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Evaluating the Effectiveness of Heggerty Bridge to Reading™: Efficacy Study for 1st Grade

End-of-Year Gains with NWEA MAP Growth

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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 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
MAP GROWTH, FIRST GRADE
2023-2024

PROGRAM DESCRIPTION

Bridge to Reading includes all the components teachers need to provide comprehensive foundational skills instruction in approximately 30 minutes. The daily instruction includes 6-8 phonemic awareness skills alongside systematic phonics lessons, with student practice pages, decodable texts, multi-sensory learning aids, and progress-monitoring tools.

STUDY DETAILS

Analysis Sample Sizes

- 3 Heggerty schools, 239 students
- 14 Comparison schools, 724 students

Demographics

56% White | 38% Hispanic | 24% ELL | 8% SPED

Time Frame

August 2023 - May 2024

Implementation Description

- Teachers used Bridge to Reading every day for their phonics skill instruction during their daily reading block

Methodology

- Using Matching Frontier, students from the Heggerty schools were matched with demographically similar students with similar BOY MAP Growth scores.
- EOY MAP Growth scores were examined between the two groups.

STUDY CONTEXT

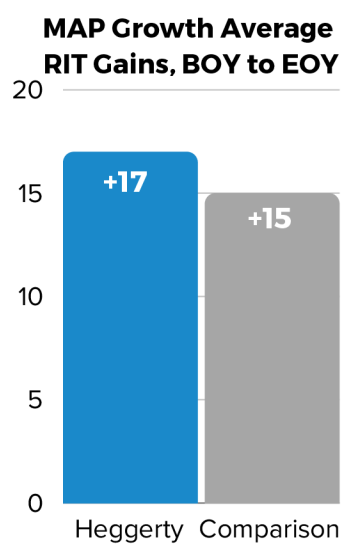
Heggerty hired LXD Research to evaluate the impact of the Bridge to Reading core foundational skills curriculum on early literacy skills in Georgia. Three schools implemented the program, while 14 others using Fountas and Pinnell Guided Reading and Word Study were the comparison. LXD Research analyzed the district's assessment of MAP Growth from the Beginning-of-Year (BOY) to the End-of-Year (EOY) assessments.

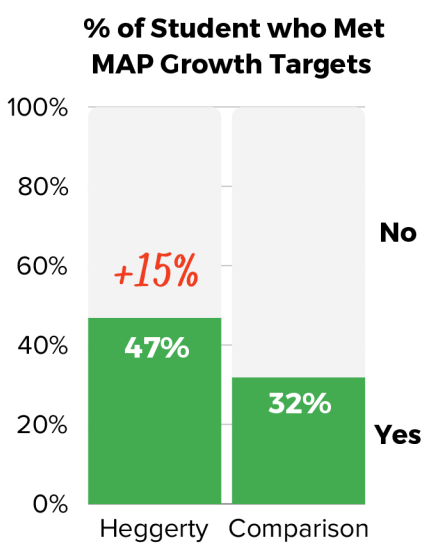
KEY FINDINGS

First graders using Bridge to Reading outperformed the comparison group in terms of overall gains and growth targets. In comparison to the district's typical literacy tools, 1st graders using Heggerty Bridge to Reading:

1. had significantly higher gains from BOY-EOY on MAP Growth RIT Scores (equivalent to one additional month of schooling*),
2. had a significantly higher proportion who met MAP Growth targets** (47%) compared to the comparison 1st graders (32%), and
3. students who started the year with low reading skills made the most progress.

Heggerty schools had a significantly higher proportion of students who met their Fall-to-Spring target growth





1. MAP EOY RIT Gains: $t(419)=2.47$, $p<.05$, Hedge's g Effect Size = .18
2. MAP Growth Met Target Yes or No: $X^2(1, N=570) = 10.36$, $p<.01$, Effect Size = .13

*Months of schooling calculated as Difference in Gains/Comparison Gains *9 months in a school year

**Students with Yes* or No* were excluded from this analysis, based on guidance from NWEA, N=570

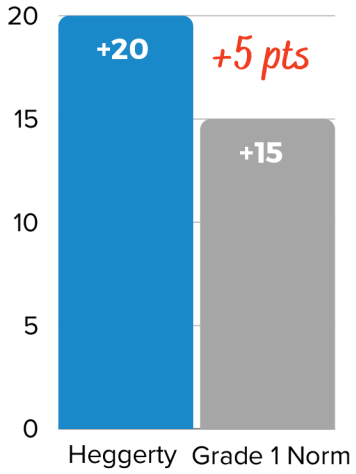
IMPACT ON LOWEST PERFORMING STUDENTS

Heggerty 1st graders with lower BOY reading scores showed the most progress, demonstrated by:

1. a significant correlation between lower BOY scores and greater EOY gains,
2. higher RIT gains for students in the lowest BOY achievement quintile (20th percentile or lower) compared to those in higher quintiles (equivalent to an additional 2.6 months of learning)
3. RIT gains for students in the lowest BOY achievement quintile (20 RIT) that exceeded national growth norms (15 RIT)

1. BOY Scores vs. EOY Gains: $r(237) = -.26$, $p < .001$
2. Achievement Quintile RIT Gains: $F(3, 235) = 4.52$, $p < .01$, partial $\eta 2$ Effect Size = .05 (small)
3. National Growth Norms: $p < .01$, Hedge's g Effect Size = .57

Low Quintile MAP Growth RIT Gains, BOY to EOY



COMPARISON TO NATIONAL NORMS

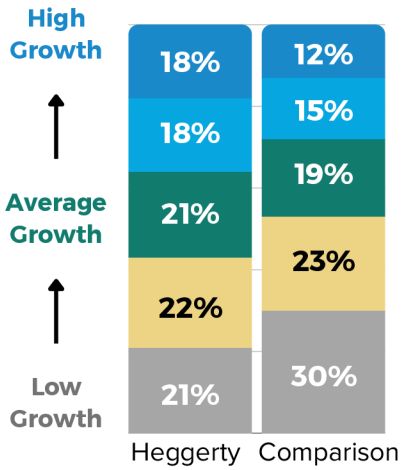
Growth Quintiles categorize students based on their progress from Fall to Spring, with higher quintiles indicating above-average growth and lower quintiles indicating below-average growth compared to national norms

When contextualizing student growth relative to matched peers nationwide, 1st graders using Bridge to Reading:

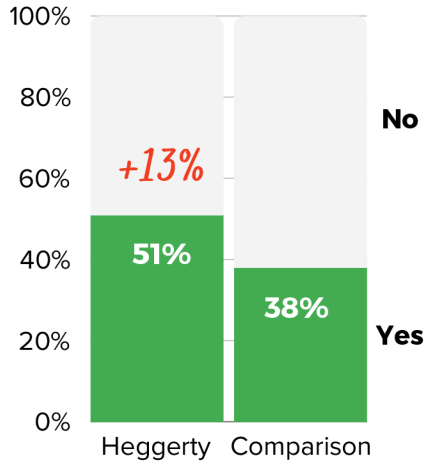
1. had a significantly higher proportion (51%) who demonstrated growth at or above national norms compared to the comparison 1st graders (38%)
2. had a significantly lower proportion of students (21%) underperforming (i.e in the lowest growth quintile) compared to comparison 1st graders (30%).

