95 PHONICS CORE PROGRAM™ 2022-2023, GRADES K-1, AZ EFFICACY STUDY

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July 19, 2023

LXD RESEARCH
95 PERCENT GROUP LLC

Learning Experience Design (LXD)
Research & Consulting
a division of Charles River Media Group, LLC

EVIDENCE for ESSA
MODERATE

Understanding ESSA Evidence

The Every Student Succeed Act (ESSA) encourages education programs to provide evidence of effectiveness and impact in order to be federally supported.

The categories for ESSA Evidence are: strong, moderate, and promising evidence of effectiveness, or demonstrates a rationale to be effective.

- Level/Tier 1: Strong - At least one randomized, well-conducted study showing significant positive effect on at least one outcome measure, analyzed at proper clustering (class/student or school level), with a multi-site sample of at least 350 students.
- Level/Tier 2: Moderate - At least one quasi-experimental (i.e., matched), well-conducted study showing significant positive student outcomes, analyzed at class/student or school level, with a multi-site sample of at least 350 students.
- Level/Tier 3: Promising - Would have qualified for Tier 1/2, but did not account for clustering, but obtained significantly positive outcomes at student level or did not meet sample size required. Post-hoc or retrospective studies may also qualify.
- Level/Tier 4: Demonstrates a Rationale - Well defined logic model based on rigorous research, an effort to study intervention effects is planned or currently underway.

This study meets the requirements for Level 2: Moderate

- ✓ Study has compared experimental groups to control groups through matching
- ✓ Matching/weighting conducted prior to posttest collection or during the early stage of intervention implementation
- ✓ Studies with fewer than 50 clusters or 350 students need to demonstrate pretest equivalence
- ✓ The dependent variable(s) include a quantitative measure of academic achievement
- ✓ Study duration is at least 12 weeks, from program inception to posttest
- ✓ Study has at least 2 teachers and 30 students per treatment
- ✓ From pretest to posttest, attrition (dropout) is similar between experimental and control groups
- ✓ Study uses a form of a program that could in principle be replicated
- ✓ If subjects were assigned or treated in clusters (classes or schools), statistical significance for clustered designs used HLM, with pretests and other variables as covariates, or other methods accounting for clustering

Learning Experience Design, Evaluation, and Consulting
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95 Phonics Core Program® Classroom Kit Grades K-1

Efficacy Study with aimsweb®Plus, Early Literacy: Level 2 ESSA Level of Evidence

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Abstract

LXD Research analyzed data from 405 students from kindergarten through first grade who either participated in using the 95 Phonics Core Program (95PCP) or served as comparison students in a school district in AZ during the school year 2022-2023. This product adds explicit and systematic phonics instruction to the daily reading block. The demographic breakdown of this sample includes 27% Indigenous students, 40% Hispanic students, 46% Low Income, 13% Special Education students, and 12% Limited English Proficient students. Two schools volunteered to use 95PCP as their core reading curriculum and used it for about 30 minutes a day. Three comparison schools with similar demographics and literacy scores created a matched sample and used National Geographic (NatGeo) as their core reading program. The aimswebPlus Early Literacy Assessment was conducted at the beginning, middle, and end of year 2023 to understand the programs' impact on reading. Students using 95PCP showed significantly more reading growth on the aimswebPlus assessment compared to the comparison group. Kindergarten students using 95PCP scored 17 more points than the comparison group on their early literacy scores at the end of the year and first grade students scored 8 more points than the comparison group at the end of the year. Notably, the impact of 95PCP led to an additional 22% of kindergartners and 8% of first graders to being on track, considered "Low Risk" on aimswebPlus, in the Spring 2023. The findings and rigorous study design support the 95 Phonics Core Program as a comprehensive program that meets the criteria for ESSA Level 2.

Introduction

Strengthening the quality of core reading instruction is essential. There has been a growing concern that the core reading curriculum for the elementary years has not been improving reading scores in the US (The Condition of Education, 2020; Education Analytics, 2021; Curriculum Associates, 2021). Finding opportunities to grow educators' ability to foster literacy skills through effective curriculum and targeted intervention is becoming an increasingly urgent classroom requirement. Additionally considering the notable growth in public primary and secondary students classified as English Learners (EL), a number that increased by 1.3 million between Fall 2000 and Fall 2019 (NCES, 2020), it is imperative that both core curriculum and supplemental intervention materials address the multitudes of educational needs within each classroom.

It is widely held that kindergarten through third grade is a critical time for reading instruction, with kindergarten and first grade holding particular importance (Mader, 2021). More than 14 percent of K-3 students in the U.S. are EL students, with the highest concentration in first grade (NCES, 2020). A 2014-15 survey found that 75 percent of EL students spoke Spanish and 9.9 percent of ELs were students with disabilities (USDOE). Reaching students across ability and language acquisition status requires curriculum customization; with more students needing targeted literacy interventions, managing students' needs within given instructional time is critical.

The science of reading indicates that following a systematic approach across multiple years provides time for children to develop skills at each level and advance in a sequence that promotes learning (The Reading League, 2022; Cowen, 2016). Researchers agree that schools need to improve access to rigorous, grade-level academics with targeted support to accelerate learning (Lambert & Sassone, 2020). In response, 95 Percent Group, LLC created a core phonics curriculum that would replace the phonics instructional lessons provided with the core reading curriculum, typically the first 20 minutes of the reading block. The first year of research presented strong results, according to the Evidence for ESSA website, showing higher literacy gains for schools randomly assigned to use the program (Schechter & Lynch, 2022). This study replicates the first, with a more diverse district partner.

The 95 Phonics Core Program (95 PCP) is a whole-class Tier I program designed for students in grades K-5 to address and prevent reading gaps using explicit, structured, phonics instruction for 30 minutes per day. Instruction is based on a scope and sequence with 25 lessons for kindergarten and 30 lessons for each grade 1-5. For example, the Grade 1 Scope and Sequence involve 30 lessons disaggregated into seven topics including: introduction, short vowel CVC, consonant blends, consonant digraphs, long vowel silent-e, phonograms, and introduction to second-grade skills. Each lesson focuses on specific phonics skills, provides examples of high-frequency words, and contains information about other skills addressed within the topic. The 95 Percent Group offers a kit for each grade, including a teacher's edition, student workbooks, manipulatives, and a digital presentation. 95

PCP may be offered in person or virtually. The 95 PCP also aligns with assessments and interventions, such as Phonics Lesson Library, offered by the 95 Percent Group to ensure consistency.
95 Percent Group partnered with LXD Research to conduct a third-party evaluation of 95 Phonics Core Program as it was implemented during the 2022-2023 school year in Flagstaff Unified School District in Arizona. All the elementary schools use National Geographic as a core reading curriculum, and two volunteered to use PCP as phonics instruction instead of other available materials. National Geographic does not have a phonics instruction component. Students were matched to statistically comparable students, ensuring a rigorous matching design aligned to ESSA Evidence Level 2 – Moderate. This study focuses on the students who completed the aimswebPlus Early Literacy Assessment, a literacy screening tool for kindergarteners and first graders.

