing literacy. Using the teaching interventions from Haggerty, PCP and PRESS has shown that students grow in their basic reading acquisition. In addition, teachers have found the interventions easy to use and implement. These practices provide professional development opportunities for educators to increase their knowledge of literacy instruction. These practices used with professional development opportunities such as LETRS enable educators to build a solid foundation for literacy instruction.

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Recommendations for Future Research

The purpose of continuing research into effective reading instruction is to help increase the likelihood of students' success and productivity. Being a successful reader has a positive effect in all academic areas. It also enhances career opportunities, and the student is less likely to become a part of the criminal justice system. Future research should include comparable groups of students with learning disabilities as participants. Up-to-date research will help promote practices and policies that will have the greatest possibility of ensuring equity and excellence in reading. Researchers must examine studies aimed at deciding whether curricula and instruction are evaluated effectively. This will increase the probability of future research being successful and will lead to guidance in education policy and teaching.

Implications for Practice

To improve the reading ability of students, it would be prudent to incorporate the science of reading recommended framework (Shanahan, 2020). The teacher education departments of higher education institutions should stay up to date with best practices in reading and instruction. School districts should stay up to date on best practices in teaching literacy. The state of Minnesota has made teaching reading a priority by implementing the Reading Act in law in May 2023. Professional development through a research-based science of reading program will be a priority. Schools will be required to have a literacy plan that prioritizes the teaching of phonemic awareness, phonics, decoding, fluency, and oral language to kindergarten to third-grade students.

Summary

It is vital to know whether literacy instruction is effective by trying it out in classrooms and evaluating its effect on student learning. According to Timothy Shanahan (2020), any real science of reading would include all the methods or approaches that have been found, through

research, to help children learn to read. The science of reading should drive policymaking for future instruction. It can take many years to implement new initiatives, and so having well-defined implementation methods will help reading interventions in the future.

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