1. At/Above National Norms: $X^2(1, N=961) = 11.13$, $p<.001$, Phi coefficient = .11
2. Growth Quintiles: $X^2(4, N=961) = 11.16$, $p<.05$, Cramer's V (Effect Size) = .11

Fall-to-Spring Growth Quintiles



% of Students Growing At/Above National Norms



HIGHLIGHTED QUALITATIVE FINDINGS

Based on interviews with instructional coaches and surveys from K and 1st grade teachers:

- Educators were enthusiastic when talking about the quality of the program
- Educators saw growth in classrooms, reading behaviors, and on student benchmark assessments:
  - Decoding words, transferring reading to writing, and using hand motions while reading
- Teachers were feeling more confident in their own knowledge of literacy instruction and learned along with the students

"*Teachers adore this program and I think it's because it's given them tools and strategies to teach foundational skills explicitly*" - Instructional Coach, Treatment School

Evaluating the Effectiveness of Heggerty Bridge to Reading™: Efficacy Study for 1st Grade

End-of-Year Gains with NWEA MAP Growth

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Abstract

State legislators recognized that students in the United States continue to struggle with reading and have begun implementing laws requiring schools to use science of reading-aligned curriculum when teaching reading (Schwartz, 2022). Many students lack the foundational skills to even begin learning how to read in grades K-3 (Kuhfeld et al., 2022). This study evaluates the effectiveness of Heggerty's Bridge to Reading foundational skills curriculum for first-grade students in a rural, diverse southern school district during the 2023-2024 school year. Using a quasi-experimental design, LXD Research compared reading outcomes of first graders using Bridge to Reading (239 students) with a similar comparison group (724 students). The NWEA MAP Growth assessment showed significant reading gains and higher end-of-year scores for Bridge to Reading students relative to the comparison group. The statistical results were supported by positive feedback from educators and administrators implementing the program through interviews and surveys. These findings demonstrate Bridge to Reading's ability to improve reading achievement for first graders.

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Introduction

Children do not automatically learn how to read, they need to be taught through explicit instruction (Honig et al., 2018). Most children enter kindergarten as pre-readers, largely without prerequisite early literacy skills, including phonemic awareness (Castiglioni-Spalten & Ehri, 2003). Learning disruptions from the COVID-19 pandemic also impacted student reading development, with many children in grades K-3 lacking the foundational skills necessary to be successful readers (Kuhfeld et al., 2022). Even younger children who were not yet in kindergarten at the start of the pandemic are behind, with kindergarteners and first graders starting the 2022-2023 school year at lower achievement levels than in the past (Barshay, 2023). Further, despite ongoing efforts to combat learning loss as a result of the pandemic, scores in Phonological Awareness skills show a continued decline since 2019 (Curriculum Associates, 2023).

Many states have now passed laws requiring schools to implement a curriculum that aligns with the science of reading (Schwartz, 2022; Schwartz, 2023a; Schwartz, 2023b). The science of reading approach emphasizes the importance of explicit and systematic instruction of foundational word recognition and language comprehension skills, including decoding, phonemic awareness, letter instruction, connected reading, vocabulary, and grammatical structures (The Reading League, 2022; Petscher et al., 2020). According to the Institute of Education Sciences What Works Clearinghouse (WWC) guide, teaching students to recognize and manipulate the segments of sound in speech and linking those sounds to letters forms the foundation for reading proficiency. Phonemic awareness, which involves the ability to isolate and manipulate the smallest units of sound in a word (phonemes), is essential for decoding regular monosyllabic words, which comprise about 70% of such words in the English language. The importance of initiating this instruction early in a child's education helps prepare students to sound out and blend letters into simple words which is a critical step toward becoming proficient readers (Foorman et al., 2016).

Heggerty's Bridge to Reading is a foundational skills curriculum that pairs explicit phonics instruction with phonemic awareness lessons. Bridge to Reading provides all the components teachers need to provide comprehensive instruction in approximately 30 minutes a day within the literacy block.

Heggerty partnered with LXD Research to conduct a third-party evaluation of the Bridge to Reading program as it was implemented for foundational skills curriculum during the 2023-2024 school year in Hall County School District in Georgia. For the comparison Tier 1 curriculum, the elementary schools use Fountas and Pinnell Word Study, or teachers create their own curriculum with various resources from personal experience and research. This is an ESSA Level 2 Moderate study with a quasi-experimental design because students in multiple schools who used Bridge to Reading were matched and compared to students who did not use the program.

Bridge to Reading combines Heggerty phonemic awareness lessons with explicit daily phonics instruction. The Teacher's Editions focus on building teacher knowledge with a comprehensive scope and sequence, explicit language, and guidance for Tier 1 instruction. Daily phonemic awareness lessons include up to eight phonemic awareness skills: Rhyme, Phoneme Isolation, Blending, Segmenting, and Manipulation, and provide phoneme-grapheme connection activities, ample support with explicit teacher language, hand motion guidance, and QR codes for additional digital resources via myHeggerty to help build teacher knowledge and confidence with delivering the curriculum. Each phonics lesson outlines daily preparation details and materials, unit concepts, target skills, and is fortified with dynamic strategies such as "Jump In and Jump Out" for review and assessment, "Boost and Expand" for differentiated instruction, and on day 4 of each week, a Multilingual Learner Connection activity is provided for additional English Language Learner support.

Evaluation Questions

The evaluation aims to answer the following questions:

1. How does Bridge to Reading impact student achievement on NWEA MAP Growth in schools that implement the program compared to schools that do not implement the program?
2. What is the nature and extent of the Bridge to Reading implementation in participating schools?
3. What is the nature and extent of literacy program implementation in comparison schools?
4. What are teacher and administrator perceptions about the quality and impact of Bridge to Reading?
    a. What are teachers' and administrators' initial reactions to Bridge to Reading, and associated materials, content, pacing, and professional development?
    b. What suggestions do they have for improvement?

Methods

Design

This study used a mixed-methods approach, including a matched quasi-experimental design complemented by teacher surveys and literacy coach/administrator interviews. This combination of methods allows researchers to understand how the materials are being used in the classroom, gather teacher feedback, and discern the perceived impact of the program while also quantifying academic achievement.

