

Product Evidence Base



# Lexia<sup>®</sup> LETRS<sup>®</sup> Efficacy Research

July 2023

**Lexia<sup>®</sup>**

Lexia  
 **LETRS<sup>™</sup>**



## Introduction

Lexia® Learning is the Structured Literacy expert. For more than 30 years, the company has focused solely on literacy and today provides a full spectrum of solutions for both students and teachers. Included in the Lexia® portfolio is Language Essentials for Teachers of Reading and Spelling, 3rd Edition (LETRS®). LETRS teaches the skills needed to master the fundamentals of reading instruction — phonological awareness, phonics, fluency, vocabulary, comprehension, writing, and language. It is designed for educators with an interest in improving literacy. Educators who complete LETRS gain the deep knowledge needed to be literacy and language experts in the science of reading. Lexia conducts rigorous scientific research to demonstrate the efficacy of its programs. This document summarizes the efficacy research studies that constitute the evidence base for LETRS.

LETRS has evolved through multiple editions over the years. Originally developed by renowned literacy expert Dr. Louisa Moats, LETRS was designed to help teachers learn and apply scientific, research-supported methods to improve reading outcomes and prevent reading difficulties. LETRS 3<sup>rd</sup> Edition introduced new features to enhance the program's efficacy and user engagement, including an online delivery model, engaging videos, embedded assessments, reporting capabilities on user progress, and the option for users to receive credit from two universities for completion of college coursework. The content of LETRS, which was revised to reflect the latest scientific research, was also divided into two four-unit volumes, as opposed to the modules of previous editions.

## Key Findings

Collectively, studies have found:

- **Improved teacher knowledge and practice.** Teachers who completed LETRS training demonstrated higher levels of knowledge and improved instructional practice across a variety of objective and self-rated measures.
- **LETRS often implemented with other interventions.** LETRS has been used alongside other educational interventions to positively influence student outcomes.
- **Implementation linked to improved outcomes.** Positive teacher outcomes were most likely to be observed in studies that reported moderate to high levels of implementation.

The studies summarized in the tables below provide an evidence base establishing the efficacy of LETRS. Included are early studies on LETRS 1<sup>st</sup> and 2<sup>nd</sup> Editions<sup>1</sup> – together with more recent empirical studies on LETRS 3<sup>rd</sup> Edition. Studies on earlier editions demonstrate a rationale that LETRS 3<sup>rd</sup> Edition would be effective for teachers and students. Similarly, studies where LETRS was paired with other interventions, like a curricular program or literacy coaches, demonstrate a rationale that LETRS is effective because positive outcomes cannot be attributed to either intervention individually. Though research on LETRS 3<sup>rd</sup> Edition is limited, the weight of empirical evidence suggests it can improve teacher knowledge and instruction when used as intended. Evidence for LETRS efficacy is described relative to the categories created by the *Every Student Succeeds Act (ESSA)*.

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<sup>1</sup> LETRS 1<sup>st</sup> Edition consisted of 10 modules delivered through print material and in-person professional development sessions. LETRS 2<sup>nd</sup> Edition consisted of 12 modules delivered through print material, in-person professional development sessions, and an online platform. LETRS 3<sup>rd</sup> Edition consists of two four-unit volumes delivered through an online platform, print material, and optionally, professional learning unit sessions.

The primary purpose of LETRS is to improve teacher knowledge and instructional practice. It is not an instructional intervention for students. When conducting research studies or evaluations, many researchers and state education agencies have paired LETRS with other interventions, such as literacy coaches and instructional programs, to promote improved student reading outcomes. In these studies, the observed effects cannot be attributed to either LETRS or to the other component(s) in isolation. Despite this limitation, we describe the findings from studies that combine LETRS together with other interventions as evidence of a rationale for the use of LETRS.

## Peer-Reviewed Publications

Lexia values peer-reviewed research. The peer-review process subjects research studies and findings to the scrutiny of other experts in the same field (peers). This process is considered necessary to ensure academic scientific quality. As of July 2023, there is 1 peer-reviewed scientific study of LETRS, listed below.