Evaluation Questions

The evaluation aims to answer the following questions:

1. How does 95 PCP affect student achievement on phonics formative assessments in schools that implement the program compared to schools that do not implement the program?
2. How does the impact of 95 PCP vary by school, grade, and student subgroups (e.g., English language learners, students in special education, and racial and ethnic minority students)?
3. What is the nature and extent of the 95 PCP implementation?
    a. How is 95 PCP typically implemented?
    b. To what extent is 95 PCP implemented with fidelity and does the program adhere to the Theory of Action?
    c. How do contextual factors affect 95 PCP implementation, such as the content and quality of professional development, and characteristics of districts and schools, such as administrator support?
4. What is the nature and extent of literacy program implementation in comparison schools?
5. What are educators' perceptions about the quality and impact of the 95 PCP?
    d. What are educators' initial reactions to the 95 PCP, and associated materials, content, pacing, and professional development?
    e. What suggestions do they have for improvement?
6. What is the association between variations in the 95 PCP implementation and student outcomes?

Methods

Design

This study uses a mixed-methods approach, including a matched quasi-experimental design complemented by teacher surveys, classroom observations, and a focus group. This combination of methods allows researchers to understand how the materials are being used in the classroom, learn teacher feedback, and the perceived impact of the program, while also understanding academic achievement.

95 PCP is being implemented in an ethnically-diverse school district in Flagstaff, Arizona. The district serves a population in which 29% are Hispanic/Latino and 27% are Indigenous. Fewer than 1% of students qualify for free lunch. There are over 2470 students in grades K-3 across 10 elementary schools.

Two schools volunteered for the 95 Phonics Core Program with all students. In exchange for their participation, district leaders received all 95 PCP materials for 2022-2023 and training at no cost. The district leaders allowed researchers to identify comparison schools that most closely match the 95 PCP schools using school size, ELA scores from previous years, and demographic profiles. Discounts for comparison schools for the 2023-2024 school year will be provided. All students were pretested within the first four weeks of school using aimswebPlus, and then were tested again in December 2022 and Spring 2023. This report focuses on kindergarteners and first graders who took aimswebPlus Early Literacy.

Treatment Group: Program Key Features

The 95 PCP features instructional practices that differ from the typical reading instruction provided by the core curriculum. A phonemic awareness and phonics continuum of skills is followed using structured literacy characteristics.

Figure 1. Structured Literacy Characteristics in 95 PCP Lessons

Characteristic	Evident in Lesson Framework
1. Explicit	I Do directly states and defines focus skill and student expectations.
2. Systematic	Intentional language and steps include consistent hand gestures and verbal cues; there is a gradual transfer of responsibility from teacher to student.
3. Sequential	Structure moves from simple to complex in key ways including lesson order, word choice, materials used, and teacher talk.
4. Adequate Modeling	This most prominent feature provides precise language at each level of modeling.
5. Corrective Feedback	Teacher response is reactive to individual student errors.
6. Differentiated Instruction	We Do and You Do sections provide two levels that enable teachers to differentiate instruction to meet students' needs.
7. Scaffolded Instruction	Steps of the I Do, We Do, and You Do allow the teacher to gradually transfer responsibility for learning to the students.
8. Continual Assessment	This occurs through informal observation and monitoring during instruction; the focus skill correlates to the *PSI*.

The 95 Percent Group's version of the gradual release model allows all students to practice every skill using multisensory materials, including a phonics mat and chips.

Figure 2. Gradual Release Model in 95 PCP

Modeling Steps	Chip Movement	Speaking
I Do	teacher	teacher
We Do		
Level 1: Accuracy	teacher	teacher and students
Level 2: Fluency	teacher	students
You Do	students	students

Figure 3. 95 PCP Tier 1 Continuum of Instruction

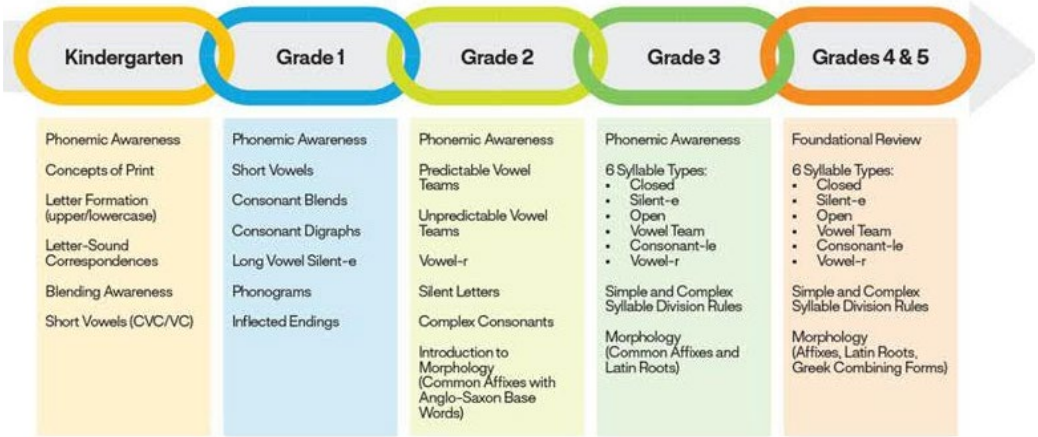
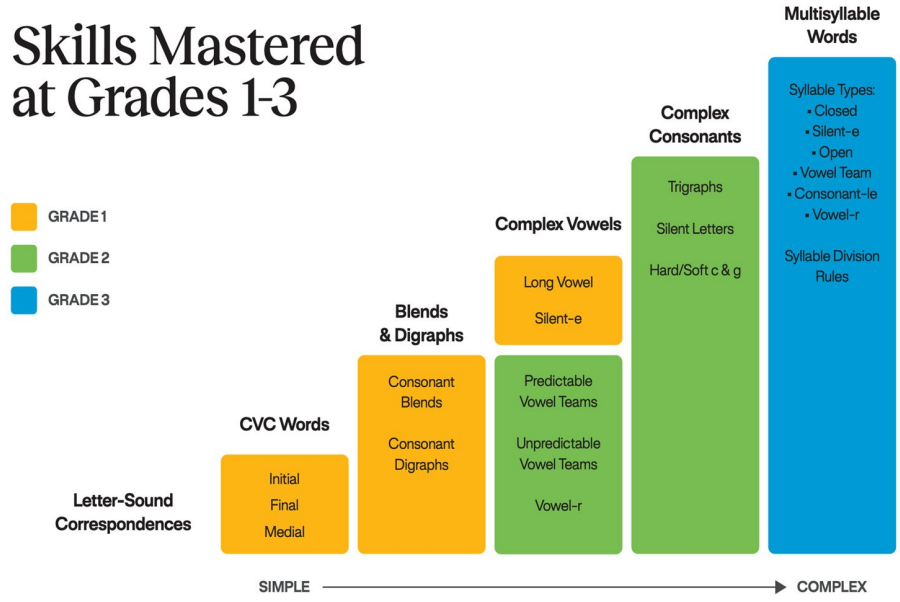


Figure 4. Phonics Continuum of Skills



Comparison Group: Core Reading Program

The district uses the National Geographic Learning core ELA curriculum (NatGeo), published by Cengage. This curriculum has no published research on its effectiveness. The program is described as a highly flexible reading program with components available in print and online. It features science-based content from authentic literature and National Geographic nonfiction, prioritizing comprehension and vocabulary over phonics or writing. Notably, 81% of survey respondents in the current study said that their Tier 1 core reading program addressed phonics; however, 88% of them felt the extent to which phonics instruction was addressed was either "somewhat" or "not at all," a sign that points directly to the gap in curriculum coverage.

