

Student Success Research Rationale:

A Mixed-Methods Case Study on the Effectiveness of Luminous Minds
Supplemental Reading Resources in K-2nd Grade and Intervention



An Evidence-Based Case Study Conducted in Collaboration with Placer
County Office of Education

School Year: 2023-2024



Student Success Research Rationale

About Luminous Minds

Luminous Minds is a dynamic educational website and early learning platform that empowers districts, schools, non-profits, and educational institutions with access to a robust library of standard-aligned, research-based reading resources. Rooted in the **science of reading**, our resources are specifically designed to support educators in teaching the five essential pillars of reading instruction: **phonics, phonological awareness, vocabulary development, fluency, and comprehension**.

Through a combination of comprehensive digital and printable resources, professional learning opportunities, and curriculum alignment guides tailored to common district-adopted curricula, Luminous Minds helps educators advance literacy outcomes in primary grades.

In addition to adhering to the science of reading, Luminous Minds integrates **multisensory learning strategies** to accommodate diverse learning styles and the unique needs of students. These activities enhance memory and retention by engaging students **visually, kinesthetically, and auditorily**. Our resources span a wide range of materials, including worksheets, stories, flashcards, decodable texts, tactile word-building mats, hands-on reading games, songs, and engaging multisensory video lessons.

Key Features of Luminous Minds:

- **Comprehensive Resource Library:** Teachers gain access to an extensive collection of digital and printable reading resources, fully aligned with the science of reading and state standards. Intuitive filters allow searches by grade level, reading standard, or skill. Seamless integration is supported by alignment guides customized for widely-used district-adopted curricula.
 - **Professional Development:** Our professional development workshop series provides schools and districts with ongoing and continuous support to enhance teacher efficacy in literacy instruction.
 - **Administrative and Technical Support:** The platform offers administrative access, responsive customer support, and a library of professional development and tutorial videos to ensure easy navigation and effective implementation.
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Why Districts & Schools Choose Luminous Minds:

Luminous Minds offers an innovative approach to early literacy, equipping educators with the tools and strategies they need to transform reading instruction and inspire young learners.



Student Success Research Rationale

Single District Efficacy Research:

Study Design	Correlation Study
Adoption Type	1 Year Case Study - LM used as a supplement in conjunction with main, district-adopted curricula
District Size	Total Enrollment: 334 Total Students K-2 nd : 102
Assessment	Basic Phonics Skills Test III (BPST) – administered to all K-2 nd grade students (pre and post)
Registration	Chandra Roughton, M.Ed., Administrative Program Director

Study Overview:

A mixed-methods study was conducted with **nine teachers** and **102 students** to evaluate the performance outcomes when teachers supplemented their instruction with **Luminous Minds** resources.

Quantitative Analysis

Using the **Basic Phonics Skills Test (BPST)**, students were assessed with a pre-assessment in the fall and a post-assessment in the spring. Data analysis was performed based on district goals and expected norms, revealing measurable student growth in reading achievement and advancements in overall literacy outcomes. The ethical framework of the study ensured an objective evaluation of student progress, including analysis of results above and below expected benchmarks.

Qualitative Analysis

1. Teacher Utilization: Teachers participated in interviews to report how often Luminous Minds resources were integrated into their classroom instruction.

2. Professional Development Impact: Teachers received ongoing professional development focused on evidence-based teaching practices aligned with the **science of reading**. Follow-up surveys evaluated their knowledge and instructional application of these practices.



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Sustained Student Outcomes | Significant Findings & Long-Term Impact K-2nd

Kindergarten post-test results showed a 21.13-point increase, exceeding the expected point growth by 11.20%.
Kindergarten average growth rate across all students was 111.23%, with growth rate target set at 73.08%, reflecting a significant 38.15% increase above the expected growth rate.
The percentage of Kindergarten students reading at or above grade level increased from 20% to 47%, <i>representing a 27-point increase in the proportion of students achieving this benchmark.</i>
The percentage of first grade students reading at or above grade level increased from 50% to 64%, <i>representing a 14-point increase in the proportion of students achieving this benchmark.</i>
The percentage of second grade students reading at or above grade level increased from 54% to 75%, <i>representing a 21-point increase in the proportion of students achieving this benchmark.</i>
Second Grade post-test results showed a 21-point increase, exceeding the expected growth by 14.50%.
Second grade average growth rate across all students was 114.56, with growth rate target set at 25%, reflecting a significant 89.56% increase above the expected growth rate.



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Teacher Development Outcomes

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| <ul style="list-style-type: none">• 97% of teachers expressed high satisfaction with Luminous Minds' professional development, stating that it was highly beneficial to their practice. |
| <ul style="list-style-type: none">• Teachers reported a 38% increase in confidence when using Luminous Minds resources directly following the training sessions. |



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Findings & Analysis: Kindergarten

A total of 37 kindergarten students were assessed using the BPST. Due to absenteeism or disenrollment, 7 students did not complete a post-assessment. **For ethical purposes, the case study analysis includes 30 kindergarten students who had valid pre- and post-assessments.** This group encompassed all students, including those receiving special education services and students with active Individualized Education Programs (IEPs).

Pre-Test Results: Initial assessments revealed that 6 out of 30 students (20%) were reading at or above grade level. The majority, 24 out of 30 students (80%), were reading below grade level at the start of the study with a point value score of 0-25.

Post-Test Results: The expected growth norm for kindergarten students was set at **19 points**, corresponding to a **73.08% expected growth benchmark**. Post-test results showed a **21.13-point increase**, exceeding the expected point growth by **11.2%**.

Notably, the average growth rate across all students was **111.23%**, reflecting a significant **38.15% increase** above the expected growth rate.

