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Evaluating the Efficacy of 95 Phonics Lesson Library™

Fall to Spring Formative and Summative Assessment Findings for Grades 4-5

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Understanding ESSA Evidence

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Educators search for high-quality research and evidence-based interventions to strengthen grant applications, to support comprehensive and targeted schools, or to implement new programming in their schools. Evidence requirements under the Every Student Succeeds Act (ESSA) are designed to ensure that states, districts, and schools can identify programs, practices, products, and policies that work across various populations.

Educational programs document their evidence of design, effectiveness, and impact in order to be eligible for federal funding. While there is no singular authority that determines a program's tier, the Department of Education's Office of Educational Technology provides standards to assess the varying levels of strength of research for education products.

The categories for ESSA Evidence are: strong (Tier 1), moderate (Tier 2), and promising (Tier 3) evidence of effectiveness, or demonstrates a rationale to be effective (Tier 4).

This product meets the requirements for Tier 2:

- In a quasi-experimental design, students who used the program are examined against a comparison group through matching.
- At least one quasi-experimental study (or combined with other studies) with the proper design and implementation with at least two teachers and a multi-site sample of 350 students showed statistically significant, positive findings.
- The study uses a program implementation that could be replicated.
- A third-party research organization has reviewed the documentation for ESSA validation.

When product designers leverage learning sciences to design and evaluate the effectiveness of their programs, educators can better target instruction, and students' skills soar. A matched, quasi-experimental study design using standardized assessment data, an analysis of student growth, and educator feedback demonstrates this product's efficacy, meeting the criteria for LXD Research's ESSA Tier 2 Evidence.

– Rachel Schechter, Ph.D., Founder of LXD Research

EFFICACY STUDY SUMMARY
2023-2024

PROGRAM DESCRIPTION

95 Phonics Lesson Library (95 PLL) is a phonics intervention program designed for grades K-5. It provides explicit, systematic, and sequential instruction of phonics, syllable types, and word analysis strategies for single and multi-syllable words in a small group setting. The model has a clear scope and sequence and includes many articulatory features, decoding and encoding lessons, and decodable text passages allowing structured transfer-to-text processes.

STUDY DETAILS

Location
Ohio

Analysis Sample Sizes
4th and 5th graders
- 2 treatment schools, 157 students
- 3 comparison schools, 260 students

Demographics
76% Minority | 29.5% Disability | 9% LEP

Time Frame
August 2023-May 2024

Implementation Description
- Treatment teachers used 95 PLL for their daily Tier 2 intervention
- Comparison teachers used a mix of West Virginia Phonics, MindPlay Reading, and other resources

Methodology
- BOY, MOY, and EOY scores on Acadience Reading and Ohio State Test

STUDY CONTEXT

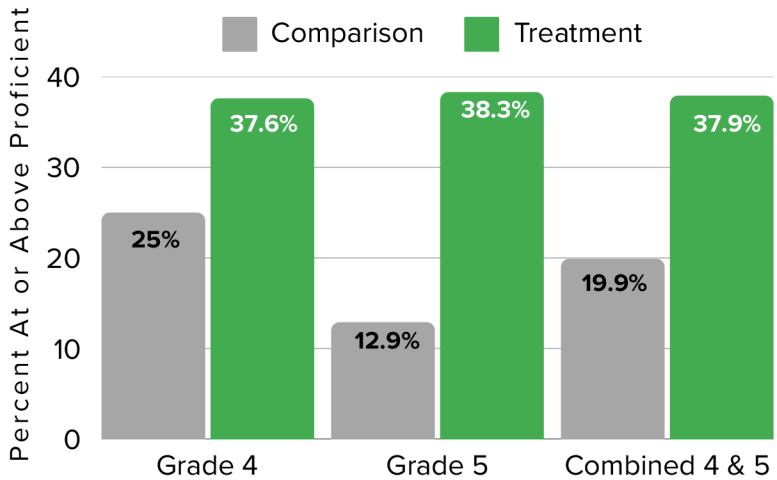
95 Percent Group hired LXD Research as a third-party researcher to investigate the impact of 95 PLL on 4th and 5th grade literacy in Ohio. Two schools used 95 PLL and 3 were comparison. Using the district's formative assessment of Acadience Reading to see the progress at mid-year and the Ohio State Test to see the growth at the end-of-year (EOY), LXD ran analyses to understand impact of 95 PLL on test scores.

KEY FINDINGS

95 PLL 4th and 5th graders showed growth on the middle-of-year (MOY) Acadience assessment with 24% of 4th graders and 15% of 5th graders being On/Above Benchmark, closing their reading gaps in half a year. 21% of comparison students were On/Above Benchmark in grade 4, 6% less than at beginning-of-year (BOY), and 7% in grade 5. On the EOY Ohio State Test, 95 PLL students in both grades showed significantly higher Spring 2024 scores than their comparison peers. These results shows the impact of 95 PLL throughout the year on both formative and summative assessments.

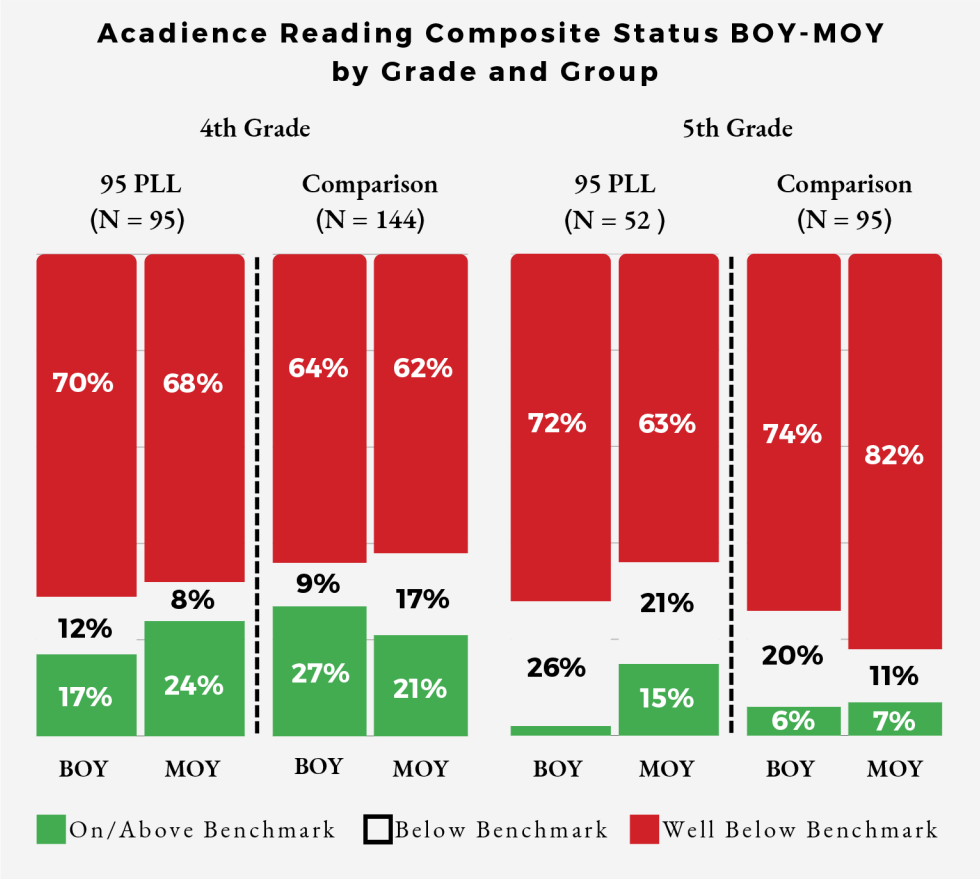
More 95 PLL 4th and 5th graders are considered On/Above Benchmark on the MOY Acadience assessment. Both 4th and 5th graders scored signifcantly higher on the Ohio State Test in Spring 2024 with high practical significance of .58 and .87, and more likely be to be considered At/Above Proficient.

Percentage of Students At or Above Proficient by Grade and Group



ACADIENCE FINDINGS

At baseline, both the 4th and 5th grade samples had similar average composite scores. Over the first half of the year, 95 PLL fourth graders' Acadience scores grew 5 points more from BOY-MOY was 5 than the comparison group. Fifth grade 95 PLL students (68 points) grew more than double the comparison group (25 points), a significant difference ($p < .05$, Cohen's d effect size = .68). These overall score differences were also detected in the benchmark status change. By mid-year, the 95 PLL schools had more than twice the percentage of students on grade level mid-year relative to the comparison group. 24% of 95 PLL 4th graders and 15% of 95 PLL 5th graders were considered On/Above Benchmark by the MOY.