Assessment: aimswebPlus

The aimswebPlus assessment screens and monitors the reading and math skills of PreK–12 students. It can uncover learning gaps quickly, identify at-risk students, and assess individual growth. It also has add-on screeners for dyslexia (see Table 1).

Table 1. aimswebPlus Early Literacy Subtests and Skill Coverage

Subtest	Indicators of These Basic Early Literacy Skills
Print Concepts	Print Knowledge
Initial Sounds	Phonemic Awareness
Phoneme Segmentation	Phonemic Awareness
Letter Naming Fluency	Indicator of risk
Word Reading Fluency and Auditory Vocabulary	Advanced Phonics and Word Attack Skills, Accurate and Fluent Reading of Text Reading Comprehension
Nonsense Word Fluency	The Alphabetic Principle and Basic Phonics

Educator Feedback & Observation Methods

Information about educators' use of and feedback on 95 PCP was gathered through a multi-pronged approach that included a teacher survey, classroom observations, and a focus group. Each of these approaches is described briefly below, with their respective insights included in the results section.

Teacher Survey: The surveys were shared with the principals who sent them out to their teachers. A total of 9 treatment teachers using 95 PCP and 11 comparison teachers using National Geographic completed a survey for kindergarten and first grade to understand their phonics and literacy instruction experience.

Classroom Observations: Two LXD Researchers visited both treatment and both comparison schools at the end of March 2023. The principals arranged a schedule of which classrooms to observe depending on their literacy block time. There were 12 total classrooms observed, 4 kindergarten and 8 first grade. The kindergarten classrooms were evenly split with 2 as 95 PCP classrooms and 2 as comparison classrooms. For first grade, 5 were 95 PCP classrooms and 3 were comparison classrooms. Every five minutes for a total of 30 minutes in the 95 PCP classrooms and for a total of 25 minutes in the comparison classrooms, the observer noted what was happening and indicated whether the instructional structure was whole class, small group, or independent work as well as whether or not students were applying skills learned from the lesson to an activity or being interactive with the lesson.

Focus Group: The focus group allowed teachers across grade levels and schools to see the commonalities and differences of their experiences using 95 PCP. The school year posed some challenges for focus group scheduling so to mediate this, the focus group was completed asynchronously through Google Slides over 2 weeks at the end of May 2023. The principals nominated teachers to participate. Each treatment principal nominated 6 teachers, 12 teachers in total filled out the focus group slides. Each comparison principal nominated 3 teachers, but one teacher didn't fill it out so a total of 5 comparison teachers filled out the focus group slides.

Student Sample

The goal for the sample was to create two similar groups to compare for this study. One of the primary outcomes of interest for younger students, the Early Literacy Scale Score, was outside of the evidence for the WWC ESSA threshold of .25 standard deviation for participants because the difference between the groups was too large to be considered similar. Three comparison schools were recruited to provide sufficient extra participants to reduce the comparison sample via a statistical analysis called propensity score matching (PSM) if the difference in scale scores was sufficient to justify such an approach. Therefore, a PSM was conducted with the specification added that only mismatched *comparison school participants* would be removed. Similar PSMs were conducted for the other grade levels, and data were then re-merged into a single file. Although there are some minor variations within each grade, the overall kindergarten and first grade Post-PSM matching result is exceptionally well matched by grade level and age. The updated sample shows no significant differences between groups with regard to other demographics or academic baseline scores. Additionally, the sample sizes for the two groups are virtually identical. Additional details about the PSM process and results are available in Appendix 1.

Table 2. Number of Students, Classes, and Schools per Grade and Group

Grade Level	School Group	# of Students	# of Schools
K	95 PCP	105	2
	NatGeo	105	3
	Total	**210**	**5**
1	95 PCP	109	2
	NatGeo	109	3
	Total	**218**	**5**
Grand Total	**Total**	**428**	**5**

Overall, students in the 95 PCP and comparison groups were similar in regard to gender, Limited English Proficiency status (LEP), Economic Disadvantage status (ECO), Special Education status (SPED), and White race/ethnicity (see Table 3-4). Among kindergarteners, participants in the 95 PCP group were more likely to be Hispanic ($\chi 2 = 3.89$, $p = .05$; see Table #a). Among first graders, participants in the 95 PCP group were more likely to be Hispanic ($\chi 2 = 5.57$, $p = .018$), while participants in the comparison group were more likely to be Indigenous ($\chi 2 = 5.23$, $p = .022$; see Table 1a). Kindergarteners were similar in regard to Indigenous race/ethnicity.

Table 3. Sample descriptives for each group by grade

Grade Level	Group	Male	LEP	ECO	SPED	White	Hispanic	Indigenous
K	**NatGeo**	56%	11%	47%	11%	31%	33%*	29%
	95 PCP	50%	16%	43%	9%	25%	47%*	25%
1	**NatGeo**	49%	8%	44%	19%	27%	31%*	34%*
	95 PCP	46%	14%	51%	12%	26%	47%*	20%*

** Significant difference between 95 PCP and NatGeo.*

For kindergarteners and first graders, 428 students had complete data from the Beginning of Year (BOY) in the Fall of 2022, but 23 students did not have End of Year (EOY) data available in the Spring of 2023, signaling an attrition rate of 5.4%. Attrition was equally likely to occur in the 95 PCP and comparison groups ($\chi 2 = 2.25$, p = .13).

Table 4. Sample sizes for group by grade

			BOY	EOY	Matched Sample
Grade Level	**School Group**	**# of Schools**	**# of Students**	**# of Students**	**# of Students**
K	**NatGeo**	3	105	95	95
	95 PCP	2	105	99	99
	Total	5	210	194	194
1	**NatGeo**	3	109	104	104
	95 PCP	2	109	107	107
	Total	5	218	211	211

aimswebPlus Beginning-of-Year

The 95 PCP and comparison schools had similar starting literacy score levels, allowing for a comparison of early literacy growth. Early Literacy scores at the beginning of the year were not statistically different across the 95 PCP and comparison schools for kindergarten (p = .07) and first grade (p = .92; see Table 5). Early Literacy scores combining BOY kindergarten and first grade to look at school-level literacy rates before the start of either program were also not different across the 95 PCP

and comparison schools (p = .25, see Table 5a). See Table 6 for the percentage of students in each group at High, Moderate, and Low-Risk levels on BOY and EOY scores.