#	Year	ESSA Tier	Outcomes	Grades	# Students	Targeted Demographics
1	2008	Rationale	Oral Reading Fluency, Word Analysis, and Comprehension	2	1,512	Students with Disabilities

## External Evaluations

LETRS has been evaluated by external researchers unaffiliated with Lexia Learning, often as part of large-scale program evaluations. Research on a prior edition of LETRS has been reviewed by the independent research review organization What Works Clearinghouse.



## Third-Party Program Evaluations

#	Year	ESSA Tier	Outcomes	Grades	# Teachers	Targeted Demographics
<a href="#">2</a>	2020	Rationale	Reading Achievement, Risk for Disability	PK-3	584	-
<a href="#">3</a>	2018	Moderate	Letter Naming, Nonsense Word, Segmentation, and Oral Reading Fluency	K-1	160	Students with Disabilities
<a href="#">4</a>	2017	Rationale	Teacher Knowledge and Practice	K-3	7,638	High-Needs
<a href="#">5</a>	2008	Rationale	Reading Content Knowledge, Instructional Practice	2	270	Urban

## Doctoral Dissertations

Evaluations of LETRS have also been conducted by graduate students as part of their doctoral dissertations. These research studies – summarized in the following table – provide further independent, third-party confirmation that LETRS is an effective program.

#	Year	ESSA Tier	Outcomes	Grades	# Teachers	Targeted Demographics
<a href="#">6</a>	2022	Rationale	Foundational Skills, Vocabulary, Comprehension	1	17	Rural, Title 1
<a href="#">7</a>	2021	Rationale	Self-Rated Knowledge and Skills	K-5	78	-
<a href="#">8</a>	2021	Rationale	Self-Efficacy, Professional Practice	3-5	174	-
<a href="#">9</a>	2020	Rationale	Content and Skill Knowledge	1	17	Urban
<a href="#">10</a>	2018	Rationale	Student Reading Growth	3	10	High-Needs
<a href="#">11</a>	2017	Rationale	Student Reading Growth	K-3	63	High-Needs

The 11 research studies summarized in the above tables constitute the evidence base for LETRS, providing robust and diverse evidence that LETRS is effective at improving educators' knowledge of the science of reading. The studies also demonstrate that LETRS has the potential to improve student outcomes, especially when paired with student interventions. The remainder of this document provides detailed information about each study, including links to the original publications where appropriate. As additional evidence about the effectiveness of LETRS becomes available, this document will be updated.



## Initial Progress of Children Identified with Disabilities in Michigan's Reading First Schools

# Schools	49
# Teachers	-
# Students	1,512
Assessments	DIBELS, Iowa Test of Basic Reading Skills
Duration	2 Years
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	2
Outcomes	Oral Reading Fluency, Word Analysis, Listening Comprehension, Reading Comprehension
Program	LETRS 1 <sup>st</sup> Edition
State	Michigan
Targeted Demographics	Students with Disabilities
Treatment (Planned)	-
Treatment (Uptake)	-
Year	2008

This study examined reading development in second-grade students with specific learning disabilities following the implementation of Michigan's Reading First program. The Michigan Reading First program consisted of (1) LETRS training for general and special education teachers, (2) progress monitoring with DIBELS, (3) flexible instructional grouping for students, and (4) structured and explicit instruction in the five components of early reading. *Students identified with specific learning disabilities grew at the same rate as their peers without disabilities in reading comprehension*, but grew more slowly in oral reading fluency, listening comprehension, and word analysis. The analysis does not compare the Reading First program to a comparison condition, so causal conclusions about the intervention cannot be drawn.