Bridge to Reading is being implemented in Hall County, Georgia, a rural local school district with a total of 37 schools, 20 being elementary schools (National Center of Education Statistics, 2023). According to hallcounty.org (2023), the district serves almost 26,000 students. The demographic makeup of the students includes 44.1% White, 47.0% Hispanic/Latino, 4.7% Black, 2.8% of students

are two or more races, 1.3% Asian or Asian/Pacific Islander, and 0.1% American Indian or Alaska Native and 0.1% Native Hawaiian or other Pacific Islander (U.S. News, 2023). Academically, 32% of elementary students in Hall County Public Schools tested at or above the proficient level for reading in Spring, 2023 (U.S. News, 2023).

The district assembled a team of principals and instructional coaches from across the district to create the pilot program that turned into this study. Six schools would use a new curriculum during the 2023-2024 school year—three schools would use Heggerty's Bridge to Reading and implement the program with all K-1 students. Three schools tried another new foundational reading program (not Heggerty), and those schools are excluded from this analysis and report. Of the remaining schools in the district that were not trying a new reading program this year, a subset of similar schools were randomly selected as the comparison group.

All students were pretested within the first four weeks of school using MAP Growth, tested again in Winter 2023/2024, and were tested again in Spring, 2024. In exchange for participation, district leaders received a personalized version of the study results to inform district decision-making and free professional development from Heggerty for the Bridge to Reading schools.

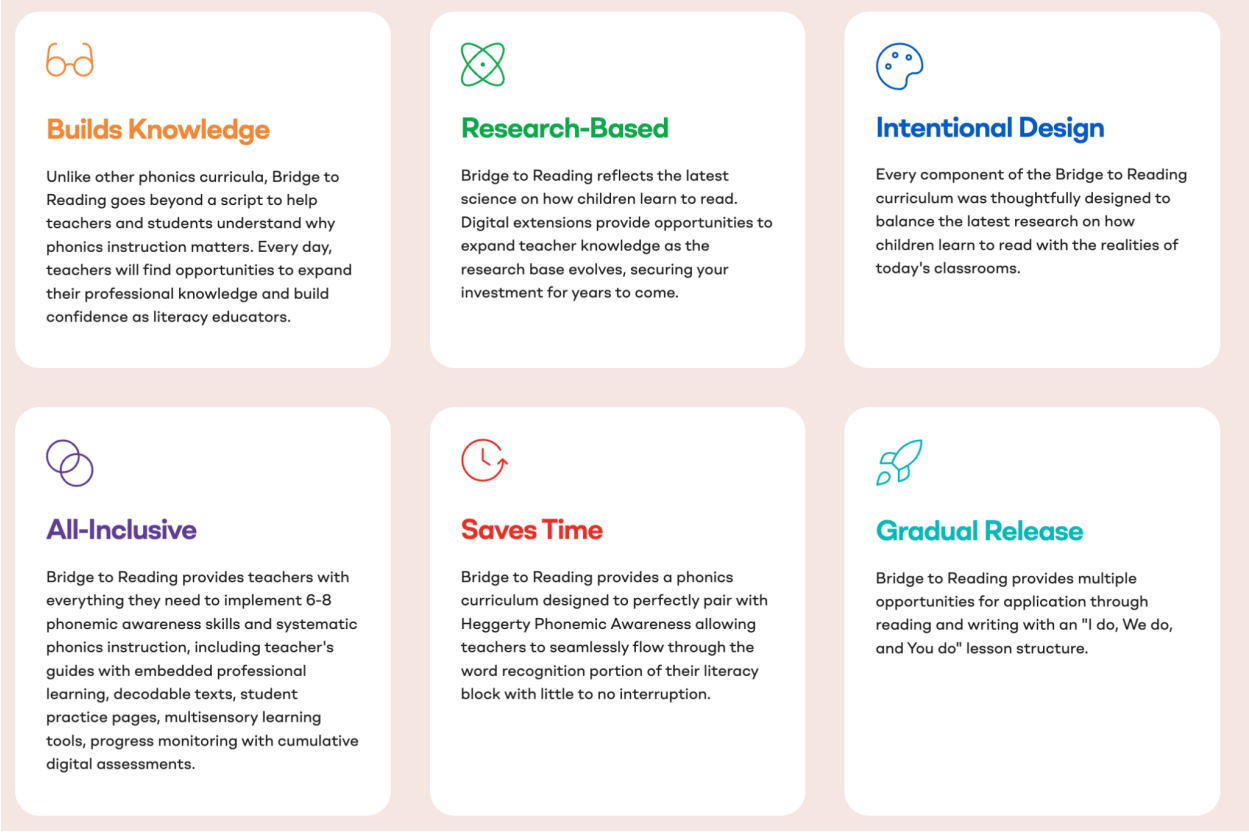
Treatment Group: Program Key Features

The Heggerty Bridge to Reading curriculum combines Heggerty Phonemic Awareness lessons with daily explicit phonics instruction. The program features:

- 170 lessons (34 weeks) of logically sequenced, step-by-step lessons that follow an "I Do, We Do, You Do" model to introduce new phonics concepts, help students build confidence through Tier 1 whole group instruction, and develop independent readers through frequent individual practice opportunities.
- Bridge to Reading implements the gradual release of responsibility approach, which supports students while encouraging autonomy in learning new materials. This approach has been linked to higher literacy and reading skills.
- The curriculum is designed to meet the needs of a diverse range of learners by providing daily differentiated instruction activities, targeted assistance, and resources to maximize every learner's potential.
- Instruction incorporates meaningful decodable passages and an aligned library of decodable books. These resources engage students while reinforcing their learning at regular intervals.
- Bridge to Reading offers a short, whole class, or small group assessment to measure the encoding skills of all learners three times during the school year. The results of this assessment can be combined with data gathered from universal screening assessment tools and internal assessments around early literacy skills. The results can be used to inform instruction for reteaching, small groups, and/or intervention.

- The Weekly Word Check is designed to be a quick and efficient way to monitor children's ability to apply phonemic awareness and phonics knowledge to spelling words using the sound-spelling relationship and Red Words taught that week.
- Student READ (Ready, Engaged, Active Decoders) workbooks provide opportunities for independent practice, applying sound-spelling relationships, developing decoding skills, improving fluency, practicing encoding, and mastering high-frequency Red Words.
- The Bridge to Reading curriculum offers grade-level specific visual aids and resources to strengthen alphabet knowledge, illustrating the multiple sounds letters stand for, and promoting articulation awareness to recognize mouth placement and help guide children in producing and differentiating letter sounds.
- The myHeggerty digital component of the program provides teachers with flexible access to instructional resources, including: on-demand professional development, a digital edition of the curriculum, manipulatives and interactives to support instruction, and a variety of additional support and training materials for teachers.

Figure 1. Main Features of Bridge to Reading



Comparison Group: Core Reading Program

Fountas and Pinnell Guided Reading and Word Study

The Fountas & Pinnell Classroom™ Guided Reading Collection provides small-group instruction through a collection of leveled texts (Fountas & Pinnell, 2022a) for K-6. The collection offers original A-Z level texts. Each title has an accompanying lesson folder to support small-group instruction. By grouping students at similar reading levels and selecting a text at their instructional level, teachers can scaffold students' growth by challenging them at the edge of their ability to process text incrementally (Fountas & Pinnell, 2022a). The FPC Guided Reading Collection facilitates differentiated, small-group reading instruction to meet students where they are and help them progress as readers.