An analysis was conducted on a subgroup of interest to examine growth for students considered "Well Below Benchmark" at BOY. In this subgroup, Grade 4 students in the 95 PLL group made similar gains in Acadience reading scores to the comparison group at MOY. However, fifth grade 95 PLL students who began the school year well below grade level grew significantly more from BOY to MOY (57 points) than the comparison group students in the same subgroup (23 points; $p < .05$, Cohen's d effect size = .63).

Groups	BOY to MOY (mean raw score)	Mean Growth from BOY-MOY	T-Test Result
95 PLL	132 to 188	57	95 PLL grew more from BOY to MOY: t = 2.7, p < .05, Cohen's d = .63
Comparison	123 to 145	23	

OHIO STATE TEST FINDINGS: EOY SCORES

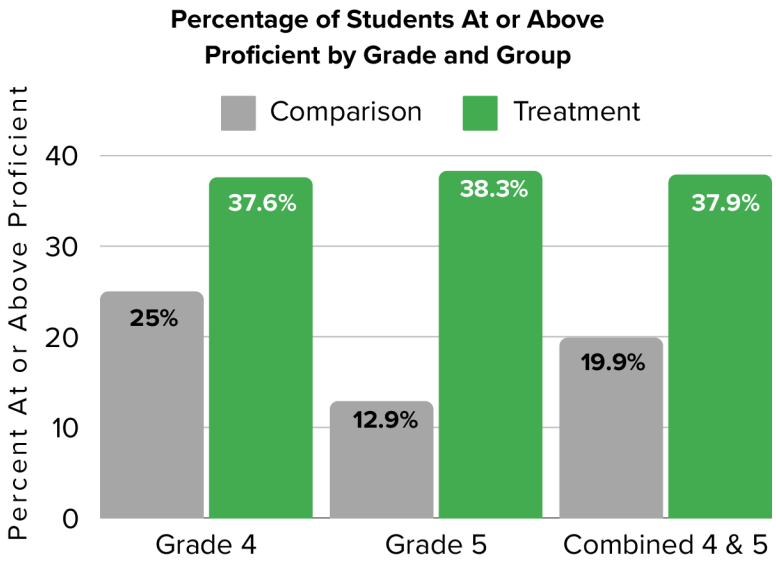
As this study investigated 4th and 5th graders, LXD also measured the impact on the Ohio State Test. Both fourth and fifth graders had significantly higher EOY Spring 2024 Ohio State Test reading overall scores than their comparison group peers.The 95 PLL Students in Grade 4 showed significantly higher spring 2024 OST reading overall scores (654.4) than their comparison group peers (640.4; $p < .001$), with a moderate effect size of .58 indicating moderate to high practical significance. Likewise, 95 PLL Students in Grade 5 showed significantly higher OST reading overall scores (653.4) than their comparison group peers (635.6; $p < .001$) with a strong effect size of .87 showing high practical significance.

Ohio State Reading Test Scores Spring 2024

Grade	Group	OST Mean	Significance and Cohen's d Effect Sizes
Grade 4	Comparison	640.4	p < .001, Cohen's d = .58
Grade 4	Treatment	654.4	
Grade 5	Comparison	635.6	p < .001, Cohen's d = .87
Grade 5	Treatment	653.4	

OHIO STATE TEST FINDINGS: PERFORMANCE LEVELS

LXD Researchers compared the relative percentage of students "At or Above Proficient" benchmark groups in Spring 2024. 95 PLL Students in Grades 4-5 combined were significantly more likely to be at or above proficient (37.9%) than their comparison group peers (19.9%) by Spring 2024 ($p = .049$, Phi coefficient effect size = .04). These trends were similar for both grades 4 and 5 as shown below.



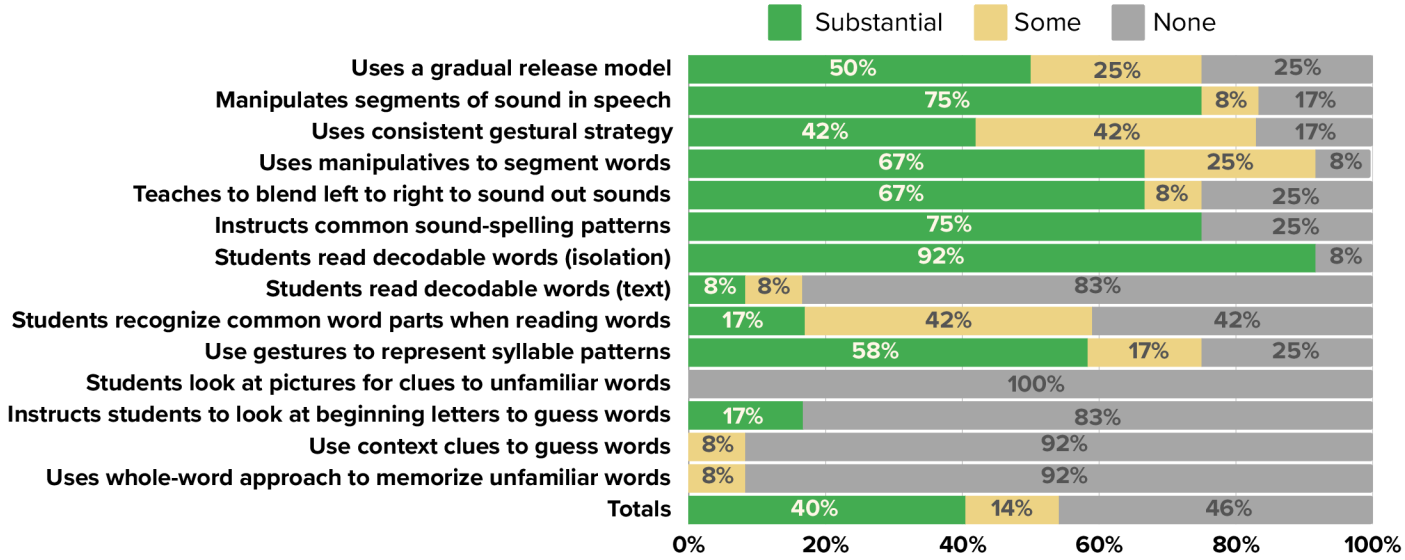
EDUCATOR VOICES

LXD Researchers interviewed administrators and conducted teacher focus groups of the 95 PLL schools to understand their perspective of 95 PLL implementation and feedback from their educators. Overall, their thoughts were positive indicating how they are noticing a difference within their students confidence levels when reading as well as their educator's confidence levels as they are learning how to teach reading better and becoming stronger teachers because of it.

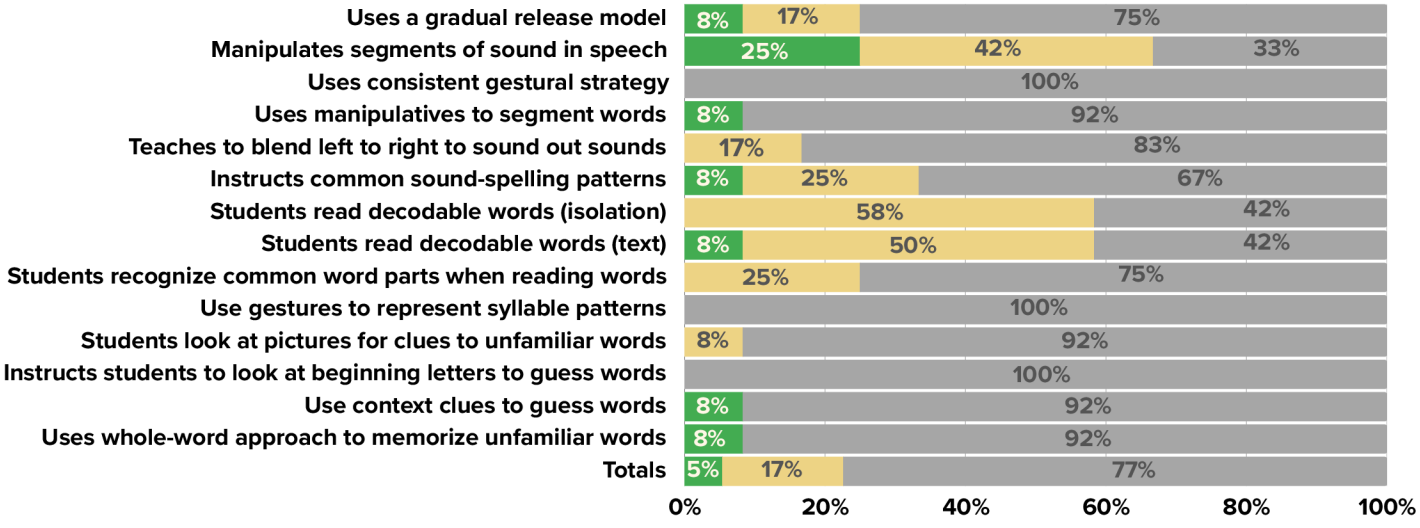
SITE OBSERVATIONS - PHONICS INSTRUCTIONAL STRATEGIES

LXD Researchers visited 12 classrooms implementing 95 PLL and 12 classrooms serving as comparison in Youngstown. The researchers noted the level of instructional strategies focusing on phonics during the lesson time observed. 95 PLL classrooms had more substantial levels of phonics instructional strategies than the comparison with 40% of lesson time observed in total showing a substantial amount of the strategies while comparison only had 5% overall. The observation results highlighting the substantial day-to-day phonics instruction in the classroom supports the assessment results indicating significant student growth from BOY-EOY. See report for more details on site observations.