Table 5. T-tests comparing Grade Level BOY Literacy Scores by Group

Grade Level	Assessment	Group	Number	BOY Avg Score	SD	BOY p-value	Cohen's d Effect Size
K	Early Literacy Score	NatGeo	105	20.1	15.36	.07	.26
		95 PCP	105	25.05	20.63		
1	Early Literacy Score	NatGeo	109	14.17	20.45	.92	.01
		95 PCP	109	13.90	19.75		
K-1	Early Literacy Score	NatGeo	214	12.52	18.16	.25	.11
		95 PCP	214	14.66	20.16		

BOY and EOY Levels by Groups

The table below reports percentages of students at High Risk, Moderate Risk, and Low Risk on BOY and EOY literacy scores in the 95 PCP and comparison groups.

Table 6. BOY Literacy Levels by Grade and Group

Grade Level	Assessment	Group	Sample Size (N)	Level 1% (High Risk)	Level 2% (Mod Risk)	Level 3% (Low Risk)
K	Early Literacy Overall Level	NatGeo	105	65%	15%	20%
		95 PCP	105	60%	14%	26%
1	Early Literacy Overall Level	NatGeo	109	71%	5%	25%
		95 PCP	109	64%	13%	23%
K-1	Early Literacy Overall Level	NatGeo	214	68%	10%	22%
		95 PCP	214	62%	14%	24%

Results

Educator Feedback & Observation Outcomes

Teacher Survey

Nine teachers using 95 PCP and 11 teachers using National Geographic in their classrooms completed a survey that captured their phonics and literacy instruction experience. The average amount of time dedicated to reading instruction was 40-60 minutes or more than 90 minutes daily. 88.9% of respondents provide opportunities to apply phonics pattern knowledge through sentence dictation and writing to a great extent. Respondents indicated they spent, on average, the most of the literacy block on phonics and decoding instruction (over 40 minutes), phonological and phonemic awareness (10-30 minutes) and around 5-15 minutes on comprehension (5-15 minutes). Respondents from the 95 PCP group expressed gratitude towards the program and said,

> "I love this program! My kids are really starting to read fluently because they understand how to break words down and decode them! It's improved their vocabulary with the morphology, and my student's comprehension is improving as well! I hope we can continue using this program in the future!"

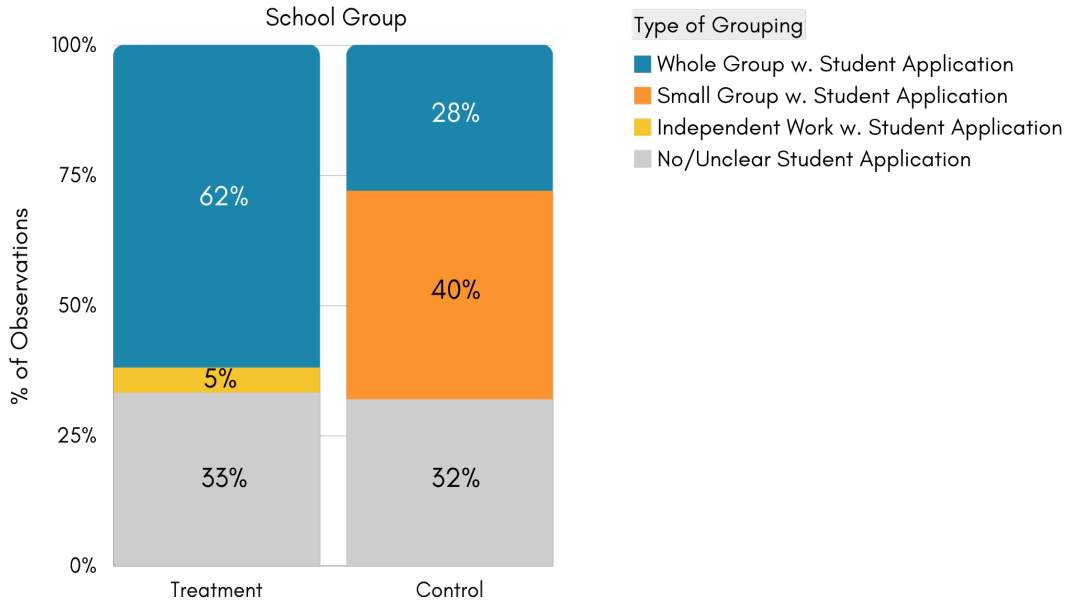
During the comparison teachers' ELA block, the comparison respondents selected, on average, that they spent the most time on phonics instruction (25 minutes), writing (20 minutes), and comprehension (18 minutes) during their ELA reading block. Respondents expressed an interest in more phonics based instruction and materials and said,

> "I wish there were more resources for teachers to teach phonics. I always find myself lacking materials/ lessons to teach phonics and have to find them myself."

Observations

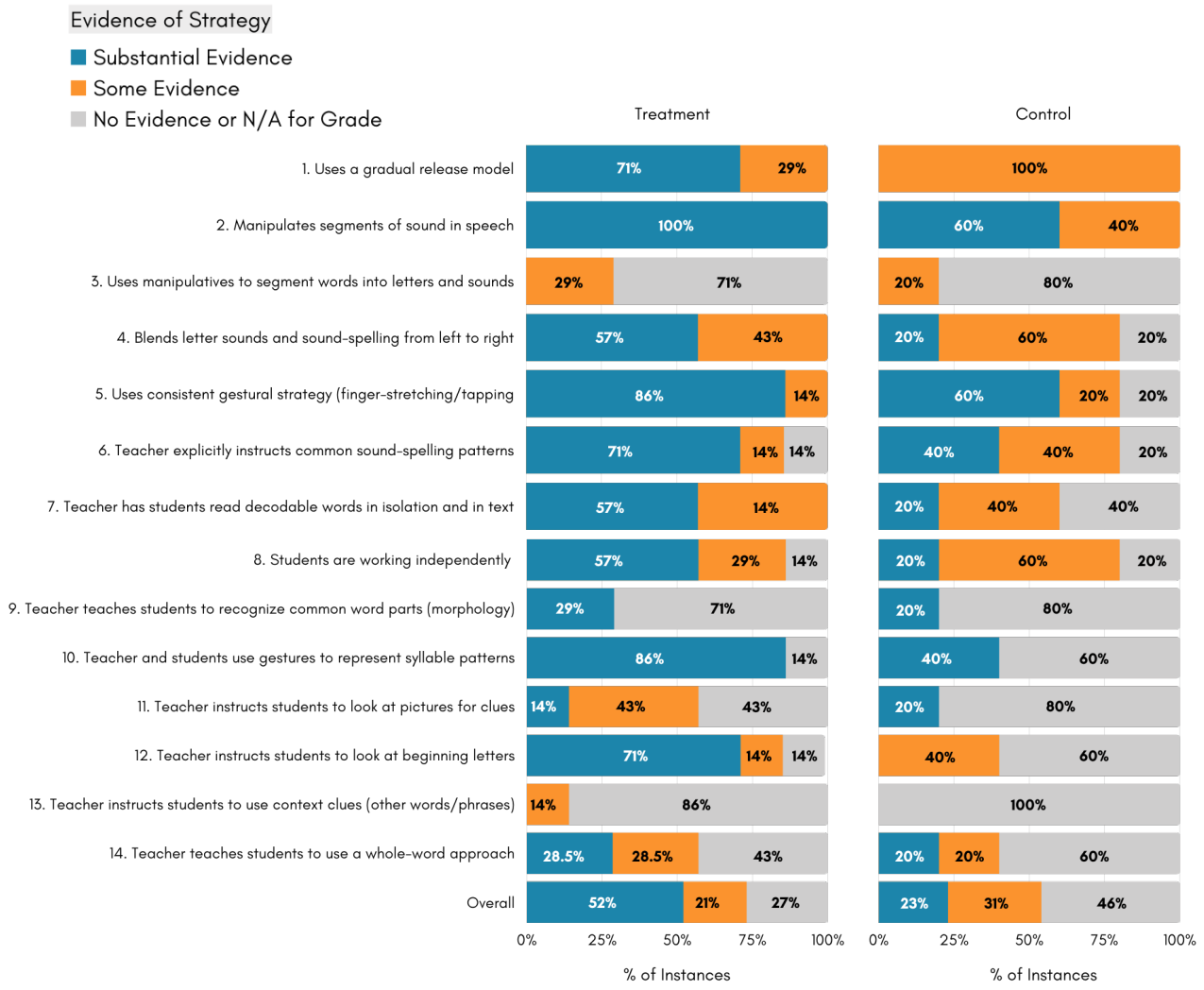
There were 12 total classrooms observed, 4 kindergarten and 8 first grade. The kindergarten classrooms were evenly split, with two as 95 PCP classrooms and two as comparison classrooms. For first grade, five were 95 PCP classrooms, and three were comparison classrooms. Every five minutes for a total of 30 minutes in the 95 PCP classrooms and for a total of 25 minutes in the comparison classrooms, the observer noted what was happening and indicated whether the instructional structure was whole class, small group, independent work as well as whether or not students were applying skills learned from the lesson to an activity or being interactive with the lesson.