# Schools	24
# Teachers	584
# Students	8,083
Assessments	Ohio's Reading Achievement Test, State Approved Reading Assessments, Reading Tiered Fidelity Inventory
Duration	4 Years
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	Pre-K-3
Outcomes	Reading Achievement, Risk for Disability
Program	LETRS 3 <sup>rd</sup> Edition
State	Ohio
Targeted Demographics	-
Treatment (Planned)	Volumes 1 and 2, staggered by cohort
Treatment (Uptake)	86% of Cohort 1 and 92% of Cohort 2 completed LETRS
Year	2020

This report describes the results of an Early Literacy Pilot that involved changes to the state and regional infrastructures; the creation of a real-time data system for use at the local, regional, and state levels; and the provision of LETRS to two cohorts of K-3 teachers from 2016 to 2018. *Improvement in educator knowledge during the pilot was statistically significant in both cohorts of educators.* Implementation of a multitiered system of support also significantly improved in both cohorts. *Students in both cohorts improved on a variety of curriculum-based measures.* The percentage of students with disabilities scoring 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. The results of this study are not uniquely attributable to LETRS because the methods do not account for its use alongside other innovations.





## Annual Evaluation Report for the Pennsylvania Dyslexia Screening and Early Literacy Intervention and Pilot Program: Pilot Year 2, 2016–2017 School Year

# Schools	42
# Teachers	160
# Students	2,736
Assessments	DIBELS
Duration	2 Years
ESSA Tier	Tier 2 (Moderate)
Evaluators	External Researchers
Grades	K-1
Outcomes	Letter Naming Fluency, Nonsense Word Fluency, Phonemic Segmentation Fluency, Oral Reading Fluency
Program	LETRS 2 <sup>nd</sup> Edition
State	Pennsylvania
Targeted Demographics	Students with Disabilities
Treatment (Planned)	3 Modules
Treatment (Uptake)	-
Year	2018

This study used a quasi-experimental design to estimate the effectiveness of the classroom program portion of the Pennsylvania Dyslexia Screening and Early Literacy Intervention Pilot Program with two cohorts of students. The classroom program consisted of LETRS training, additional professional development aligned with recommendations from the National Reading Panel, and enhanced core and supplemental reading instruction. *Students in kindergarten Cohort 2 scored significantly higher than comparison students in Letter Naming Fluency and Nonsense Word Fluency.* There were no significant differences between groups for Cohort 1 or on Phonemic Segmentation Fluency or Oral Reading Fluency. This study met What Works Clearinghouse standards with reservations and demonstrates moderate evidence of effectiveness.



## Educator Outcomes Associated with Implementation of Mississippi's K-3 Early Literacy Professional Development Initiative

# Schools	-
# Teachers	7,638
# Students	-
Assessments	Teacher Knowledge of Early Literacy Skills (TKELS), Classroom Observation Tool
Duration	2 Years
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	K-3
Outcomes	Teacher Knowledge & Practice
Program	LETRS 2 <sup>nd</sup> Edition
State	Mississippi
Targeted Demographics	High-Needs
Treatment (Planned)	8 Modules - Online Platform, Print and Professional Learning
Treatment (Uptake)	29% of Educators Completed 8 Modules
Year	2018

This report describes results from an evaluation funded by the Institute of Educational Sciences (IES) of a statewide professional development initiative in Mississippi in which all K-3 educators were provided access to LETRS from January of 2014 to June of 2016. A subsample of 63 high-needs schools were also provided with literacy coaches. The Mississippi Department of Education administered a survey of teacher knowledge to all participants twice each year. *Average teacher knowledge increased from the 48<sup>th</sup> percentile in the Spring of 2014 to the 59<sup>th</sup> percentile in the Fall of 2015.* Instructional practices were rated through observations of 316 teachers in the high-needs schools from winter of 2014 to spring of 2015. *Quality of instruction increased from the 31<sup>st</sup> to the 58<sup>th</sup> percentile. Student engagement during instruction increased from the 37<sup>th</sup> to the 53<sup>rd</sup> percentile. Teaching competencies increased from the 30<sup>th</sup> to the 44<sup>th</sup> percentile.*