95 PLL Classrooms



Comparison Classrooms



Evaluating the Efficacy of 95 Phonics Lesson Library™

Fall to Spring Formative and Summative Assessment Findings for Grades 4-5

Conducted by Rachel L. Schechter, Ph.D., Rachel Gross, Ph.D, and Isabella Ilievski, Ed.M.
LXD Research at Charles River Media Inc.

Abstract

This study, conducted by LXD Research, evaluates the 95 Phonics Lesson Library (95 PLL), a targeted phonics intervention program in a majority low SES, ethnically diverse midwestern school district from 2023-2024. Using a quasi-experimental mixed-method design, this study compares reading outcomes of fourth and fifth graders using 95 PLL with a similar comparison group in the school district. To assess growth across the school year, Acadience Reading was analyzed at the middle-of-year (MOY), and the Ohio State Test (OST) reading assessment was analyzed at the end-of-year (EOY). MOY results indicated 95 PLL students outperformed their comparison peers in Acadience overall scale scores. These differences were significant for fifth grade students. Likewise, significantly more 95 PLL students "caught-up" and became on or above grade level on the Acadience reading assessment at MOY than their comparison group peers. These mid-year findings were replicated in the EOY analysis of the Ohio State Test (OST), as the fourth and fifth graders significantly outperformed their comparison group peers on OST reading in Spring 2024. Additional qualitative components of the study included educator interviews, surveys, focus groups, and site observations. In these qualitative responses, educators indicated that 95 PLL had a positive impact on student reading outcomes. Several educators observed a "learning curve" to implementing the 95 PLL program as fourth and fifth grade educators expressed a desire for additional training to improve their initial implementation of the program. Site observations of 95 PLL classrooms revealed higher student engagement and frequent use of phonics-focused instructional strategies, whereas comparison classrooms demonstrated lower engagement, minimal phonics instruction, and heavy reliance on technology. Despite some implementation challenges, the findings of this study indicate that 95 PLL implementation was associated with significantly stronger reading achievement than the comparison group, and closing of academic gaps on formative and summative assessments.

Table of Contents

Abstract 1
Introduction 1
Research Questions 2
Methods 2
Treatment Program Description 3
Comparison Program Description 3
Reading Assessments 3
Acadience Reading 3
Ohio State Test 4
Sample Descriptions 4
Baseline Reading Scores 6
Results 8
Analysis Plan 8
Student Outcomes 8
Acadience for All Students 8
Acadience Analysis: Students Well Below Grade Level at BOY 9
Ohio State Reading Test 10
OST Reading Test Benchmark Level 11
Educator Feedback & Observation Findings 11
Educator Survey 11
Educator Interviews 12
Educator Focus Groups 14
Site Observations 14
Discussion 17
Conclusion 19
References 20
Appendix 21

Introduction

The COVID-19 pandemic heightened challenges in ensuring food security and health, showcasing a tangible effect on students' educational outcomes. Between Fall 2019 and Fall 2021, reading achievement significantly decreased across all grades, with the most pronounced declines observed in students in grades 3–5 (Kuhfeld et al., 2022). Further analysis of average reading achievement revealed that communities of color were disproportionately impacted, with Hispanic, American Indian and Alaska Native (AIAN), and Black students in high-poverty schools experiencing the most substantial decline (Kuhfeld et al., 2022). This decline led to the widening of reading gaps among 3rd-5th graders across race/ethnicity and income groups that pre-existed before the pandemic.

Upon the return of students to schools in 2021, there was a notable narrowing of measurable disparities in achievement between Black and Hispanic students and their Asian and White counterparts in grades K–2 (Amplify, 2023). However, this positive trend did not extend to grade 3. The gap between the 25th percentile and 75th percentile in fourth graders continues to widen in 2022 compared to 2019 (NAEP, 2022). The persistence of these academic gaps into grade 5 is alarming, as failure to address them at this stage could result in further hardships for marginalized students, given the intricate social dynamics and heightened academic pressure accompanying the transition from grade 5 to middle school (U.S. Department of Education, 2018).

Immediate and targeted interventions are imperative to mitigate these disparities and ensure an equitable educational foundation for all students. These interventions should leverage the science of reading framework in instructional methods, as demonstrated by research indicating significant improvements in students' reading abilities (Shanahan, 2010). The current research points to phonics instruction, particularly the development of decoding skills for reading multisyllabic words, as essential for improving the reading abilities of students in grades 4–9 who struggle with complex texts (Toste et al., 2019). Moreover, the science of reading dissects reading comprehension (RC) ability into two components—decoding (D) and language comprehension (LC). This analytical breakdown empowers intervention programs to tailor support for low-performing students based on their specific challenges with either decoding or language comprehension. According to the Institute of Education Sciences What Works Clearinghouse guide on reading interventions, as students advance in grade levels, the complexity of words in their reading materials increases, requiring more sophisticated phonics skills (What Works Clearinghouse, 2022). These practices are not only applicable within the context of supplemental programs in elementary settings but are also adaptable for middle and high school reading courses, ensuring a continuum of support across educational stages (Vaughn et al., 2022).

The 95 Phonics Lesson Library™ (95 PLL) is a science of reading-based intervention program that utilizes phonics to close reading gaps through explicit and systematic instruction. To understand 95 PLL's effect on specifically fourth and fifth grade students, 95 Percent Group partnered with

Learning Experience Design (LXD) Research to conduct a third-party real-time efficacy study of the 95 Phonics Lesson Library intervention program during the school year 2023-2024 in Youngstown City School District in Youngstown, Ohio. The comparison schools used West Virginia Phonics and MindPlay Reading. This is a quasi-experimental design because students in multiple schools who used 95 Phonics Lesson Library were matched and compared to students who did not use the program.

Research Questions

How did overall reading scores differ from the schools that did not use 95 PLL?

- Did the treatment group show greater growth than the comparison group in Acadience Reading from BOY-MOY?
- Did the treatment group show greater Ohio State Test reading outcomes than the comparison group at EOY?

What are teacher and administrator perceptions about the quality and impact of the 95 PLL?

- What were teachers' and administrators' initial reactions to the 95 PLL, and associated materials, content, pacing, and professional development?
- What suggestions did they have for improvement?

Methods

The goals of the research activities were to understand the nature and extent of the implementation of 95 PLL and the literacy intervention program in comparison schools as well as to understand growth over the course of the academic year. Two schools in the district were selected to use the 95 PLL and the remaining three schools did not use the program. To increase the rigor of the study design, one school was randomly selected to be removed from the comparison group, leaving two treatment schools and three comparison schools. During the 2023-2024 school year, district leaders supported data collection to complete the study and support product coaching services. Those activities included:

- Conducting the Acadience Reading assessment for all students at the beginning of the year (BOY) and middle-of-year (MOY), and sharing the data with the research team.
- Conducting 95 Phonics Screener for Intervention (PSI) at the start of the year and every three weeks for progress monitoring (with treatment schools)
- Participating in qualitative data collection activities throughout the year for 95 PLL schools and comparison schools: site observations, educator focus groups, administrator interviews, and educator perception surveys
- Sharing the end-of-year (EOY) Ohio State Test (OST) reading assessment data with the research team

This report focuses on relative gains from BOY to MOY on Acadience Reading, treatment vs comparison group OST scores in Spring 2024, and qualitative perceptions of 95 PLL.

Treatment Program Description

The 95 Phonics Lesson Library™ (95 PLL) is a collection of lessons for educators seeking phonics intervention instruction. The lessons are categorized into three separate boxed sets (i.e. Basic, Advanced, and Multisyllable) that accommodate various grade levels and instructional needs. The goal of 95 PLL is to provide comprehensive sets of lesson materials for teachers to use. It is designed primarily for Tier 2 phonics intervention, targeting specific gaps in phonics skills that can hinder reading progress. It follows a systematic approach that progresses from basic letter-sound correspondences to decoding multisyllabic words, supported by explicit instruction in phonics, syllable types, and word analysis strategies recommended by researchers like Maria Laura Castiglioni and Linnea Ehri. Moreover, 95 PLL can be used to supplement Tier 3 instruction or enhance Core instruction by targeting phonics skills development. As part of 95 Percent Group's One95 Literacy Ecosystem, which includes the 95 Phonics Core Program (PCP), 95 PLL aligns with a structured literacy solution.