Figure 5. Student Application by Student Instruction Grouping and School Group



The 95 PCP classrooms included whole group instruction in 90.5% of the observed classrooms and specifically student application activities in 66.7% of the observed classrooms. The student application overlapped with the whole group instruction about 62% of the time. Typically, students interacted with the lesson through oral repetition such as phoneme substitution, completing activities in their workbook, or collaboratively completing parts of the activity with the teacher. Whereas in the comparison schools, whole group instruction was only in 48% of observed classrooms, small group instruction was in 44% of the classrooms and student application activities were observed 68% of the time. Student application tended to overlap with the small group instruction about 40% of the time and only 28% of the whole group instruction. During the small groups, comparison classrooms tended to have more hands-on activities such as using individual white boards to write words, oral repetition of words and letter substitution, or playing different games associated with phonics, the alphabet, or words. Interestingly, the 95 PCP had 5% of independent work overlapping with student application whereas the comparison group had none.

Figure 6. Evidence of Literacy Strategy by School Group



There are a few main findings to point out about the amount of evidence observed for each type of instructional practice. In the 95 PCP classrooms, 71% of them showed substantial evidence of gradual release modeling, or the "I do, we do, you do" approach, whereas none of the comparison classrooms showed substantial evidence of it. Manipulating segments of sound in speech was substantially observed in 100% of the 95 PCP classrooms and in only 60% of the comparison classrooms. The teacher explicitly instructing sound and spelling patterns was substantially observed in 71% of 95 PCP classrooms, but in only 40% of comparison classrooms which is a 31% difference. Additionally, 71% of 95 PCP classrooms showed substantial evidence of the teacher instructing students to look at the beginning letters to guess a word whereas in the comparison classrooms, there was no substantial evidence, only some evidence observed in 40% of the classrooms. The 95 PCP classrooms had over double the amount of substantial evidence of using gestures to represent syllable patterns with 86% whereas comparison classrooms had only 40%. Overall, the 95 PCP classrooms had 52% substantial

evidence across the instructional practices important for literacy whereas the comparison classrooms only had 23% substantial evidence across the instructional practices.

More specifically, in kindergarten, 100% of the 95 PCP classrooms showed substantial evidence in 3 instructional practices: manipulating segments of sound in speech, students reading decodable text, and students working independently. Only 50% of comparison classrooms showed substantial evidence in these instructional practices and no substantial evidence in 8 of the instructional strategies.

In first grade, 100% of the 95 PCP classrooms also showed substantial evidence in 3 instructional practices: manipulating segments of sound in speech, using consistent gestural strategy such as finger stretching/tapping, and using gestures for syllable patterns such as silent-e, closed, and open syllables. Further, 80% of first grade classrooms showed substantial evidence for an additional 3 instructional practices: using a gradual release model of "I do, we do, you do," explicitly instructing in common sound-spelling patterns, and instructing students to look at beginning letters to guess a word. In the comparison classrooms, 66% of the classrooms showed substantial evidence of manipulating segments of sound in speech and using consistent gestural strategy such as finger stretching/tapping. No substantial evidence of 6 instructional strategies were observed.

Figure 7. Substantial Evidence of Literacy Strategy by School Group and Grade

Evidence of Strategy
- 75%+ had Substantial Evidence for this strategy in 95PCP classrooms
- No Substantial Evidence or N/A for Grade

	K, 95 PCP	K, NatGeo	1st, 95 PCP	1st, NatGeo
1. Uses a gradual release model				
2. Manipulates segments of sound in speech				
3. Uses manipulatives to segment words into letters and sounds				
4. Blends letter sounds and sound-spelling from left to right				
5. Uses consistent gestural strategy (finger-stretching/tapping)				
6. Teacher explicitly instructs common sound-spelling patterns				
7. Teacher has students read decodable words in isolation/in text				
8. Students are working independently				

Evidence of Strategy

■ 75%+ had Substantial Evidence for this strategy in 95PCP classrooms

■ No Substantial Evidence or N/A for Grade

	K, 95 PCP	K, NatGeo	1st, 95 PCP	1st, NatGeo
9. Teacher teaches students to recognize common word parts (morphology)				
10. Teacher and students use gestures to represent syllable patterns				
11. Teacher instructs students to look at pictures for clues				
12. Teacher instructs students to look at beginning letters				
13. Teacher instructs students to use context clues (other words/phrases)				
14. Teacher teaches students to use a whole-word approach				

Teacher Focus Group

The focus group allowed teachers across grade levels and schools to see the commonalities and differences of their experiences using 95 PCP. Broadly, the teachers valued the materials provided to them by 95 Percent Group the most such as the slides, guidebooks, student workbooks and hands-on materials. More specifically, during the lessons, the teachers appreciated the teacher modeling practices and the sound spelling mapping activity the most. The teachers collaborated with the other teachers in their school using 95 PCP. When students needed additional support, teachers would individualize the pace and add more support. Teachers using 95 PCP collaborated and implemented the program the same way whereas the comparison teachers mentioned in their focus group responses that they did not implement their instruction the same way even in the same grade level.