The Fountas & Pinnell Phonics, Spelling, and Word Study System (PWS) provides lessons to expand children's reading and writing skills (Fountas & Pinnell, 2022a). The lessons focus on phonics, spelling patterns, high-frequency words, word meaning/vocabulary, word structure, and word-solving actions in whole-group and individual/small-group contexts. The program takes an inquiry approach and encourages students to construct their understanding of letters, sounds, and words. Connections are provided to mentor texts and examples for applying principles. Guidance is given for assessing student learning within lessons and in the online Assessment Guide. Additional digital classroom materials in Online Resources support instruction (Fountas & Pinnell, 2022b).

Assessment Descriptions

NWEA MAP Growth

NWEA MAP Growth assessments are adaptive interim tests designed to gauge a student's academic progress and development in the subjects of Reading, Language Usage, Mathematics, and Science. These assessments are not time-restricted and can be given up to four times annually during the fall, winter, and spring, with the possibility of a fourth optional administration in the summer. Typically, students take approximately one hour to finish each MAP Growth test.

MAP Growth assessments provide a personalized evaluation of each student's performance, considering their strengths and areas for improvement. These assessments rely on ability scores called Rasch Unit (RIT) scores, organized into percentiles based on a normed sample. This percentile data, as defined in the NWEA 2020 Norms Study (Thum & Kuhfeld, 2020), helps educators understand how much growth has occurred between testing events, and when combined with the norms established by the tests' authors, it reveals projected proficiency levels. As students progress from kindergarten through fifth grade, they use the same MAP Growth RIT scale assessment.

MAP Growth's unique approach offers a comprehensive view of student achievement, whether they perform on, above, or below their grade level. Moreover, the assessment provides students with an achievement percentile range, allowing both students and educators to effectively monitor performance during each assessment and over multiple years, making it a powerful tool for tracking academic growth throughout a student's educational journey.

Educator Feedback Methods

Educator Survey: The surveys were shared with the principals who sent them out to their teachers. A total of 34 K-1 teachers (21 treatment and 13 comparison) completed an online survey for feedback on their phonics and literacy instruction experience.

Administrator Interviews: Interviews were completed via Zoom with administrators or literacy coaches from both the treatment and comparison schools.

Sample Description

The initial approach for this paper was to include a sample of three comparison schools. However, as demonstrated below, the Heggerty school groups were demographically different from the original comparison group schools that were randomly selected. Therefore, a new, larger sample was identified from all the available schools, leading to a very close demographic and baseline score match.

Student Characteristics by Group

Three schools were randomly selected from the schools in the district that were not trying a new reading program this year. These schools had similar sized samples in each grade.

Table 1. Original Sample: Number of Students and Schools per Grade and Group

School Group	# of Schools	K	1
Heggerty	3	252	253
Comparison	3	329	318
Total	**6**	**581**	**571**

Heggerty and the comparison schools were similar in regard to gender distribution. However, Heggerty and the comparison group were disproportionate in terms of race/ethnicity. There were significant differences in the proportion of Hispanic, White, and Other (including Black, Asian, and Native American/Alaskan) students. Heggerty had significantly more White students and fewer Hispanic students than the comparison schools (see Appendix A1 & A2).

Due to the demographic differences between the two groups of schools, a second sample of comparison students was matched from across all of the available schools that had MAP Growth data. For each grade level, we used a matching procedure known as the 'balance-sample size frontier' to build a well-matched comparison group with data from all 14 relevant comparison schools, rather than the original three comparison schools for the MAP Growth analysis. This method is outlined by King, Lucas, and Nielsen (2017) and implemented via the R package MatchingFrontier.

The Matching Procedure & Groups

The matching procedure is designed to ensure comparability between treatment and comparison groups, with a specific focus on achieving balance across various sample sizes while minimizing participant exclusion. The matching process relies on a chosen imbalance metric (e.g., pairwise distance or energy distance) to calculate the best balance between groups. The analysis used 'energy distance,' a measure of dissimilarity between multivariate cumulative distributions (Rizzo & Székely, 2016), rather than one-to-one matching between a treated unit and a comparison unit. covariate balance was enhanced by setting parameters to calculate energy distance exclusively between treatment and comparison groups and selectively dropping participants from the comparison group until balance was achieved.

Researchers then applied the procedure to each grade separately, and the covariates included in the model were Fall RIT score as well as multiple demographic variables (ethnicity, gender, ELL status, SPED status, 504 status).

The pre-matched Kindergarten sample included 252 Heggerty students and 1,248 comparison students. As a result of the matching process, 547 comparison students were excluded from the analysis, resulting in a total sample of 953 Grade K students (Heggerty N = 252, Comparison N = 701). Similarly, the pre-matched Grade 1 sample included 253 Heggerty students and 1,251 comparison students. As a result of the matching process, 500 comparison students were excluded from the analysis, resulting in a total sample of 1,004 Grade 1 students (Heggerty N = 253, Comparison N = 751). Tables 2-5 below describe the final samples by grade level and condition after matching procedures were completed.

Table 2. Post-matching: Number of Students and Schools per Grade and Group

School Group	# of Schools	K	1
Heggerty	3	252	253
Comparison	14	701	751
Total	**17**	**953**	**1004**

Table 3. Post-matching Demographic Data for Students by Grade and Group

	Race/Ethnicity			Gender		
		Heggerty	Comparison		Heggerty	Comparison
K	Hispanic White Multiple Other	33% 59% 4% 4%	33% 58% 4% 5%	Female Male	48% 52%	49% 51%
1	Hispanic White Multiple Other	38% 56% 3% 2%	39% 56% 3% 2%	Female Male	47% 53%	47% 53%

Table 4. Post-matching Percent of Students with Limited English Proficiency, Special Ed., and Section 504 Status by Grade and Condition

Grade	Condition	Number of students	Limited English Proficiency	Special Education	Section 504
K	Heggerty	252	17%	6%	1%
	Comparison	701	17%	7%	0%
1	Heggerty	253	24%	8%	1%
	Comparison	751	24%	8%	1%

Table 5. Post-matching Fall RIT Scores by Grade

Grade	Condition	Number of Students	Average Fall RIT Score	SD	Baseline Equivalence Calculation
K	Heggerty	252	136.06	8.56	136.09 - 135.99 = 0.10 .10 / Comparison SD (8.79) = .01. .01 < .25 = *Equivalent*
	Comparison	701	135.99	8.79	
1	Heggerty	253	152.98	13.01	152.98 - 152.97 = 0.01 .01 / Comparison SD (13.36) <= .01 .01 < .25 = *Equivalent*
	Comparison	751	152.97	13.36	

For both Kindergarten and 1st grade groups, MAP Growth Reading RIT scores at the beginning of the year were found to be baseline-equivalent between Heggerty and the comparison schools (i.e., the difference in means was less than .25 SD) for baseline reading and all demographics.