## The Impact of Two Professional Development Interventions on Early Reading Instruction and Achievement

# Schools	90
# Teachers	270
# Students	5,530
Assessments	Reading Content and Practice Survey (RCPS), Classroom Observations, District Literacy Measures
Duration	2 Years
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	2
Outcomes	Reading Content Knowledge, Instructional Practice
Program	LETRS 1 <sup>st</sup> Edition
State	Eastern and Midwestern States
Targeted Demographics	Urban
Treatment (Planned)	6 of 12 Modules – 8 In-Person Days
Treatment (Uptake)	93.5% of Planned PD Delivered
Year	2008

This study funded by the Institute of Educational Sciences (IES) used a randomized control trial to compare the effects of (1) an 8-day LETRS seminar, (2) the 8-day LETRS seminar paired with instructional coaching from the Consortium on Reading Excellence, and (3) business-as-usual control conditions. The study reported that *both the LETRS seminar and the LETRS seminar plus coaching significantly improved teacher knowledge and teacher use of explicit instruction*. LETRS and LETRS plus coaching respectively had the following effect sizes: 0.37 and 0.38 on teacher knowledge, 0.35 and 0.39 on word-level knowledge, 0.21 and 0.26 on meaning-level knowledge, 0.32 and 0.53 on use of explicit instruction, and 0.08 and 0.03 on student reading scores. The treatment groups also had positive effects on meaningful knowledge and student reading achievement, but the effects were not statistically significant.



# Schools	8
# Teachers	17
# Students	359
Assessments	iReady Diagnostic
Duration	1 Year
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	1
Outcomes	Foundational Skills, Vocabulary, Comprehension
Program	LETRS 3 <sup>rd</sup> Edition
State	South Carolina
Targeted Demographics	Rural, Title 1
Treatment (Planned)	-
Treatment (Uptake)	Teachers completed 75% of LETRS
Year	2022

This study examined whether average first grade reading ability differed in two rural school districts: one in which educators completed LETRS and one in which they did not. The study used *t*-tests to compare the fall, winter, and spring iReady benchmark scores of the students enrolled in the two districts. Educators completed 25% of LETRS by the time of the fall benchmark, 50% of LETRS by the winter benchmark, and 75% by the spring benchmark. *Though there was no significant difference in student reading performance on the fall benchmark, students in the LETRS district had higher average scores by the winter benchmark, and this difference was significant by the spring benchmark.*



## The Impact of Mississippi's K-3 Literacy Initiative Professional Development

# Schools	-
# Teachers	78
# Students	-
Assessments	Researcher-Developed Survey
Duration	1 Year
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	K-5
Outcomes	Self-Rated Knowledge and Skills
Program	LETRS 3 <sup>rd</sup> Edition
State	Mississippi
Targeted Demographics	-
Treatment (Planned)	1-8 Units – Online Platform, Print and Professional Learning
Treatment (Uptake)	33% of Teachers Completed LETRS
Year	2021

This study describes the results of a survey that was administered to teachers of K-5 students who completed one or more units of LETRS 3<sup>rd</sup> Edition between the Spring of 2019 and the Fall of 2020. The survey assessed teachers' perceptions of whether LETRS improved their abilities, instructional practice, and student outcomes. *Teachers somewhat to strongly agreed that LETRS improved their knowledge of literacy instruction, skills in literacy instruction, daily classroom instruction, and climate of instructional improvement.* Teachers somewhat agreed that LETRS improved their students' literacy skills and achievement. A main goal of the study was to examine whether the number of LETRS units completed was related to the survey responses, but results were inconsistent and not statistically significant. Additionally, the study was conducted during the Covid-19 pandemic, so the results may not generalize to other contexts.



## Effects of the LETRS Reading Professional Development on Teachers' Self-Efficacy and Reading Instruction

# Schools	-
# Teachers	174
# Students	-
Assessments	Teachers Sense of Efficacy Scale, The Framework for Teaching
Duration	2 Years
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	3-5
Outcomes	Self-Efficacy, Professional Practice
Program	LETRS 2 <sup>nd</sup> Edition
State	Northeastern
Targeted Demographics	-
Treatment (Planned)	12 Modules
Treatment (Uptake)	3% of Teachers Completed all 12 Modules
Year	2021