All teachers in the focus group shared that 95 PCP complimented their intervention program and even tried to integrate the 95 PCP language during intervention. The biggest challenge of the program was following the suggested time allotment as the majority of teachers had to adapt parts of the lesson to fit into 30-minutes. However, the teachers found the overall pacing of the program to be appropriate. One kindergarten teacher suggested starting 95 PCP in the second quarter because it might be too overwhelming for beginning kindergarteners who cannot hold a pencil yet.

The teachers noted that students enjoyed the activities where they could work independently the most, such as the sound spelling mapping practice with chips and word sorting. Teachers mentioned that students also enjoyed word/sentence dictation and the high frequency word practice. The passages

were the least liked by the students and the teachers as the passages were difficult for students to understand. The teachers who had ELL students pointed out that the passages were the most difficult part for them as well.

All of the teachers noted that they would recommend 95 PCP because of the literacy development they witnessed in real-time. Teachers shared their excitement that their students' reading scores increased, their students were able to read and blend words by the end of the year, and their students' handwriting and ability to complete sentence dictation improved.

Teachers also mentioned that they themselves gained confidence in teaching phonics because of the clarity, organization, and repetition of 95 PCP. Teachers appreciated the training and would have liked the time allotment to be more realistic and have some lesson adaptation examples. It took the teachers about two weeks to feel fully comfortable with the program simply because of time allotment as the teachers expressed the materials were easy to follow allowing less preparation time on their end. Overall, teachers were very satisfied with the program.

Student Outcomes

To compare student outcomes on the aimswebPlus assessment, statistical models accounted for students being nested within schools and also controlled for known differences that could impact outcomes, which included factors of gender, LEP status, Economic Disadvantage status, SPED status, and race. Results below are described by grade-level as well as overall at the school-level.

Three-level hierarchical linear regression models with time (level 1) nested within students (level 2) nested with schools (level 3) were employed to examine growth in literacy scores based on the aimswebPlus assessment. Separate models were conducted for each grade. All models contained a series of covariates including gender ("Gender NUM"; 1=male, 0=female), LEP status ("LEPFlag NUM"; 1=LEP, 0=non-LEP), Economic Disadvantage status ("EconDisFlag NUM"; 1=Economically Disadvantaged, 0=non-Economically Disadvantaged), SPED status ("SpecialEdFlag NUM"; 1=SPED, 0=non-SPED), White ("white"; 1=White, 0=non-White), Hispanic ("hisp"; 1=Hispanic, 0=non-Hispanic), Indigenous ("indig"; 1=Indigenous, 0=non-Indigenous), and other race ("raceoth"; 1=Other race, 0=non-other race), an indicator of time ("Time"; 1=Beginning of year (BOY), 2=End of Year (EOY)), an indicator of whether the student was in the 95 PCP or comparison group ("Intervention VS Comparison School"; 0=Comparison, 1=Treatment), and an interaction between time and group calculated as the product of Time*group ("Tigr").

The main effects of the 95 PCP versus the comparison group were explored by considering the significance of the interaction between time of testing and group ("Tigr"). A significant interaction term would suggest that the growth in literacy scores is different for the 95 PCP versus comparison groups. All analyses were conducted separately by grade using the statistical software package R 3.6.2.

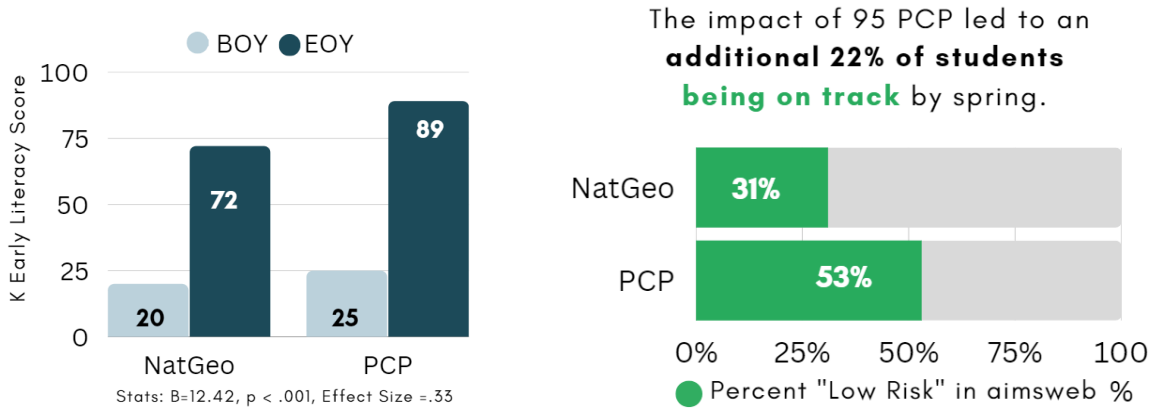
Results by Grade Level

Kindergarten

Kindergarteners in 95 PCP schools demonstrated significantly more growth in early literacy scores compared to comparison schools (N=194, B=12.42, p<.001, Effect Size=.33; see Figure 8). The 95 PCP program led to an additional 22% of kindergarteners being on track by spring, compared to the comparison program, with 53% of kindergarteners using the 95 PCP program being considered "Low Risk" on the aimswebPlus assessment.

Complete output for each model can be found in Appendix 2. Results of t-tests and their associated effect sizes comparing growth, BOY averages and EOY averages in early literacy scores between the 95 PCP and comparison groups can be found in Appendix 5.

Figure 8. Kindergarteners in the 95 PCP group demonstrated significantly more growth in early literacy scores than the comparison group (N=194)

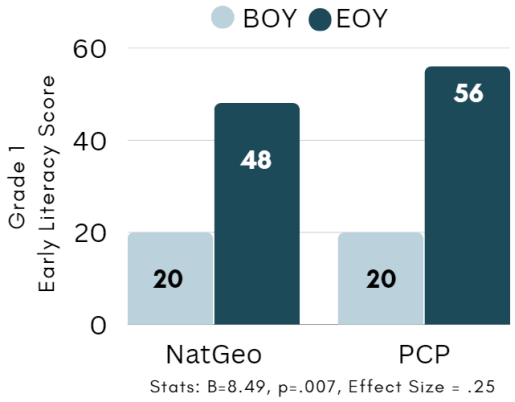


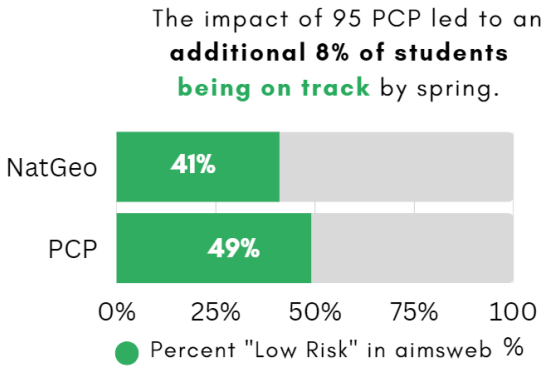
First Grade

First graders in 95 PCP schools demonstrated significantly more growth in early literacy scores than the comparison schools (N=211, B=8.49, p=.007, Effect Size=.25; see Figure 9). The 95 PCP program led to an additional 8% of first graders being on track by spring compared to the comparison group, with 49% in the 95 PCP group being considered "Low Risk" on the aimswebPlus assessment, compared to 41% in the comparison group.