Results

Student Outcomes

The matching procedure established baseline equivalence between the Heggerty and Comparison groups for all demographic variables and MAP Growth Reading RIT scores, ensuring

that any observed differences at the end of the year could be attributed to the program's effectiveness. Researchers then used independent samples t-tests to compare gains in RIT scores, Chi-Square tests to assess differences in categorical outcomes such as meeting projected growth targets, and Hierarchical Linear Modeling (HLM) to account for variance at the school level.

Additionally, researchers examined the relationship between baseline achievement levels and subsequent growth, employing correlation analysis and Analysis of Variance (ANOVA) to explore differences in growth across different achievement level ranges. The analysis also used NWEA's Conditional Growth Percentiles (CGP) to contextualize student growth relative to national norms, with Chi-Square tests assessing the distribution of growth outcomes across different quintiles. These statistical approaches provided a comprehensive evaluation of the Heggerty program's impact on student reading development. All analyses were conducted using the statistical software packages R 4.1.2 and JASP 0.18.3.

Note about Kindergarten Results

In the fall of 2023, the research team conducted interviews with the original three comparison schools. These interviews revealed that all comparison schools were using Heggerty Phonemic Awareness Curriculum in Kindergarten, which was heavily aligned with the scope and sequence of Bridge to Reading for the first few months of school. Therefore, the experiences of the kindergarten students in the fall semester were quite similar between the two study groups. After conferring with the product development team about the program material for the year's second half, the research team agreed that kindergarten scores would be excluded from analysis, and the report would focus on the results of the full school year for only 1st grade participants.

By the end of the year, all kindergarteners were still performing equally regardless of their assigned program. However, they demonstrated appropriate grade-level growth from Fall to Spring, with Heggerty students averaging 18.33 RIT points (NWEA Growth Norm is 16.45 RITs). In addition, 57% of Heggerty kindergarteners met their projected growth target. See Appendix for details.

First Grade Results

Attrition & Continued Baseline Equivalence

Seven first grade students from the original BOY sample changed schools which resulted in a condition change (Heggerty - Comparison or vice versa). They were excluded from further analysis. Given the baseline equivalence found between Heggerty and Comparison schools on demographic variables and MAP Growth Reading RIT scores, differences in scores at end-of-year reflect an effect of program effectiveness. The Spring MAP Growth Reading testing pool had a differential attrition rate of 1% for First Grade (6% Heggerty, 5% Comparison) from Fall testing

resulting in a new sample size of 239 Heggerty students and 724 comparison students. When examining Fall RIT scores for this group, they were still equivalent at baseline (see Appendix).

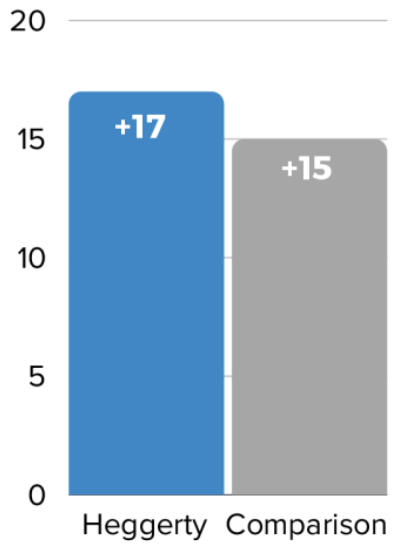
Results for MAP Growth BOY-EOY Gains

Heggerty students gained, on average, more RIT from Fall to Spring compared to comparison students, $t(419)=2.47$, $p < .05$, Hedge's g Effect Size = .18. These Fall-to-Spring gains can be interpreted as one additional month of schooling for Heggerty students when comparing their growth rate per month to that of the comparison group.

Table 6. Spring RIT Scores and RIT Growth by Condition

Grade	Condition	N	Spring RIT Score			RIT Growth Fall-to-Spring			
			Mean	SD	Significance	Mean	SD	Significance	Hedge's g Effect Size
1	Heggerty	239	169.98	13.93	ns	16.83	9.19	p<.05	.18
	Comparison	724	168.18	14.33		15.12	9.52		

Figure 2. MAP Growth Average RIT Score Gains, BOY-EOY



Results for MAP Growth Met Projected Growth

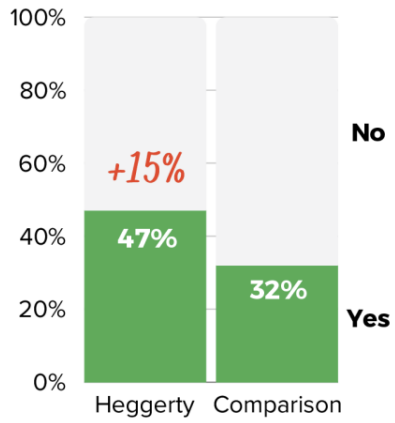
MAP Growth creates projected RIT growth targets for each student based on their grade and RIT score at the beginning of the year. For every student, MAP provides a projected growth target and then indicates whether or not students met that target at the end of the year as "Yes" or "No"

categories. Students with Yes* or No* were excluded from this analysis based on guidance from NWEA (N = 570).

Heggerty schools had a significantly higher proportion of students (47%) who met their Fall-to-Spring target growth compared to comparison schools (32%, X^2(1, N=570) = 10.36, p<.01, Phi coefficient (Effect Size) = .13 (small). Heggerty schools had an additional 15% of students meet their Fall-to-Spring growth target.

In addition, a Hierarchical Linear Model (HLM) found Heggerty to be significantly more likely to meet target growth than the Comparison group after accounting for variance at the school level, (*OR* = 1.88, CI=[1.05,3.35], t=2.13, p<.05).

Figure 3. Proportion of Students Who Met Projected MAP Growth Targets



Results for Heggerty Student Subgroups

Among Heggerty students, we examined whether lower BOY scores predicted higher change scores (i.e., did students who started further behind grow more?). Typically, students who are behind are placed in either Tier 2 or Tier 3 intervention groups to receive extra support in addition to their core reading program. Both treatment and comparison schools used Heggerty Phonemic Awareness as a resource for Tier 2 and/or Tier 3 intervention in addition to Florida Center for Reading Research and other activities teachers found. There was a significant correlation for 1st grade students, indicating that students with lower Fall RIT scores tended to gain more RIT by end-of-year than students with higher starting scores (r(237) = -.26, p<.001).

Students were grouped into 5 ranges (Low, LoAvg, Avg, HiAvg, High) corresponding with percentile ranges of 20 percentile points each, or quintiles. Descriptors and corresponding percentile ranges are as follows: Low: 20th percentile or lower; LoAvg: 21st to 40th percentiles; Avg: 41st to 60th percentiles; HiAvg: 61st to 80th percentiles; High: 81st percentile or higher.