Comparison Program Description

The West Virginia Phonics is a free, open-source curriculum for early reading instruction that aligns with the science of reading developed by the West Virginia Department of Education (West Virginia Board of Education, 2023). It is designed to equip educators with effective tools for fostering foundational literacy skills in young learners. The program is anchored in ten key areas encompassing short vowels, consonant blends, and multisyllabic word decoding and delivers explicit instruction through activities and assessments. West Virginia Phonics aims to develop competent readers by laying a strong foundation in phonics knowledge and understanding. MindPlay Reading was also used as part of individualized instruction for all students in the comparison groups.

Reading Assessments

Acadience Reading

Acadience Reading is a universal screening and progress monitoring assessment designed to gauge the acquisition of early literacy skills from kindergarten through sixth grade (Acadience Learning, 2024). The assessment comprises six measures (*see Table 1.*) that indicate skills necessary for proficient reading (Acadience Learning, 2020). These measures are systematically employed to routinely monitor the development of early literacy skills, to facilitate the provision of timely instructional support, and to prevent potential reading difficulties later on.

Table 1. Acadience Reading K-6 Measures and Indicators

Acadience Reading Measures	Indicators of Basic Early Literacy Skills	Grades
First Sound Fluency (FSF)	• Phonemic awareness	Kindergarten
Phoneme Segmentation Fluency (PSF)	• Phonemic awareness	Kindergarten
Letter Naming Fluency (LNF)	• Indicator of risk	Grade 1-2
Nonsense Word Fluency (NWF)	• The alphabetic principle and basic phonics	Grade 1-2
Oral Reading Fluency (ORF)	• Advanced phonics and word attack skills • Accurate and fluent reading of text • Reading comprehension	Grade 2-6
Maze	• Reading comprehension	Grade 3-6

Ohio State Test

The Ohio State Test (OST) is a standardized, summative assessment of English Language Arts and other subject areas, testing students from Grades 3-12 in their knowledge and skills as defined by Ohio's ELA Learning Standards. The OST serves to monitor ELA growth and performance at the individual and school levels, with the goal of guiding and strengthening education practice and student outcomes. The OST is administered at the end of each academic year.

Sample Descriptions

Study participants included students in grades 4 and 5, beginning in the fall of 2023. Data requested for each student included rostering data, demographic data, and baseline reading scores in the form of the fall 2023 Acadience Reading assessment. The sample consisted of 157 students in the 95 PLL condition, and 260 comparison group students. For full details of the original sample, please see Table 2, below.

Table 2. Sample size at Fall 2023 (i.e., Baseline)

Grade	School Group	Number of students at BOY
Fourth	95 PLL	100
Fourth	Comparison	153
Fifth	95 PLL	57
Fifth	Comparison	107
All Grades	Total	417

Demographic data for students by grade and group is located in Tables 3a, 3b, & 3c, below. LXD Research tested for differences between the treatment and control groups by grade level for student ethnic group and by gender. For ethnicity, a difference in the percent of students who were minorities was detected for fourth grade and for fifth grade. (The chi-square statistic is reported in Appendix A.) No differences were detected for gender for either grade level.

Table 3a. Sample Demographics Part I

Grade	Race/Ethnicity			Gender		
		Treatment	Comparison		Treatment	Comparison
Fourth	Minority	73%	89%	Male	51%	52%
Fifth	Minority	79%	91%	Male	54%	57%

Chi-square tests found no significant differences between the treatment and control groups by grade level in percent of students in foster care, with resident status, or whether students were classified as gifted. In the fourth grade sample, the comparison group had three students who were gifted at reading, and there were none in the treatment group. Similarly, the fifth grade comparison group had one student classified as gifted in reading whereas the treatment group had none.

Table 3b. Sample Demographics Part II

Grade	Condition	Foster Placed	Resident Status	Classified as Gifted
Fourth	Treatment	1%	96%	1% 1 VPA
	Comparison	2%	96%	2% 2 Reading 1 Creative Thinking & Reading
Fifth	Treatment	1%	96%	2% 1 VPA
	Comparison	1%	96%	2% 1 VPA 1 Reading

The percent of students with a disability classification was not significantly different across groups. However, the difference was approaching significance for fourth grade, in which there were 32% of students with disabilities for the treatment group versus 22% in the comparison group. There were no significant differences for either grade in the percent of students with a 504 plan or the percent of students who were English language learners (including the percent in their first year), or in homeless status. There were no students with migrant status in the sample.

Table 3c. Sample Demographics Part III

Grade	Condition	Disability	504 Plan	LEP	Homeless Status
Fourth	Treatment	32%	3%	9%	4% None
	Comparison	22%	2%	8%	7%
Fifth	Treatment	27%	4%	9%	4%
	Comparison	26%	2%	11%	7%

Baseline Reading Scores

LXD examined the beginning-of-year scores for students in each grade for each test to determine whether the groups were similar at the start of the year.

To establish baseline equivalence for each grade and both assessments, LXD tested whether the fall 2023 Acadience overall reading score means between the treatment and comparison groups

were statistically similar (i.e., less than a quarter of the comparison group's BOY standard deviation (ESSA, 2024). For both grades, the mean difference was smaller than the .25 SD threshold, and thus, evidence of baseline equivalence was established. Further no statistically significant differences were found. Baseline equivalence computations and t-test results are shown in Table 4 below.

Table 4. Acadience Reading Composite Scores for the BOY Baseline Equivalence

Grade	Treatment Group		Comparison Group		Is there a statistically significant difference?	Distance in SD (equivalence)
	Mean	Standard Deviation	Mean	Standard Deviation		
Fourth	174	130.9	171	133.6	No $t = 0.2$, $p = .85$	.02 SD (equivalent)
Fifth	185	112.9	164	118.8	No $t = 1.1$, $p = .27$	.18 SD (equivalent)

Evidence for ESSA guidelines also indicate that differences in attrition between the treatment and comparison groups must be minimal from baseline assessment to EOY assessment (i.e., less than 15%) to avoid the potential for bias (ESSA, 2024). In addition, the study must include at least 350 students at both occasions of measurement in the analytic sample across the two conditions. In this study, baseline scores for the main analysis were Fall 2023 Acadience Reading Overall Scores at baseline, and Spring 2024 OST Overall Reading Scores as our primary outcome. For both grades, differential attrition was less than 15%, and therefore met the requirements for minimal differential attrition. In addition, the analytic sample used in the main analysis included 381 total participants. As such, the sample characteristics meet evidence for ESSA guidelines for baseline equivalence, differential attrition, and sample size (ESSA, 2024). For full details on attrition and analytic sample size, please see Table 5, below.

Table 5. Sample size: Baseline Acadience Scores & Attrition Level for EOY OST Scores

Grade	School Group	Number of students at BOY	Students with BOY & EOY Data	Percent Attrition	Percent Differential Attrition
Fourth	95 PLL	100	93	7.0%	1.5%
Fourth	Comparison	153	140	8.5%	
Fifth	95 PLL	57	47	17.5%	11.9%
Fifth	Comparison	107	101	5.6%	
All Grades	Total	417	381	8.6%	n/a

Results

Analysis Plan

Data were collected for the current study from fall 2023 through Spring 2024. Acadience formative assessment was administered in the fall of 2023 and winter of 2024, and the Ohio State Test was administered in the spring of 2024. Therefore, the Acadience fall scores were used as baseline scores to demonstrate equivalence of the two conditions, and as a reference for BOY-MOY growth. As such, the BOY-MOY growth in Acadience reading scores served as an indicator of the effect of the program over the first half of the school year. The summative OST scores were reliably administered to virtually all grade 4 and 5 students in the spring of 2024. Therefore, the OST summative test's overall reading scores and benchmark level data were used to determine the relative impact of 95 PLL from fall 2023 to Spring 2024 (i.e., BOY-EOY). In addition to baseline Acadience scores, a series of theoretically-meaningful covariates were included in the ANCOVA model (see Tables A3-A5 in the Appendix for full details).

Student Outcomes

Acadience for All Students

The 95 PLL condition showed greater growth over the first half of the year relative to the comparison group. In Grade 4, the 95 PLL school student's Acadience scores growth from BOY-MOY was 5 points greater than the comparison group (not statistically significant; for full details, see Table 6, below). Regarding benchmark status, an increased proportion of students reached their grade-level benchmark in the 95 PLL schools, while the comparison school's proportion of students on grade level declined from BOY-MOY (see Figure 1 below).