Complete output for each model can be found in Appendix 3. Results of t-tests and their associated effect sizes comparing growth, BOY averages and EOY averages in early literacy scores between the 95 PCP and comparison groups can be found in Appendix 5.

Figure 9. First graders in the 95 PCP group demonstrated significantly more growth in early literacy scores than students in the comparison group (N=211)



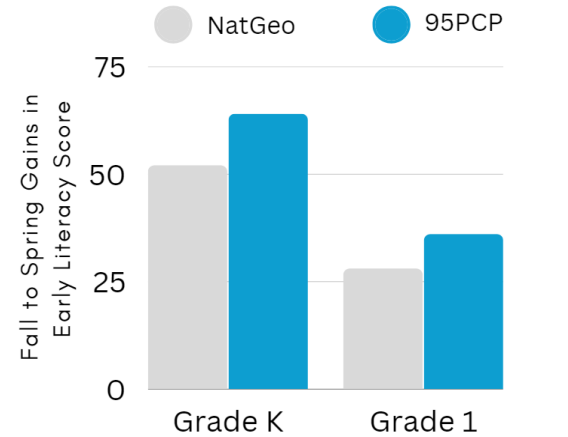


Overall Results

To assess school-level overall growth in literacy skills, students' assessment scores were standardized within each grade and then combined across all grades for which the assessment was available. For example, early literacy assessments were administered in kindergarten and first grade. Students' early literacy scores were first standardized within kindergarten and first grade separately, then combined into a single variable.

Overall, students in schools receiving 95 PCP made significantly higher gains in early literacy scores on aimswebPlus than comparison schools (N=405, B=.29, $p<.001$, $f^2=.03$). See Figure 4 for the gains in literacy score from BOY to EOY across groups (e.g., EOY score minus BOY score for net growth). See Table 7 for scores across groups.

Figure 10. Kindergarteners and first graders in the 95 PCP group demonstrated significantly more growth in early literacy scores than students in the comparison group (N=405)



The 95 PCP group showed a reduction in the number of students who were considered High Risk according to the aimswebPlus assessment. The relative percentage of students at High Risk, Moderate Risk, and Low Risk at EOY suggest an advantage of 95 PCP compared to the comparison group. Across grade levels at the school-wide scale, the comparison group showed 52% of students being considered High Risk at EOY, compared to a smaller proportion of 36% of students in the 95 PCP group. In addition, 51% of students in the 95 PCP group were considered Low Risk in the 95 PCP group at EOY, compared to 36% of students in the comparison group. The 95 PCP group showed more movement toward on-level reading scores than the comparison group.

Table 7. EOY Literacy Levels by Grade and Group

Grade Level	Assessment	Group	Sample Size (N)	Level 1% (High Risk)	Level 2% (Mod Risk)	Level 3% (Low Risk)
K	**Early Literacy Overall Level**	NatGeo	95	53%	17%	31%
		95 PCP	99	27%	20%	53%
1	**Early Literacy Overall Level**	NatGeo	104	52%	7%	41%
		95 PCP	107	44%	8%	49%
K-1	**Early Literacy Overall Level**	NatGeo	199	52%	12%	36%
		95 PCP	206	36%	14%	51%

Conclusion

The present study shows that the use of 95 PCP as a phonics supplement showed greater improvement in reading skill level from BOY to EOY compared to the National Geographic materials in both kindergarten and first grade classrooms. The data show the 95 PCP had a positive, significant impact on student achievement at the overall school level. For both kindergarten and first grade, even students who started as High Risk got a boost in growth from this core supplemental program. Not only did students demonstrate greater reading skill development and growth with 95 PCP overall, but 95 PCP also led to a greater proportion of students being on track by spring. After one year of 95 PCP, there were fewer students receiving 95 PCP who were considered High Risk compared to the National Geographic instruction, and over 50% of kindergarteners and first graders were considered Low Risk due to the 95 PCP structured and sequential instruction.

Across the teacher survey, focus group, and observations, teachers shared that they found the 95 PCP materials especially valuable for the structure and modeling of the activities. Teachers also shared that

they felt comfortable with the program quickly and that they gained more confidence in teaching phonics because of the clarity, organization, and consistency of 95 PCP.

Future research will focus on how well these initial gains sustain and build over multiple years of use. Additionally, new research questions may explore the extent to which teachers' growing knowledge of phonics, whether that be gained through a science of reading program or independent study, affects teachers' implementation and fidelity to the use of 95 PCP. Finally, studies that examine the use of a core supplemental program in combination with a high-quality, structured Tier 2 and/or Tier 3 intervention program could support acceleration and growth for all students.

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Appendices

Appendix 1: PSM details

At the baseline, the difference between the 95 PCP and comparison group on early literacy scores were significantly different, as were the demographic profiles of each of the five schools. To ensure baseline equivalence on aimswebPlus and improve the similarities between the groups in terms of demographics, LXD Research applied Propensity Score Matching (PSM) procedures to construct a matched sample of students from the full comparison group, using PSM procedures in the PSM plug-in for SPSS Version 28.0 (Bertsekas & Tseng, 1988; Hansen, 2004: Ho, Imai, King, & Stuart, 2011; Thoemmes & Liao, 2013). PSM is based on logistic regression, with the outcome specified as a dichotomous indicator of whether or not a student was in the 95 PCP condition. PSM procedures were conducted separately for each grade level to create a propensity score for each student in the dataset corresponding with the likelihood of treatment assignment, given a vector of data elements likely related to outcome or treatment participation.

Baseline scores from aimswebPlus K-1 Early Literacy, and all available student-level demographic data elements were included in the propensity score matching procedure. Student-level covariates also included: gender; race/ethnicity dummy coded for White, Asian, Black, Indigenous, Pacific Islander, Hispanic, Multiple Race/Ethnicities, and White; Learning English proficiency (LEP) status; Special Education status; homeless status; Economically Disadvantaged status; and age. Next, the PSM matching algorithm was applied to select the matched comparison group of students from the original comparison group. LXD Research created the final matched sample by considering one-to-one, nearest neighbor matching, with a caliper and without replacement. Propensity scores and covariates were evaluated for balance between the 95 PCP and comparison groups.

Robustness checks were conducted by analysts by using variations on original propensity score parameters to ensure the most appropriate propensity score matching algorithm was used, as defined by the most balanced observable characteristics between 95 PCP and comparison students.