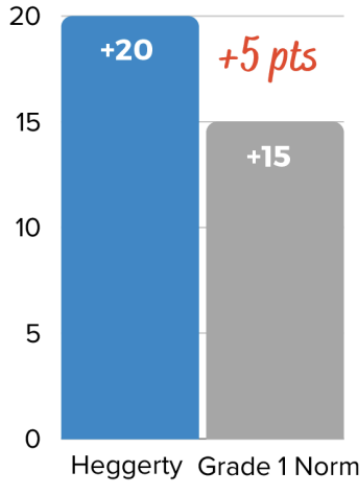
There was a statistically significant difference in Fall to Spring RIT gains between at least two Fall Achievement quintile groups, $F(3, 235) = 4.52$, $p < .01$, partial $\eta 2$ Effect Size = 0.05, equivalent to a Hedge's g Effect Size of .46. Post-hoc analysis adjusted for multiple comparisons revealed that Heggerty students who started the year in the Low Achievement quintile grew significantly more in overall RIT scores (M = 19.9, SD = 10.75) than students in the combined High-Average / High quintiles (M = 14.6, SD = 7.14; for full details, see Table 7 below).

Table 7. Mean First Grade RIT Gains by Fall Quintile

Fall Quintile	Number of Students	Mean Fall-to-Spring RIT Growth	SD
Low	68	19.94	10.75
LoAvg	41	15.36	8.42
Avg	61	16.9	9.08
HiAvg/High	69	14.58	7.14

When comparing Heggerty students to Grade 1 MAP Growth norms, students in the Low quintile (1st - 20th percentile) grew significantly more (19.9 RIT points) than the expected growth norm (15.5 points, $p < .01$, Hedge's g Effect Size = .57; see Figure 4).

Figure 4. Low Quintile MAP Growth RIT Gains, BOY to EOY, Compared to National Norms



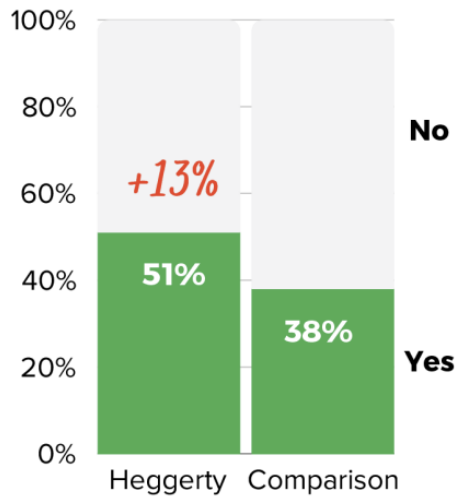
Contextualized Growth in Relation to National Norms

Conditional Growth Percentile

NWEA provides several metrics to contextualize student growth relative to matched peers nationwide. One such metric is the growth percentile, also known as conditional growth percentile (CGP), a numeric representation of a student's growth compared to their peers in the NWEA norms group. CGPs range from 1–99, with 50 considered average growth and 99 indicating the highest growth. Growth greater than the norm would result in a percentile rank higher than the 50th percentile, and growth less than the norm would result in a percentile rank lower than the 50th percentile.

At the end of the school year, Heggerty schools had a significantly higher proportion of students (51%) with Conditional Growth Percentiles at or above 50 than Comparison schools (38%; $X^2(1, N=961) = 11.13$, $p<.001$, Phi coefficient Effect Size = .11; see Figure 5).

Figure 5. Proportion of Students Growing At/Above National Norms

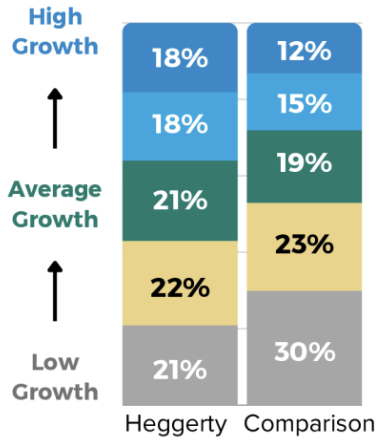


Growth Quintiles

Students were grouped into five growth quintiles (Low, LoAvg, Avg, HiAvg, High) corresponding to conditional growth percentile ranges of 20 points each. Unlike achievement quintiles that contextualize a static test score for a given time period, these growth quintiles categorize students based on their overall progress from Fall to Spring, with higher quintiles indicating above-average growth and lower quintiles indicating below-average growth compared to national norms.

Chi-Square tests showed a significant association between Group (Heggerty vs. Comparison) and Fall-to-Spring growth quintiles, $X^2(4, N=961) = 11.16$, $p < .05$; Cramer's V effect size = .11.
Post-hoc analysis adjusted for multiple comparisons revealed that Heggerty had a significantly lower proportion of students (21%) in the Low growth quintile than the comparison 1st graders (30%). Heggerty also had a higher percentage of students in the HighAvg and High growth quintiles than the comparison group, but the difference was not statistically significant after correcting for multiple testing (see Figure 6 for full details).

Figure 6. Fall-to-Spring Norm Growth Quintiles: Heggerty vs Comparison



Educator Feedback Outcomes

Educator Survey

An asynchronous survey was distributed among comparison and treatment schools. A total of 34 teachers completed the survey, 21 treatment and 13 comparison teachers. Among the Heggerty group respondents, 52.1% taught first grade and 42.9% taught kindergarten. Among the comparison group participants, 46% taught first grade, 46% of the teachers taught kindergarten, and 8% taught across grades K-2. Heggerty teachers' educational experience varied between 2-27 years, with most having taught at their current school for 1-4 years. For the comparison teachers, educational experience varied, with 46% having taught for seven or more years and 31% having taught for one to three years.

Program Usage

For Heggerty teachers, nearly all teachers (95%) indicated that they used Bridge to Reading five days per week, and 62% used the program for more than 30 minutes per day. The instructional practices predominantly involved comprehensive phonics lessons using a gradual release model, recognition and manipulation of phonemes, reading decodable words in isolation, and explicit teaching of phonics patterns. Teachers using Bridge to Reading reported more instances of

teaching irregular high-frequency words and reading decodable words in connected texts compared to the comparison group.

The most common instructional strategy was instructing students to read letters left-to-right through the word. Fewer than half of comparison teachers (46%) reported conducting dedicated phonics and decoding instruction five days per week. Instead, teachers reported dedicating only 3 days or just one day a week to phonics and decoding instruction. Reading instruction generally lasted between 76 and 90+ minutes per day for the comparison students. Although 58% reported including phonics instruction in their Tier 1 reading program, only 17% reported that their reading program fully covered phonics instruction. Approximately half of the comparison teachers reported using pictures as clues to read unfamiliar words, a strategy without a phonics base.