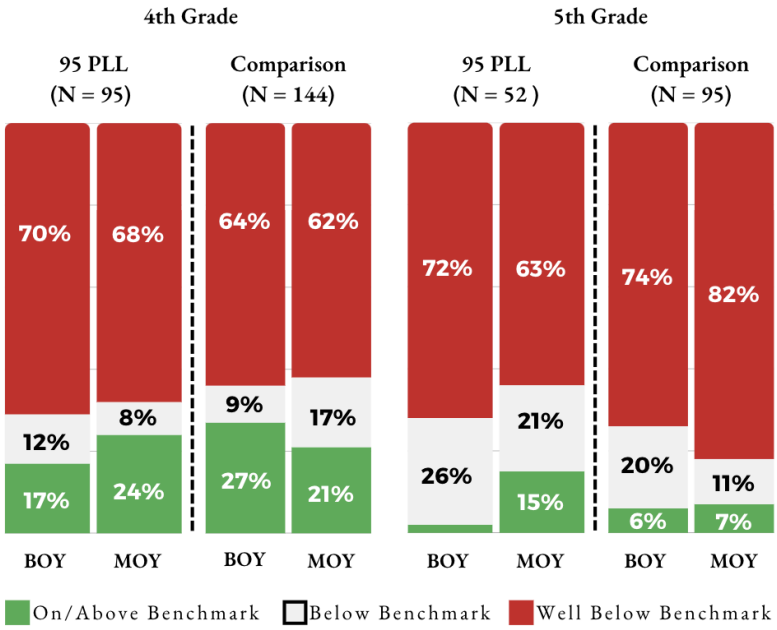
Table 6. Acadience Reading Composite Scores and T-tests Comparing Growth from BOY to MOY

Grade	Condition	BOY		MOY		Mean Growth from BOY-MOY	Difference in Mean at MOY	Significant differences in BOY-MOY Growth?	Significant differences in MOY means?
		Mean	SD	Mean	SD				
Fourth	**95 PLL (N=95)**	174	130.9	211	132.5	37 points	95 PLL was 8 points higher at MOY	No, $t = 0.9$, $p = .38$	No, $t = 0.5$, $p = .65$
	Comparison (N=144)	171	133.6	203	137.5	32 points			
Fifth	**95 PLL (N=52)**	185	112.9	253	131.5	68 points	95 PLL was 64 points higher at MOY	Yes, $t = 4.0$, $p < .05$, Cohen's $d = .68$	Yes, $t = 2.9$, $p < .05$, Cohen's $d = .51$
	Comparison (N=95)	164	118.8	189	122.4	25 points			

For Grade 5 students in the analytic sample, the 95 PLL group's mid-year Acadience score gains were more than double that of the comparison group; a statistically significant difference ($p < .05$, Cohen's d effect size = .68). In addition to differences in growth, Grade 5 PLL students also showed significantly higher spring Acadience Reading mean scores (253) than the comparison group (189; $p < .05$, Cohen's d effect size = .51; see Table 6 above).

This growth was also detected in the change in benchmark status of Grade 5 students. The 95 PLL schools had more than twice the percentage of students on grade level mid-year relative to the comparison group. The 95 PLL schools also had a reduction in students testing Well Below Grade Level while the comparison group's proportion increased (see Figure 1, below).

Figure 1. Acadience Reading Composite Status BOY-MOY by Grade and Group



Acadience Analysis: Students Well Below Grade Level at BOY

An analysis was conducted on a subgroup of interest to examine growth for students considered "Well Below Benchmark" at BOY. In this subgroup, Grade 4 students in the 95 PLL group made similar gains in Acadience reading scores to the comparison group at MOY. However, fifth grade 95 PLL students who began the school year well below grade level grew significantly more from BOY to MOY (57 points) than the comparison group students in the same subgroup (23 points; $p < .05$, Cohen's d effect size = .63). Together, these findings indicate that by mid-year, 95 PLL students demonstrated stronger growth in overall reading scores and benchmark status relative to their comparison group peers, and that this difference was greater in magnitude, as well as statistically significant, for Grade 5 95 PLL students (see Table 7, below).

Table 7. Grade 5 Acadience Reading Score Growth for Well Below Benchmark Students from BOY to MOY by Condition

Groups	BOY to MOY (mean raw score)	Mean Growth from BOY-MOY	T-Test Result
95 PLL	132 to 188	57	95 PLL grew more from BOY to MOY: $t = 2.7$, $p < .05$, Cohen's $d = .63$
Comparison	123 to 145	23	

Ohio State Reading Test

The next set of analyses included ANCOVAs of EOY OST overall scores between the 95 PLL and comparison groups at each Grade 4 and 5. Covariates in the ANCOVA model included Acadience reading score at baseline, racial-ethnic minority status, disability status, LEP status, and 504 plan status (For full ANCOVA details, see Appendix A3-A5).

The 95 PLL Students in Grade 4 showed significantly higher Spring 2024 OST reading overall scores (654.4) than their comparison group peers (640.4; $p < .001$) after controlling for covariates. Likewise, 95 PLL Students in Grade 5 showed significantly higher OST reading overall scores (653.4) than their comparison group peers (635.6; $p < .001$), controlling for the same covariates. These EOY findings support the mid-year findings indicating stronger reading outcomes for 95 PLL students than the comparison group. For full details, see Table 8, below.

Table 8. ANCOVA Results for Grade 4 & 5 Ohio State Test Spring 2024 Scores

Grade	Group	OST Mean[1]	SD	n	Significance	ηp^2 Effect Size	Cohen's d Effect Size[2]
Grade 4	Comparison	640.4	44.49	140	$p < .001$	.08	.58
Grade 4	Treatment	654.4	44.58	93			
Grade 5	Comparison	635.6	33.17	101	$p < .001$	.16	.87
Grade 5	Treatment	653.4	35.00	47			
Combined Grade 4 & 5	Comparison	634.1	40.14	241	$p < .001$	.10	.67
Combined Grade 4 & 5	Treatment	649.3	41.49	140			

[1]Mean indicates the Estimated Marginal Mean as a result of the ANCOVA analysis, taking into account the effect of covariates. The raw means are included in the Appendix.

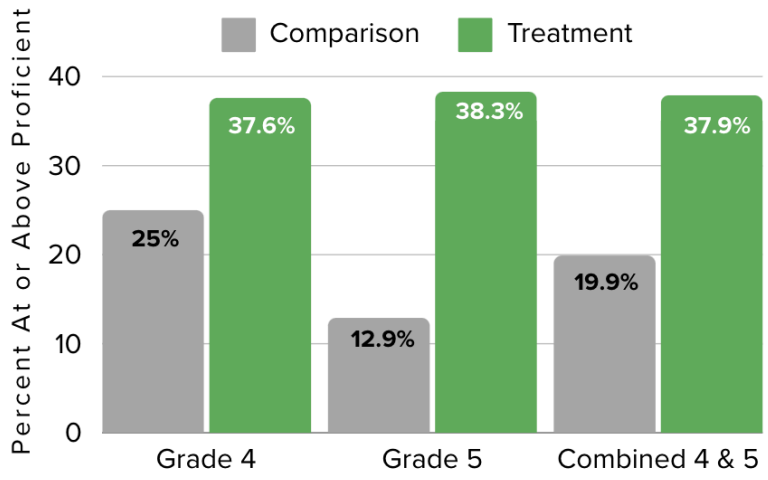
[2]Cohen's d effect size was calculated by converting the partial eta squared (ηp^2) effect size to Cohen's d for ease of interpretation.

OST Reading Test Benchmark Level

The OST summative assessment includes a reading benchmark status for each student of Limited, Basic, Proficient, Accomplished, or Advanced. Limited and Basic are below grade level scores, and Proficient, Accomplished, or Advanced indicate at or above proficient for their grade level. LXD researchers compared the relative percentage of students "At or Above Proficient" benchmark groups in spring, 2024.

95 PLL Students in Grades 4-5 combined were significantly more likely to be at or above proficient (37.9%) than their comparison group peers (19.9%) by Spring 2024 ($p = .049$, Phi coefficient effect size = .04). These trends were similar for both grades 4 and 5 (for full details, please see Figure 2, below).

Figure 2. Percentage of Students At or Above Proficient by Grade and Group



Educator Feedback & Observation Findings

Educator Survey

A survey was conducted among 14 educators from the two treatment schools, primarily consisting of classroom teachers, with three participants serving as interventionists. The participants' teaching experience varied from 1 to 20 years. The most frequently-used Tier 1 product was Benchmark, and all teachers used 95 PLL for their Tier 2/3 interventions. Intervention instruction was provided by a combination of teachers, special educators, and reading interventionists. Approximately half of the participants reported dedicating 60 minutes daily to intervention, with 29% spending 30 minutes per day. All participants expressed some level of comfort with using and teaching 95 PLL, although 29% reported only being somewhat comfortable. 15% of participants felt that 95 PLL was not well aligned with the Tier 1 reading program, and 23% were

"unsure" of its alignment. However, most participants found 95 PLL to be beneficial for struggling readers and supportive of students' foundational literacy skills.

Regarding 95 PLL components, the placement tests, word cards, and student manipulative kits were reported to work well for most teachers and were most frequently used, and the STAR digital teacher companion was used less often, indicating a preference for the tangible PLL features. More than half of the participants felt they had sufficient time to implement 95 PLL as instructed, although passages were reported to be the areas where teachers spent more time, as struggling readers took longer to read the passages. Two participants mentioned that sight words and chip kits had to be removed to fit the lesson within the given timeframe.