Appendix 2: Kindergarten Results

Early Literacy Score: (B=12.42, p<.001) - significant differences between 95 PCP and comparison group

	elscore		
Predictors	*Estimates*	*CI*	*p*
(Intercept)	-31.79	-43.71 – -19.86	**<0.001**
Time	51.89	47.03 – 56.76	**<0.001**
Intervention_VS_Comparison_School	-7.47	-23.01 – 8.06	0.346
Gender_NUM	1.02	-4.52 – 6.55	0.719
LEPFlag_NUM	-3.06	-11.49 – 5.37	0.476
EconDisFlag_NUM	-4.40	-10.43 – 1.63	0.153
SpecialEdFlag_NUM	-4.55	-13.96 – 4.86	0.343
hisp	-10.96	-18.63 – -3.29	**0.005**
indig	-10.82	-19.31 – -2.33	**0.012**
raceoth	3.77	-9.76 – 17.31	0.585
Tigr	12.42	5.60 – 19.23	**<0.001**
Random Effects			
σ^2	293.07		
$\tau_{00\ Identifier:SchoolShortName\_NUM}$	220.01		
$\tau_{00\ SchoolShortName\_NUM}$	33.00		
ICC	0.46		
$N_{Identifier}$	194		
$N_{SchoolShortName\_NUM}$	5		
Observations	388		
Marginal R^2 / Conditional R^2	0.631 / 0.802		

Appendix 3: First Grade Results

Early Literacy score: (B=8.49, p=0.007) - significant differences between 95 PCP and comparison group

	elscore		
Predictors	*Estimates*	*CI*	*p*
(Intercept)	-7.53	-18.48 – 3.43	0.177
Time	27.57	23.21 – 31.92	**<0.001**
Intervention VS Comparison School	-8.46	-20.74 – 3.82	0.176
Gender NUM	2.62	-4.74 – 9.98	0.484
LEPFlag NUM	-18.50	-30.70 – -6.30	**0.003**
EconDisFlag NUM	-5.52	-13.16 – 2.11	0.156
SpecialEdFlag NUM	-8.44	-18.59 – 1.70	0.103
hisp	-0.50	-10.28 – 9.27	0.919
indig	-2.74	-13.44 – 7.96	0.615
raceoth	-3.19	-17.36 – 10.98	0.658
Tigr	8.49	2.38 – 14.60	**0.007**
Random Effects			
σ^2	255.05		
$\tau_{00\ Identifier:SchoolShortName\_NUM}$	543.03		
$\tau_{00\ SchoolShortName\_NUM}$	4.69		
ICC	0.68		
$N_{\ Identifier}$	211		
$N_{\ SchoolShortName\_NUM}$	5		
Observations	422		
Marginal R^2 / Conditional R^2	0.280 / 0.771		

Appendix 4: Combined Results, Standardized Scores

Early Literacy score: (B=0.29, p<0.001) - significant differences between 95 PCP and comparison group

	zelscore		
Predictors	*Estimates*	*CI*	*p*
(Intercept)	0.40	0.07 – 0.74	**0.017**
Time	-0.14	-0.25 – -0.03	**0.012**
Intervention VS Comparison School	-0.17	-0.59 – 0.25	0.433
Gender NUM	0.05	-0.12 – 0.23	0.561
LEPFlag NUM	-0.37	-0.66 – -0.09	**0.009**
EconDisFlag NUM	-0.19	-0.37 – -0.00	**0.049**
SpecialEdFlag NUM	-0.21	-0.48 – 0.05	0.118
hisp	-0.27	-0.51 – -0.03	**0.030**
indig	-0.32	-0.58 – -0.05	**0.020**
raceoth	-0.05	-0.42 – 0.33	0.807
Tigr	0.29	0.13 – 0.45	**<0.001**
Random Effects			
σ^2	0.32		
$\tau_{00\ Identifier:SchoolShortName\_NUM}$	0.61		
$\tau_{00\ SchoolShortName\_NUM}$	0.03		
ICC	0.67		
$N_{\ Identifier}$	405		
$N_{\ SchoolShortName\_NUM}$	5		
Observations	810		
Marginal R^2 / Conditional R^2	0.080 / 0.692		

Appendix 5: Effect Sizes Based on t-tests

The tables below report Cohen's d effect sizes resulting from dependent samples t-test that compared growth, BOY average and EOY average in literacy scores in the 95 PCP and comparison groups. T-tests were run separately for kindergarteners, first graders, and overall across grades for K-1 literacy assessments.

Table 1. T-tests comparing Grade Level Growth in Literacy Scores by 95 PCP and Comparison Group Status

Grade Level	Assessment	Group	Number	Growth BOY-EOY Avg Score	SD	p-value	Cohen's d Effect Size
K	**Early Literacy Score**	NatGeo	95	51.89	24.56	<.001	.51
		95 PCP	99	64.31	23.87		
1	**Early Literacy Score**	NatGeo	104	27.57	20.86	.007	.38
		95 PCP	107	36.06	24.15		

Table 2. T-test comparing School Level Growth in Literacy Scores by Group: Raw Scores

Grade Level	Assessment	Group	Number	Growth BOY-EOY Avg Score	SD	p-value	Cohen's d Effect Size
K-1	**Early Literacy Score**	NatGeo	199	39.18	25.71	<.001	.39
		95 PCP	206	49.64	27.82		

Table 3. T-tests comparing School Level Growth in Literacy Scores by Group: Standardized Scores

Grade Level	Assessment	Group	Number	Growth BOY-EOY Avg Score	SD	p-value	Cohen's d Effect Size
K-1	**Early Literacy Score**	NatGeo	199	-.14	.74	<.001	.36
		95 PCP	206	.15	.85		

Table 4. T-tests comparing School Level BOY Literacy Scores by Group: Standardized Scores

Grade Level	Assessment	Group	Number	BOY Avg Score	SD	p-value	Cohen's d Effect Size
K-1	Early Literacy Score	NatGeo	214	-.06	.94	.22	.12
		95 PCP	214	.06	1.06		

Table 5. T-tests comparing Grade Level EOY Literacy Scores by Group

Grade Level	Assessment	Group	Number	EOY Avg Score	SD	p-value	Cohen's d Effect Size
K	Early Literacy Score	NatGeo	95	62.48	28.92	<.001	.60
		95 PCP	99	79.29	27.41		
1	Early Literacy Score	NatGeo	104	41.98	34.91	.10	.23
		95 PCP	107	49.92	35.55		

Table 6. T-tests comparing School Level EOY Literacy Scores by Group: Raw Scores

Grade	Assessment	Group	Number	EOY Avg Score	SD	p-value	Cohen's d Effect Size
K-1	Early Literacy Score	NatGeo	199	51.77	33.71	<.001	.36
		95 PCP	206	64.03	35.06		

Table 7. T-tests comparing School Level EOY Literacy Scores by Group: Standardized Scores

Grade Level	Assessment	Group	Number	EOY Avg Score	SD	p-value	Cohen's d Effect Size
K-1	Early Literacy Score	NatGeo	199	-.20	.99	<.001	.40
		95 PCP	206	.19	.97		