This study describes a comparison of self-efficacy and professional responsibility in a group of 85 teachers who used LETRS and a group of 89 teachers who did not. Teachers in a convenience sample completed a survey that assessed their demographics, self-efficacy, self-rated instructional reading practice, and the number of LETRS modules they completed. Most teachers in the study completed fewer than half of the LETRS modules and only three percent of teachers completed all twelve modules. Compared to the non-LETRS comparison group, *LETRS teachers scored higher in student engagement self-efficacy, the same in instructional strategies self-efficacy, and lower in classroom management and instructional reading practice, but no difference was statistically significant.* The study does not account for differences in baseline characteristics between groups or the possibility of selection bias.



# Schools	14
# Teachers	17
# Students	-
Assessments	Teacher Beliefs Survey, Teacher Knowledge and Practices Survey
Duration	10 Months
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	1
Outcomes	Content and Skill Knowledge
Program	LETRS 3 <sup>rd</sup> Edition
State	Midwestern
Targeted Demographics	Urban
Treatment (Planned)	Vol. 1 – Online Platform, Print and Professional Learning
Treatment (Uptake)	-
Year	2020

This study compared differences in teacher knowledge, beliefs, and self-reported instructional practice in first-grade teachers who completed LETRS 3<sup>rd</sup> Edition Volume 1 and teachers who did not. Teachers were from 14 ethnically and socioeconomically diverse elementary schools in a large, urban school district in the Midwest United States. Eleven facilitators qualitatively monitored teacher progress through the LETRS online platform. The post-test measures were the Teacher Beliefs Survey and the Teacher Knowledge and Practice Survey. Teachers who completed LETRS had positive beliefs about code-based instruction, but they were not significantly different from teachers in the comparison group. *LETRS teachers had significantly higher levels of content and skill knowledge.* They also had higher levels of contextual early literacy knowledge, but the difference was not statistically significant.



# Schools	1
# Teachers	10
# Students	47
Assessments	STAR Reading, Mississippi Academic Assessment Program (MAAP), Mississippi Kindergarten–3 Assessment (MKAS)
Duration	2 Years
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	3
Outcomes	STAR Reading Growth
Program	LETRS 2 <sup>nd</sup> Edition
State	Mississippi
Targeted Demographics	High-Needs
Treatment (Planned)	15 Sessions – Online Platform, Print and Professional Learning
Treatment (Uptake)	9 of 10 Teachers Completed the Training
Year	2018

In this mixed methods study, ten third-grade teachers completed 15 sessions of LETRS and implemented the Collaborative Classroom intervention. Growth scores for 47 of their students in the bottom quartile of reading performance were compared to their growth scores for the previous academic year. *Post-intervention growth scores were significantly higher than pre-intervention growth.* There was no improvement in the distribution of student proficiency ratings. *Ninety-eight percent of the students in the post-intervention year passed one of the required state achievement tests.* Because the LETRS training occurred alongside the implementation of Collaborative Classroom, the results cannot be attributed solely to LETRS or Collaborative Classroom.





## The Impact Literacy Coaches Have on Mississippi's Lower-Performing Schools

# Schools	4
# Teachers	63
# Students	1,208
Assessments	Early Literacy Student Achievement in Reading (STAR)
Duration	1 Year
ESSA Tier	Tier 4 (Demonstrates a Rationale)
Evaluators	External Researchers
Grades	K-3
Outcomes	Reading Growth
Program	LETRS 2 <sup>nd</sup> Edition
State	Mississippi
Targeted Demographics	High-Needs
Treatment (Planned)	-
Treatment (Uptake)	-
Year	2017

This study compared reading growth trends in four lower performing elementary schools in Mississippi. The Mississippi Department of Education supplied two schools with literacy coaches that had been trained in LETRS and the Transformational Coaching Process. The comparison schools were lower performing schools that did not receive literacy coaches. *Kindergarten students in schools with coaches had significantly higher growth levels than students in comparison schools.* First grade students had significantly lower levels of growth than students in comparison schools. There was no statistically significant difference in growth levels between groups in second and third grade.

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