Furthermore, the majority of participants received professional learning to support the implementation of 95 PLL through 95 Percent Group. Specifically, 46% of participants attended the initial implementation training provided by the 95 percent group, and 36% received onsite coaching. The quality of the 95 PLL professional learning was reported to range from fair to excellent by the participants. Half of the participants indicated that they felt objectives were fully met in the professional learning sessions. While all participants attended these sessions, 17% found them to be not engaging, and a small minority (two) teachers expressed that the training was insufficient. However, the majority of participants felt that the pacing of the sessions was ideal. This feedback suggests the need for a review of the professional learning sessions to ensure they are engaging and adequately comprehensive for all participants.

Educator Interviews

Treatment

LXD Research conducted four interviews with administrators and educators from schools implementing 95 PLL. These interviews revealed various perspectives on the program's implementation and efficacy. Participants' education experience ranged from a second-year instructional coach to a principal with seven years of leadership and 31 years of teaching. Participants had minimal prior experience with 95 Percent Group instructional programs, having previously used West Virginia Phonics Intervention and Keys to Literacy and Vocabulary.

95 PLL interventions were generally scheduled five days per week, with sessions ranging from 20-30 minutes each. One participant reported having an hour-long intervention period for 4th grade. It was common to use Acadience for initial student assessment and 95 Percent Group's Phonics Screener for Intervention (95 PSI) for group formation during the implementation of 95 PLL. Upon using 95 PLL, participants characterized the materials to be of high quality, appreciating the structured and purposeful instruction. It was noted by one educator that the detailed scripts were particularly helpful for instruction. Teachers reported seeing significant growth and confidence in students, with notable improvements in accuracy scores on Acadience assessments across all grades. For example, one educator noted 4th-grade scores improved from 29% at or above grade level at the BOY to 44% at or above by the EOY. One educator also

noted English Language Learners (ELL) and Special Education (SPED) students showed marked improvements in accuracy. More specifically, it is reported that students gained confidence in decoding multisyllabic words, which was an area of difficulty before using 95 PLL. This improvement was perceived to support student reading fluency and comprehension.

Educators also reported a significant boost in confidence in providing intervention instruction. The specificity and clarity of the 95 PLL materials reduced "guesswork" and provided a reliable framework for teaching. However, some participants noted some frustration at the beginning due to acclimation to new materials; but overall, teachers found the routines and pacing beneficial by the end of the year. All administrators reported their teachers wanted more training in best practices for using the materials, and that additional professional learning provided by 95 Percent Group would have helped to make the teachers feel more proficient in the materials early in the school year. Administrators noted that an educator strike in the district that occurred after the training may have also impacted the initial uptake of PLL use. The teachers went into more detail in the focus group (summarized in the next section).

Comparison

To understand what the comparison schools used for Tier 2 and Tier 3 instruction, in December 2023 and January 2024, LXD Research conducted interviews with three instructional coaches from separate comparison schools in the Youngstown School District in Youngstown, Ohio. The instructional coaches interviewed had extensive experience in education, averaging over 23 years of classroom teaching and coaching experience across grades K-7. They oversaw Tier 2 and 3 curricula for grades K-6 at their respective schools where they provided teaching support and resources. The coaches also participated in weekly professional learning community (PLC) sessions to analyze student achievement data and identify appropriate interventions. Students received 50 minutes of intervention daily, focusing on reading four days per week and math for one day. All coaches shared that their schools used West Virginia Phonics as the primary resource for intervention and utilized supplemental material as necessary. Some of these supplemental materials included 95 Percent Group Vocabulary Surge, Kid LiPS (Lindamood Phoneme Sequencing®), and other materials found on Teacher Pay Teachers - an online marketplace for buying and selling educator resources.

All coaches used Acadience scores for student placement in interventions and based instructional decisions on current data discussions with teachers. They also conducted classroom walkthroughs to assess reading instruction and provided support as needed. Overall, the comparison schools in Youngstown had highly-experienced coaches working to support teachers in understanding data from Acadience to support the decision-making process regarding student placement in the appropriate intervention tier.

Educator Focus Groups

LXD Research conducted focus groups in each of the two treatment schools. Participants included interventionists, SPED specialists, teaching assistants, and classroom teachers who used 95 PLL during the 2023-2024 school year with their 4th and 5th grade students. In these focus group discussions, participants discussed and shared their thoughts on program quality, impact, and professional development. Overall, participants held a largely positive view of the 95 PLL program, its student materials, and the supporting resources for educators. This district has extensive Science of Reading training and appreciated that 95 PLL aligned with and supported much of what they already had in place. However, as 4th and 5th grade teachers, many of them did not have a robust understanding of phonics instruction specifically, as the upper elementary grades tend to focus on reading comprehension. This lack of training impacted how quickly the teachers felt comfortable implementing the program, with the majority of them saying it took 4-6 weeks or longer to feel comfortable using the program with their students. They requested additional professional development and support, and suggested having trainings include more specific details for upper elementary grades, more hands-on experience with the materials before using with students, and for videos to be more realistic to actual classroom settings.

As noted earlier, a 23-day general teacher strike at the beginning of the school year may have impacted their feelings on the professional development and timeline for product use. Teachers noted that this gap in training to practice and a feeling of rushing back to normalcy after concluding the strike impacted their implementation of 95 PLL in the Fall heavily. However, teachers valued the structure of 95 PLL, and relied on the teacher's edition and resources to deliver high-quality instruction to their students.

Site Observations

Two LXD researchers visited Youngstown City Schools to observe the 95 PLL program in action, and to understand the intervention programming in the comparison classrooms. The observers viewed 12 classrooms using 95 PLL (6 fourth grade and 6 fifth grade) and 12 comparison classrooms (8 fourth grade and 4 fifth grade). The treatment school observations were all small group lessons, in which 1-6 students were using 95 PLL, and the rest of the class used Mindplay, completing individual activities. A limited number of the comparison classrooms had small-group interventions, but instead used their intervention time to have students complete reading/writing activities on Mindplay. The average lesson time observed in each classroom was 22.5 minutes. Notably, in all of the 95 PLL classrooms, researchers found that most of the students (above 75% of the class/intervention group) were engaged throughout the entire lesson observed. In contrast, only 42% of the comparison classrooms had student engagement over 75% throughout the lesson. LXD researchers observed that 100% of the 95 PLL classroom teachers used instructional language about phonics such as digraphs, vowel teams, short/long vowels etc. In contrast, 66% of comparison classroom teachers used instructional language when teaching - typically about a text/passage such as paragraph, summary, and punctuation. 100% of comparison classrooms used technology (individual chromebooks) whereas none of the 95 PLL lessons used technology.

Having specifically observed instruction and strategies that teachers used during the intervention period, 95 PLL teachers had a substantial amount of phonics instructional strategies present in 40% of the classrooms observed, while comparison classrooms only had 5%. Most notably, 92% of 95 PLL classrooms had a substantial amount of students reading decodable words in isolation whereas 58% of comparison classrooms only had some reading of decodable words in isolation. 95 PLL classrooms had a substantial level of using gestures to represent syllables as seen in 58% of their classrooms while no comparison classrooms included this strategy. Refer to Figures 3a-3b for more details on the phonics instructional strategies used in 95 PLL and comparison classrooms. When comparing reading comprehension and fluency instructional strategies taught in both groups, the differences between the treatment and comparison groups were minimal.