Comparison teachers reported using Fountas and Pinnell for their core reading program. Although the Comparison group had no exposure to Heggerty's Bridge to Reading program (the focus of this study), they did mention using Heggerty Phonemic Awareness Curriculum as a supplemental program. One teacher commented, "that it "completely transforms phonemic awareness instruction for young learners". Treatment teachers reflected on their prior use of Fountas and Pinnell where 81% of teachers felt they had a better understanding of what was missing in the previous reading program since using Bridge to Reading as their core foundational skill curriculum.

Professional Development

Regarding professional development, both groups reported receiving training in reading methods. However, Heggerty teachers received more professional development this past year. Heggerty commonly provided professional development through live, in-person workshops and onsite coaching two to three times per year. Teachers generally found the quality of the professional development to be excellent and engaging, with the right pacing. The learning objectives at these sessions were mostly, if not fully, met. Teachers felt that the Bridge to Reading program required less or equal effort to implement compared to other similar programs. They also felt comfortable leveraging the materials in Bridge to Reading for students who needed additional support and believed that the program was very well aligned with literacy development.

Educator Interviews

Comparison Interview Summary

Three interviews were conducted at three comparison schools in November of 2023. These semi-structured interviews were conducted to gain a sense of business-as-usual reading instruction practices. All three participants were instructional coaches with education experience ranging from 18-27 years. The instructional coaches identified using various resources in

kindergarten through first grade but primarily using Fountas and Pinnell Guided Reading and Word Study for Tier 1 and Heggerty Phonemic Awareness for Tiers 1, 2, and 3, depending on the school. For interventions, the schools also mentioned pulling some phonics materials developed by the Florida Center for Reading Research, but they did not identify specifics. Although these programs are in use, one school in particular discussed developing their own curriculum using a combination of resources to suit the needs of their students and incorporating phonics. When asked about professional development and training, all the educators brought up doing their own research and finding resources. Through the district, instructional coaches were trained in Orton-Gillingham and had positive feedback. For teachers, the instructional coaches were responsible for relaying training and knowledge.

Treatment Interview Summary

LXD Research conducted three interviews of educational professionals at schools implementing Heggerty's Bridge to Reading in grades K-1 to understand the perspective of day-to-day implementation and efficacy. The interviewees include a grade-level leader (first grade) with 7 years of teaching experience, a CARES Act Intervention teacher and leadership/literacy team member who has some experience working with Heggerty products, and an instructional coach specializing in curriculum and instruction.

Responses from the interviews supported the teacher survey finding that Bridge to Reading was implemented daily for 30-40 minutes. Teachers often found the lessons took longer than the allocated time, but indicated they prioritized completing the lessons rather than cutting them and staying within the allotted time. The most commonly used materials from the program were student workbooks and teacher editions. The most popular student manipulatives were the teacher size red word cards. In contrast, the spell tabs and posters were found to be more difficult to work with due to the inconvenience of the physical properties of the manipulatives. Bridge to Reading as a core program was used in conjunction with Fountas & Pinnell Mini Reading lessons or district composed materials for comprehension.

Educators were enthusiastic when talking about the quality of the Bridge to Reading program. They reported that their students benefited from the explicit and systematic instruction, having seen progress on their benchmark assessments and in the day-to-day classroom. Specifically, students were better able to break down words and use hand motions while reading. Educators brought up not seeing as much progress for second graders who did not use Bridge to Reading. Additionally, educators felt that the Bridge to Reading curriculum aligns well with their understanding of Science of Reading research. However, some noted that the pacing of the program may be challenging for students that are struggling a bit more. To mediate this, one interviewee suggested picking certain passages for specific students. She suggested adding more options regarding length and difficulty of these texts to help struggling students.

It typically took educators a bit over a month to feel comfortable implementing the Bridge to Reading program. The interviewees emphasized that teachers began feeling more confident in their own knowledge of literacy instruction and learned along with the students. The professional development provided by Heggerty was well-received. Teachers especially valued the second visit, in which training focused on observing lessons being taught and providing feedback and advice on potential improvements. The program overall was received positively; however, small mistakes in production of the materials such as minor misprints and the stickiness of the spell tabs contributed to some implementation challenges.

Conclusion

Bridge to Reading is designed to provide explicit instruction on phonemic awareness, systematic phonics, and high-frequency words - all essential components of learning to read (Honig et al., 2018). The guided practice and hands-on activities allow children to practice previously-taught concepts with spiral and cumulative review. The results of this study support the use of explicit and systematic phonics instruction to teach first graders how to read. First graders using Bridge to Reading had significantly higher gains from BOY-EOY on MAP Growth RIT Scores, equivalent to one additional month of schooling than the comparison group. The Bridge to Reading group also had a significantly higher proportion of students (47%) who met their MAP Growth targets than the comparison group first graders (32%).

While Bridge to Reading was helping first graders score higher and meet their targets, it also helped students close their literacy gaps. Students who started the school year with lower reading scores showed the most progress. Bridge to Reading group first graders in the lowest BOY achievement quintile (at the 20th percentile or lower) had higher literacy RIT score gains compared to those in higher quintiles - equivalent to an additional 2.6 months of learning more than students in higher quintiles. Additionally, their RIT gains exceeded the national Grade 1 growth norms with an additional 5 points.

First graders using Bridge to Reading showed incredible progress over the year relative to the comparison students. This quantitative growth is supported by the qualitative findings from interviews and surveys with administrators and educators using the program. Educators were enthusiastic when talking about the quality of the program, and emphasized seeing the growth in the classrooms with their students' reading behaviors. One instructional coach implementing Bridge to Reading commented, "*Teachers adore this program and I think it's because it's given them tools and strategies to teach foundational skills explicitly*". Additionally, respondents reported feeling more confident in their own knowledge of literacy instruction, and felt that that made them better teachers.

Overall, these findings support the claim that using Bridge to Reading can improve first graders' reading development and assessment scores. This study is the first efficacy study on the Bridge

to Reading program as a foundational skills curriculum since it was launched in 2023. Further research on Bridge to Reading and other products will be conducted to gain greater understanding of the effectiveness of Heggerty interventions in real classrooms. Future studies will include partnerships with multiple districts to research the impact of Bridge to Reading on a wider selection of grade levels. This additional research will allow Heggerty to continue iterating their products based on real-life implementation and educator perspectives.