At the start of the study, 80% of the students were reading below grade level. Post-test results revealed substantial progress across the group. **Final assessments revealed that 14 out of 30 students (47%) were reading at or above grade level.** The percentage of students reading at or above grade level increased from 20% to 47%, **representing a 27-point increase in the proportion of students achieving this benchmark.**

Findings & Analysis: First Grade

A total of 34 first-grade students were assessed using the BPST. Due to absenteeism or disenrollment, 6 students did not complete a post-assessment. Additionally, 4 students who were already reading above grade level and had scores near the maximum allowed points on the BPST were excluded from the analysis. Including these students would have skewed the data, as the study focuses on point growth and growth rates. These students could not reasonably achieve the growth target of 30 points due to their high initial pre-test scores. **For ethical and analytical consistency, the case study analysis includes 24 first-grade students with valid pre- and post-assessments.** This group represents the full spectrum of learners, including students receiving special education services and those with active IEPs.

Pre-Test Results: Initial assessments revealed that 10 out of 28 students (36%) were reading at grade level. 4 out of 28 students (14%) were reading above grade level. These are the 4 students who were excluded from further analysis. 14 out of 28 students (50%) were reading below grade level at the start of the study with a point value score of 0-30.



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Findings & Analysis: First Grade (continued)

Post-Test Results: The expected growth norm for first grade students was set at **30 points**, corresponding to a **100% growth benchmark**. Post-test results showed an average increase of 28.88 points indicating that students were 3.73% short of meeting their target.

The average growth rate among all students indicated that students were 4% short of meeting their target.

At the start of the study, 50% of the students were reading below grade level. Post-test results revealed substantial progress across the group. **Final assessments revealed that 18 out of 28 students (64%) were reading at or above grade level.** The percentage of students reading at or above grade level increased from 50% to 64%, *representing a 14-point increase in the proportion of students achieving this benchmark.*

Findings & Analysis: Second Grade (Part 1)

For the first part of the study in determining percent of students reading on target, a total of 33 second grade students were assessed using the BPST. Due to absenteeism or disenrollment, 5 students did not complete a pre- or post-assessment. **For ethical purposes, the first portion of this case study analysis includes 28 second grade students who had valid pre- and post-assessments.** This group encompassed all students, including those receiving special education services and students with active IEPs.

Pre-Test Results: Initial assessments revealed that 15 out of 28 students (54%) were reading at or above grade level. 13 out of 28 students (46%), were reading below grade level at the start of the study with a point value score of 0-59.

Post-Test Results: At the start of the study, 46% of the students were reading below grade level. Post-test results revealed substantial progress across the group. **Final assessments revealed that 21 out of 28 students (75%) were reading at or above grade level.** The percentage of students reading at or above grade level increased from 54% to 75%, *representing a 21-point increase in the proportion of students achieving this benchmark.*



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Findings & Analysis: Second Grade (Part 2)

In the second part of the study, which focused on determining point value increases and expected growth, a total of 15 second-grade students were assessed using the BPST. Thirteen students, who were already reading at or above grade level and had scores exceeding the maximum allowed points on the BPST, were excluded from this portion of the analysis. Including these students would have skewed the results, as the study's objective was to measure point growth and growth rates. These students could not reasonably achieve the 15-point growth target due to their high initial pre-test scores.

For ethical and methodological accuracy, the second part of the analysis included only the 15 second-grade students whose pre-assessment scores were below 76 points (out of a maximum of 91). This threshold aligned with the 15-point growth target. The group analyzed represented a diverse population, encompassing all students, including those receiving special education services and students with active IEPs.

Pre-Test Results: Initial assessments revealed that 2 out of 15 students (13%) were reading at or above grade level. 13 out of 15 students (87%), were reading below grade level at the start of the study with a point value score of 0-59.

The expected growth norm for second grade students was set at **15 points**, corresponding to a **25% expected growth benchmark**. Post-test results showed a **21-point increase, exceeding the expected growth by 14.5%.**

Notably, the average growth rate across all students was **114.56%** reflecting a significant **89.56% increase** above the expected growth rate.



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Teacher Development Outcomes:

Teacher Utilization:

Teachers in the District participated in interviews and surveys to provide qualitative data on the use and effectiveness of Luminous Minds resources. Teachers reported incorporating the resources into their classroom instruction as a supplemental tool.

- Kindergarten and second-grade teachers used Luminous Minds resources 2-3 days per week for 15-20 minutes per session. They integrated the materials during small group instruction, center stations, and, occasionally, daily word work.
- First grade teachers reported that they utilized Luminous Minds 1-2 days per week, for 10-15 minutes per session in a variety of settings including whole group instruction, homework packets, and intervention. In first grade, one regular teacher was absent for a significant portion of the school year, and a guest teacher served as a substitute. Unfortunately, the substitute teacher was not available for an interview. The first-grade teachers noted that during her absence, the substitute did not utilize Luminous Minds resources as consistently as planned.
- The Intervention team reported utilizing Luminous Minds for their primary-aged students 2-3 days per week for 15-20 minutes per session. They integrated the materials during small group instruction, intervention, and repeated practice.

Professional Development Impact:

Teachers completed surveys to evaluate the professional development provided by the Luminous Minds team and its impact on their instructional practices.

- **Satisfaction with Training:** 97% of teachers expressed high satisfaction with Luminous Minds' professional development, stating that it was highly beneficial to their practice.
- **Impact on Teacher Confidence:** Survey data revealed a 33% increase in teachers' confidence in implementing small group instruction and classroom interventions using Luminous Minds resources after participating in professional development.
- Additionally, teachers reported a 38% increase in confidence when using Luminous Minds resources directly following the training sessions.