Figure 3a. Phonics Instructional Strategies in 95 PLL Classrooms

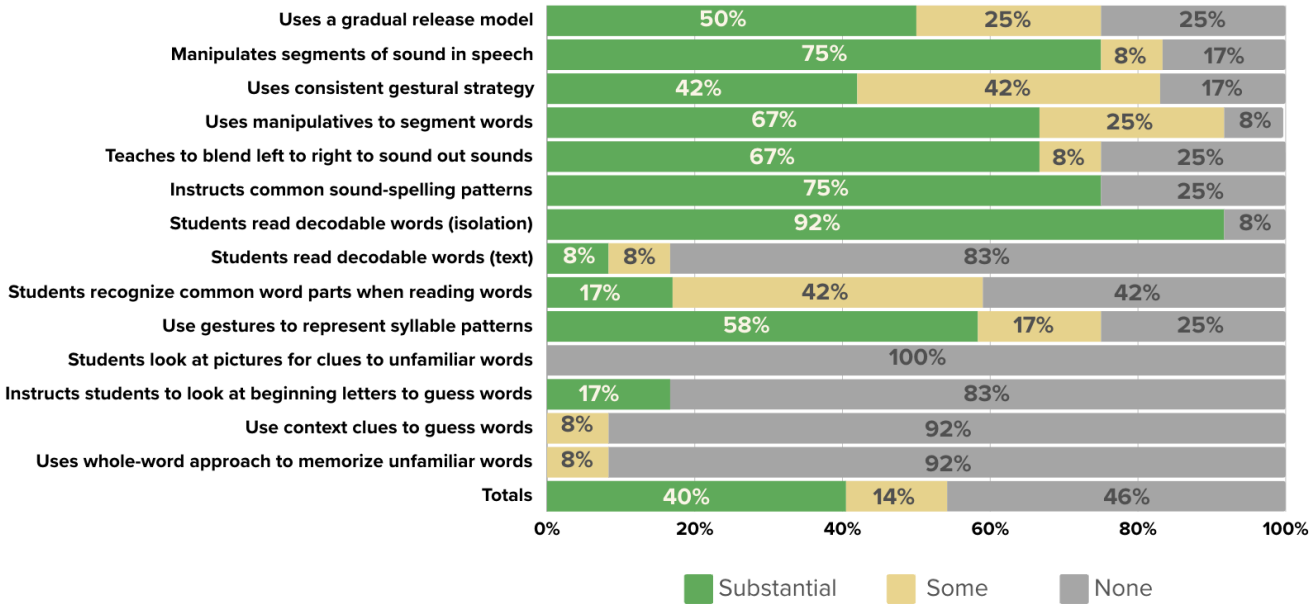
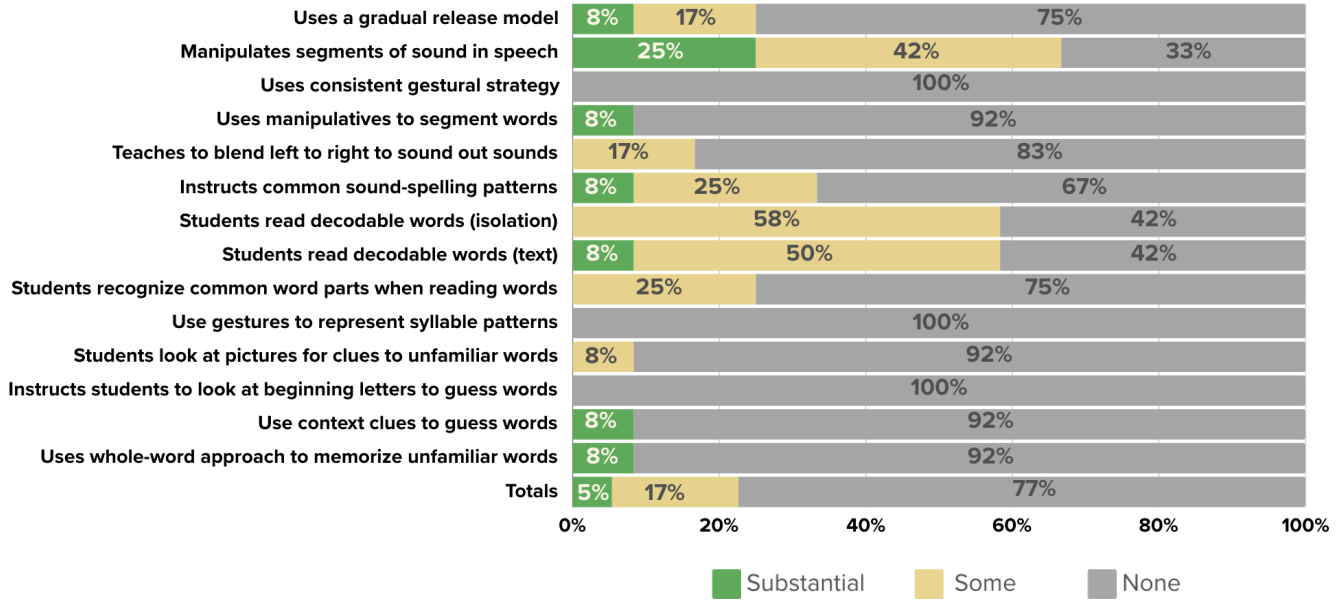


Figure 3b. Phonics Instructional Strategies in Comparison Classrooms



Regarding other practices, researchers observed that resources and activities used in the 95 PLL lessons were organized along a gradient of difficulty that aligned to the skills order in the program a substantial amount (25%). In the comparison classrooms, this alignment was more challenging to observe - researchers noted that no comparison group teacher had a substantial level of this practice, and only 8% of classrooms observed had some alignment between resources and program skill order. Refer to Figure 4a-4b below for a visual representation.

Figure 4a. Other Practices in 95 PLL Classrooms

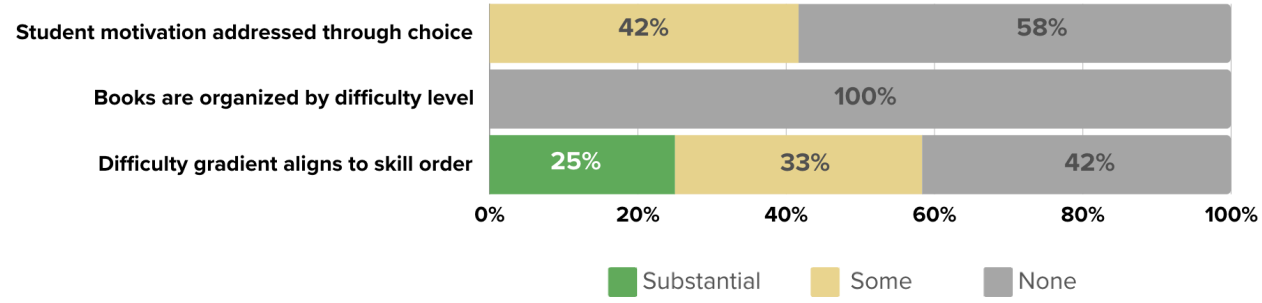
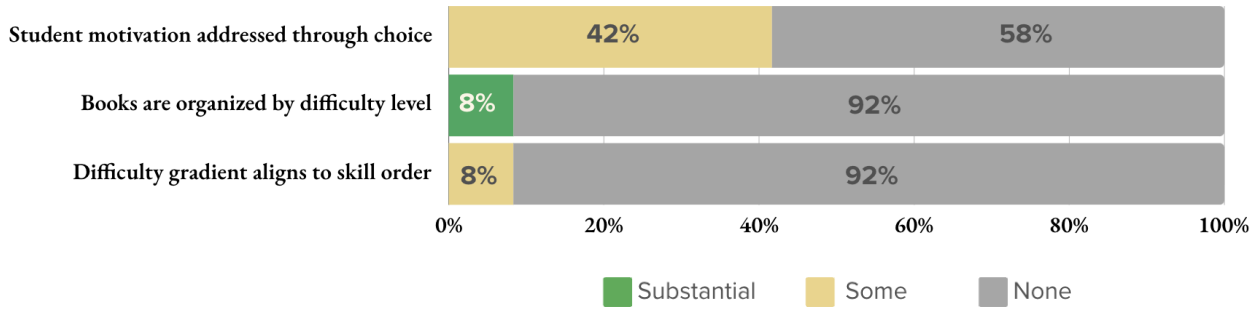
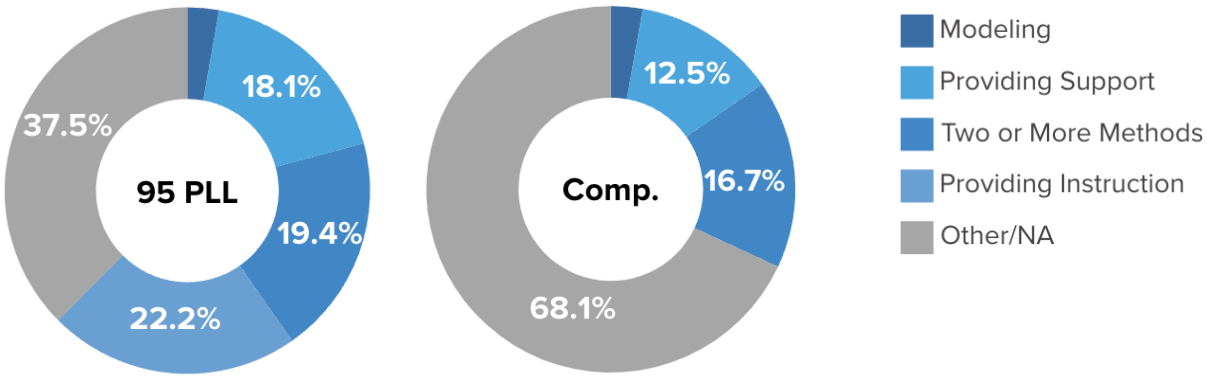


Figure 4b. Other Practices in Comparison Classrooms



Based on these same site observations, researchers also noted differences in teaching methods throughout the observed lesson. In 95 PLL classrooms, researchers observed teachers mainly providing instruction (22.2%), providing support (18.1%) or using multiple methods to instruct (19.4%, i.e. supporting, modeling, specifically instructing). While in the comparison classrooms, the majority of teachers were either providing specific instruction (16.7%) or fell under the category of "other" which researchers then identified as mostly progress monitoring students or completing other activities while students were working (68.1%). Refer to Figure 5 below for more details.