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Appendix

List of Figures and Tables

Appendix

Supplemental Figures and Tables

Table A1. Original Sample: Demographic Data for Students by Grade and Group

	Race/Ethnicity			Gender		
		Heggerty	Comparison		Heggerty	Comparison
Kindergarten	Hispanic White Multiple Other	33%* 59%* 4% 4%*	46%* 40%* 4% 10%*	Female	48%	49%
1st Grade	Hispanic White Multiple Other	38%* 56%* 3% 2%*	48%* 42%* 3% 7%*	Female	47%	48%

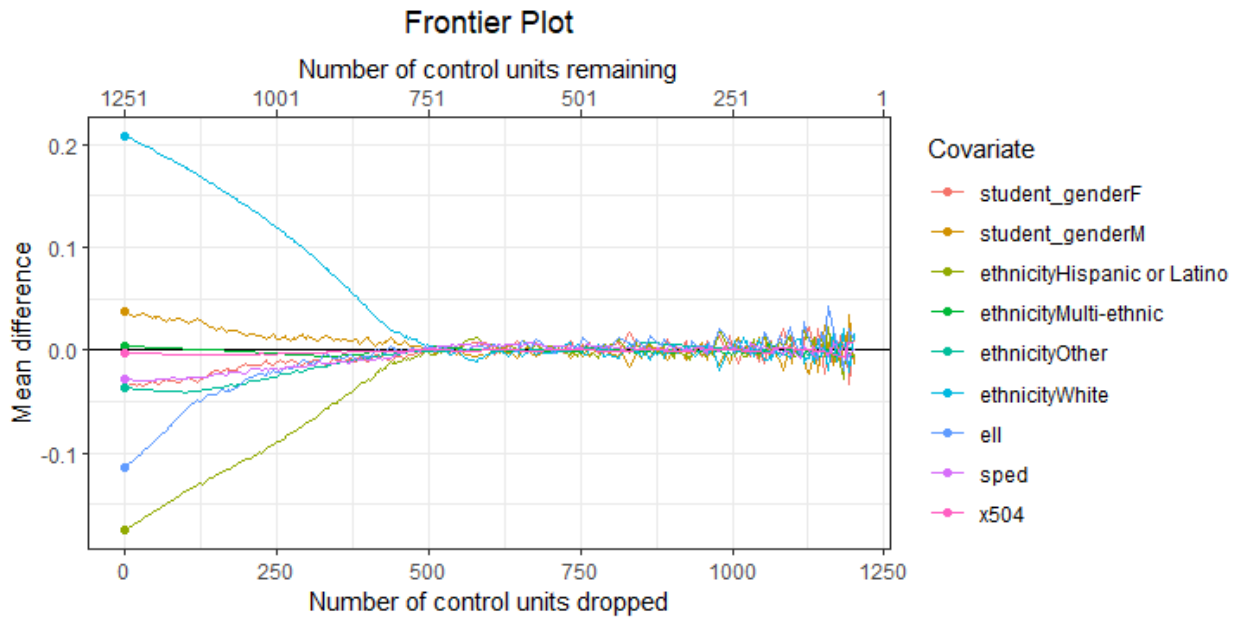
**Significant difference between Heggerty and Comparison.*

Table A2. Original Sample: Percent of Students with Limited English Proficiency, Special Ed., and Section 504 Status by Grade and Condition

Grade	Condition	Number of Students	English Language Learners	Special Education	Section 504
Kindergarten	Heggerty	252	17%	6%	1%
	Comparison	329	21%	6%	0%
1st Grade	Heggerty	253	24%	8%	1%
	Comparison	318	28%	12%	1%

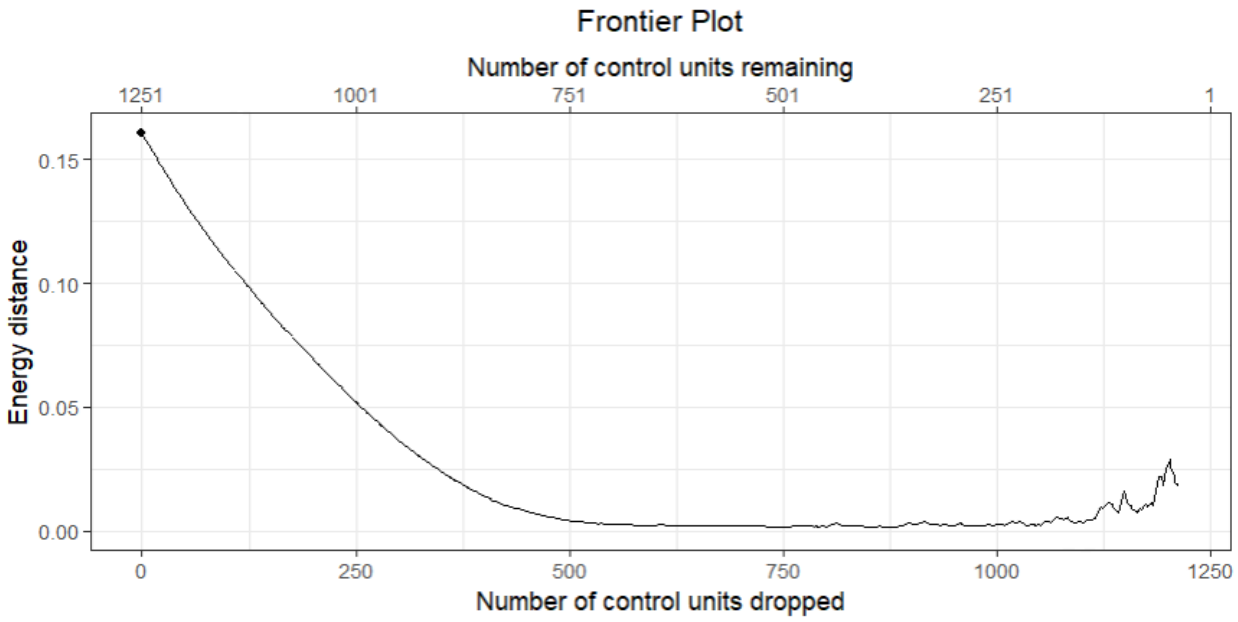
Supplemental Figures and Tables (continued)

Table A3. Matching Frontier Plot with Individual Covariate Balance



Note. Starting point for each covariate is the mean difference between treatment and control groups.

Table A4. Full Frontier. Relationship Between the Number of Units Dropped and the Imbalance Metric



Supplemental Figures and Tables (continued)

Table A5. Fall RIT Scores for Students Who Took MAP Growth at End-year

Grade	Condition	Number of students	Average Fall RIT Score	SD	Baseline Equivalence
1	Heggerty	239	153.15	13.11	Mean difference is .007 SD
	Comparison	724	153.06	13.31	

Table A6. Multilevel model results for 1st grade MAP Met Growth, accounting for school membership

Fixed Effects	*Odds Ratio*	*SE*	*t*	*p*	*95% CI*
(Intercept)	.45	0.06	5.65	< .001	[0.34, 0.59]
Group (Heggerty)	1.88	0.56	2.13	< .05	[1.05, 3.35]

Note. Random effects for School (Intercept) Variance is 0.12.

Table A7. Kindergarten Spring Scores, Fall-to-Spring Gains, Met Growth

Grade	Condition	Number of students	Spring RIT Score		Fall-to-Spring Growth		% Met Growth
			Mean	SD	Mean	SD	
K	Heggerty	242	154.36	12.63	18.33	9.28	57%
	Comparison	670	154.28	13.12	18.29	9.98	55%

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