Figure 5. 95 PLL and Comparison Classroom Teaching Methods



Discussion

Intervention programs are responsible for closing reading gaps for these programs to be strong and effective. 95 PLL's systematic, explicit, and repeated instruction allowed students to accelerate their development in foundational reading skills. LXD followed students throughout the 2023-2024 academic year, analyzing student growth on Acadience for the mid-year formative assessment and on the Ohio State Test for the end-of-year summative assessment. Fourth and fifth grade students in 95 PLL schools showed more growth in literacy scores across the year than in comparison schools. Many students were able to catch up to their grade-level peers and end the year at or above grade level in reading. This literacy growth on the formative assessment

was replicated on the state summative assessment, showing 95 PLL's positive impact across multiple assessments.

On Acadience Reading, fourth graders made meaningful progress from BOY to MOY (middle-of-year), in which 95 PLL students showed greater growth in the first half of the year than their comparison group peers. Fifth grade students in 95 PLL schools outperformed the comparison schools by 64 points at MOY; a statistically significant difference, with an effect size of .51. This progress translated into a higher proportion of students reaching their grade level benchmark while comparison students' "Well Below Benchmark" group increased in size by MOY.

When looking at the growth across the school year, the Ohio State Test showed similar performance for 95 PLL students. 95 PLL fifth graders and fourth graders showed significantly higher Spring 2024 overall reading scores than the comparison fifth and fourth graders, with effect sizes of .58 and .87, demonstrating a high level of practical significance. This OST summative assessment finding reinforced the mid-year findings on the Acadience formative assessment, indicating a continued, robust effect of 95 PLL on reading across multiple assessments and grade levels.

This study did have some limitations. Regarding implementation, the qualitative activities revealed that teachers in this district went on strike for 23 days immediately after the 95 PLL professional development day, causing a significant gap between training and implementation. Additionally, this product was not only new to the teachers, but the phonics content and explicit structure was new to the upper elementary teachers in general. These aspects created a steep learning curve, causing high fidelity of implementation to take longer than expected. Interviews with the schools revealed that fourth graders in the study increased the intensity of the 95 PLL intervention with additional lessons each week during Winter 2024. Although there was no empirical data to account for this inconsistent implementation in the analysis, this issue may help to explain the relative magnitude of the OST year-end findings as compared to the mid-year Acadience findings. Likewise, monitoring of the comparison group's usage per student was not available. The potential impact of various intensities of usage of reading interventions with fourth and fifth graders could be a focus of future research.

Based on this study's extensive qualitative data collection, educators implementing 95 PLL expressed a positive overall view of the program, its materials, and its impact on student reading. Educators expressed how students were improving; as one teacher stated, "*I would 100% recommend PLL to a colleague. We had fifth graders who entered on a second grade reading level who are performing on grade level thanks to PLL*". Teachers also pointed out that they were becoming better educators, as they were now equipped with the tools and knowledge to teach phonics effectively. As one teacher said, "*I learned a lot from PLL as compared to other curricula. It explains why you're doing what you're doing, which makes it quicker to get on board with.*"

Conclusion

Overall, the findings of this study show significant and meaningful results, indicating that the use of 95 Phonics Lesson Library is associated with a significant increase in a student's reading knowledge and assessment scores for striving late-elementary school readers. These results are consistent with previous research on the 95 PLL program, showing that explicit instruction of science of reading skills can improve reading outcomes. To conclude, it is important for curriculum developers to invest in third-party research of their products to understand the impact and learn from educators on its usage in real classrooms. 95 Percent Group has shown a commitment to third-party research, and commented, "*Our commitment to evidence-based practices underscores our dedication to equity in education, ensuring that every learner has access to high-quality literacy instruction supported by research-driven practices.*" Such research not only advances the field of education and best practices as a whole, but it also serves as an example to guide education product development of equitable, evidence-based strategies and resources.

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Appendix

List of Tables and Figures

Table 1. Acadience Reading K-6 Measures and Indicators 4
Table 2. Sample size at Fall 2023 (i.e., Baseline) 5
Table 3a. Sample Demographics Part I 5
Table 3b. Sample Demographics Part II 6
Table 3c. Sample Demographics Part III 6
Table 4. Acadience Reading Composite Scores for the BOY Baseline Equivalence 7
Table 5. Sample size: Baseline Acadience Scores & Attrition Level for EOY OST Scores 7
Table 6. Acadience Reading Composite Scores and T-tests Comparing Growth from BOY to MOY 8
Figure 1. Acadience Reading Composite Status BOY-MOY by Grade and Group 9
Table 7. Grade 5 Acadience Reading Score Growth for Well Below Benchmark Students from BOY to MOY by Condition 10
Table 8. ANCOVA Results for Grade 4 & 5 Ohio State Test Spring 2024 Scores 10
Figure 2. Percentage of Students at or Above Proficient by Grade and Group 11
Figure 3a. Phonics Instructional Strategies in 95 PLL Classrooms 15
Figure 3b. Phonics Instructional Strategies in Comparison Classrooms 16
Figure 4a. Other Practices in 95 PLL Classrooms 16
Figure 4b. Other Practices in Comparison Classrooms 17
Figure 5. 95 PLL and Comparison Classroom Teaching Methods 17

Appendix

Table A1. Multilevel Model Results for 4th and 5th Grade Reading Composite Score Growth BOY to MOY, Accounting for School Membership, Minority Status, and BOY Scores 22
Table A2. Descriptives of OST raw means & standard deviations by condition 23
Table A3. OST ANCOVA Results for 4th Grade (All covariates) 23
Table A4. OST ANCOVA Results for 5th Grade (All covariates) 24
Table A5. Combined OST ANCOVA Results Grades 4 & 5 (All covariates) 24

Additional Tables and Figures

Significant demographic differences: Chi Square test results

*4th grade ethnicity: $\chi^2 = 10.29$, $p < .05$
*5th grade ethnicity: $\chi^2 = 5.21$, $p < .05$

Acadience Reading

Table A1. Multilevel Model Results for 4th and 5th Grade Reading Composite Score Growth BOY to MOY, Accounting for School Membership, Minority Status, and BOY Scores

Fixed Effects	*b*	*SE*	*t*	*p*
(Intercept)	35.75	4.92	7.27	< .001
Group (treatment)	23.20	6.27	3.70	< .001
Reading Composite Score BOY	-0.04	.02	-2.02	.04
Random Effects	**Variance**			
School (intercept)	949.07			
Gifted status (not gifted)	49.05			
Minority status	471.64			

Note. $n_{Level\ 1}$: 386 students (147 PLL & 239 Comparison); n_{Level2}: 5 schools (2 PLL & 3 Comparison)

Table A2. Descriptives of OST raw means & standard deviations by condition

Grade	Group	n	Mean[1]	SD
Grade 4	Comparison	140	666.71	44.49
Grade 4	Treatment	93	682.34	44.58
Grade 5	Comparison	101	661.50	33.17
Grade 5	Treatment	47	684.30	35.00
Combined Grades 4 & 5	Comparison	241	664.53	40.14
Combined Grades 4 & 5	Treatment	140	683.00	41.49

[1]These raw means differ from the estimated marginal means reported in the results section because they do not account for the variables (i.e., covariates) included in the measurement model.

Table A3. OST ANCOVA Results for 4th Grade (All covariates)

Predictor	df	F Score	*Significance*
Condition	1	19.92	< .001*
Reading Composite Score at Baseline	1	362.66	< .001*
Ethnicity	4	1.34	0.258
Disability	7	2.57	0.014*
LEP	2	1.30	0.275
504 Plan	1	0.00	0.99
Residuals	212	–	–

Table A4. OST ANCOVA Results for 5th Grade (All covariates)

Predictor	df	F Score	Significance
Condition	1	23.43	< .001*
Reading Composite Score at Baseline	1	103.06	< .001*
Ethnicity	3	0.82	0.483
Foster Status	1	0.47	0.494
Disability	6	2.17	< 0.05*
LEP	2	1.47	0.233
504 Plan	1	0.67	0.414
Residuals	124	–	–

Table A5. Combined OST ANCOVA Results Grades 4 & 5 (All covariates)

Predictor	df	*F Score*	Significance
Condition	1	41.35	< .001*
Reading Composite Score at Baseline	1	455.28	< .001*
Ethnicity	4	1.52	0.197
Foster Status	1	0.26	0.613
Disability	7	2.23	0.031*
LEP	2	2.46	0.087
504 Plan	1	0.67	0.415
Residuals	352	–	–

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