USER-CENTERED IMPROVEMENT TO TYPICAL ELEMENTARY LITERACY PRACTICES: A CASE STUDY INTERVENTION

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Abstract

More than twenty years have passed since the National Reading Panel (NRP) (2000) report attempted to answer the question: What works best in reading instruction? According to the National Assessment of Educational Progress (NAEP), reading scores (2022) show that a significant number of fourth and eighth graders are still struggling with reading proficiency despite the guidance provided by the NRP. At the same time, a preponderance of evidence from the sciences continues to distill what works best in reading instruction while states pass legislation to align classroom curricula and programs to the science of reading (SoR). This mixed-methods case study, conducted in a North Texas elementary school, evaluated the benefits and challenges of implementing a syllabication intervention based on SoR principles. The study utilized surveys and interview data from teachers and assessment data from students. Despite 52% of students being predicted to not meet the reading proficiency standards on the State of Texas Assessments of Academic Readiness, or STAAR, findings revealed that intervention had a substantial impact on both student achievement and teacher professional learning. Further, educators acknowledged the value of the intervention in enhancing their teaching methods, particularly in terms of professional growth and instructional awareness. However, challenges also occurred, including the nature of training, a lack of resources, inadequate feedback, and pedagogical alignment. The study highlights the importance of prioritizing users' needs and implementing scientific insights from the perspective of typical literacy practices.

Keywords**:** elementary, science of reading, literacy, syllabication, intervention

Introduction

In the two decades since the National Reading Panel (NRP) (2000) report, early education's reading instruction that balances the "Big Five" agreed-upon components has yet to improve national, state, and local reading achievement. Instructional interpretation often implements a combination of strategies that balance the five essential components: (1) phonemic awareness, (2) phonics, (3) fluency, (4) vocabulary, and (5) comprehension.

Although policymakers have advanced implementation of reading instruction based on scientifically derived evidence, meaningful application from practitioners lags (Solari et al., 2020). Educators and education systems struggle to balance accountability and the practicalities of implementation in the classroom. As classroom execution of scientifically aligned reading instruction lingers, an unacceptable number of children, specifically those from disadvantaged backgrounds, fail to acquire education's most important foundational skill–reading. Nevertheless, due to consistently poor reading outcomes, the question of how to best teach children to read persists.

To increase the likelihood that every student develops the skills of a proficient reader, teachers must carefully consider how students apply instructional reading strategies. While an accumulation of scientific evidence recommends reading instruction that aligns with the skills of expert readers (Mesmer & Kambach, 2022), well-intentioned practitioners may unwittingly misdirect potential readers by using instructional strategies that represent the unskilled readers' approach to decoding. In fact, Shanahan (2020) suggested that "many instructional routines common in today's classrooms have been drawn from teacher lore, logic, ideology, and tradition rather than from a cold-eyed look at what actually benefits student learning" (p. 119). Further, poor reading performance linked to typical literacy practices persist due to instructional reform initiatives that create inertia among educators and schools, causing teachers to wait for professional development, direction, and resources to improve and provide more equitable and higher-quality learning opportunities. In order to truly advance reading instruction, change must occur through classroom-driven improvement by identifying what works and recognizing and iteratively improving what does not work in typical literacy practices at the user level (Bryk et al., 2015).

Given the quality and scope of the scientific evidence available today, the reading wars should be a historical debate (Castles et al., 2018; Moats, 2020; Shanahan, 2020). Various policy mechanisms direct efforts toward reading reform, particularly in relation to how teachers teach reading, and the outcomes students achieve. However, despite federal and state policy efforts, improving early elementary reading outcomes to achieve grade-level reading proficiency by grade three has seen minimal change at scale. Simultaneously applying multiple levers will likely result in scattered attempts that do not progress towards significant transformation (Woulfin & Gabriel, 2020). Regardless of advances in reading research, without applicable classroom connections, the chasm between research and typical literacy practices will continue to limit the effectiveness of reading instruction.

Literature Review

Typical Literacy Practices

The remnants of typical literacy practices, reinforced by programs and approaches steeped in ill-advised protocols, underscore the challenge of transitioning towards a more scientifically aligned reading practice (Seidenberg et al., 2020).
Moreover, reading research has minimized the influence of the education system and school conditions on the quality of reading instruction (Woulfin & Gabriel, 2020). Strict adherence to a prescribed script of teacher-proof curricula has limited teachers' autonomy and capacity to foster student agency (Vaughn et al., 2022). Furthermore, the quality of typical classroom procedures often decontextualizes reading activities and limits motivation and engagement to the behavioral expectations of paper-based seatwork (Duke et al., 2017; Mirra & Garcia, 2020). In addition to complying with a prescribed curriculum, student learning further follows the teacher's instructional priorities, often aligning with the assessment-driven accountability system (Davis & Vehabovic, 2017).

Since “there is no single assessment instrument or procedure that provides a complete account of an individual student's process of reading a text" (Serafini et al., 2020, p. 285), a multi-dimensional or interactive perspective of reading and comprehension demands assessment systems that incorporate diverse assessment types tailored to specific objectives (Wixson, 2017). Consequently, the longer teachers rely on typical literacy assessments as influential guides for future instruction in reading, the more challenging it may be for them to envision alternative methods of reading and teaching (Levine et al., 2022). Nonetheless, a transformative shift is finally enabling education to conceptualize effective approaches, supported by a substantial body of evidence that has taken decades to coalesce.

The Science of Reading

After decades of research across disciplines, the sciences have converged to establish a reading comprehension map known as the science of reading (SoR).
Research evidence in favor of SoR is stronger and more comprehensive than the practical application of the science of reading instruction (Vaughn & Fletcher, 2020). Unbeknownst to most educators, basic research (i.e., correlational, descriptive, qualitative) from SoR is implemented impractically as an instructional formula. For example, in his attempt to reveal relevant evidence, Shanahan (2020) cites misrepresentation and misinterpretation of the term—SoR—as a barrier to effective
reading instruction. Improving the interpretation of research depends on the practical translation of effective classroom instruction (Seidenberg et al., 2020). By pragmatizing the interpretation of reading research following classroom practices, researchers may simultaneously increase the likelihood of scientifically aligned implementation and mend the cultural disconnect with practitioners (Solari et al., 2020).

Despite the positive probability and potential of learning to read, TLP often adds instructional obstacles because “there is not enough research on how to translate scientific facts into effective practices” (Seidenberg & Borkenhagen, 2022, p. 5). Before answering the question of what instruction aligns with SoR, researchers and policymakers should first consider whether the typical framing of SoR values everything that matters to achieving proficient readers, as the

SoR requires more than a decoding plus comprehension proficiency formula (Aukerman & Chambers Schultd, 2021).

Phonics Decoding

Accounting for the considerable presence of decoding in current reading research, clarifying specific decoding strategies should provide a simple portal to a science-supported reading pedagogy (Kearns & Whaley, 2019). When accurate articulation (i.e., language) and print awareness (i.e., decoding) merge in the classroom, children's cognitive processes demand instructional attention at both the grapho- phonemic (i.e., letter-sound) and semantic (i.e., language comprehension) levels to support reading comprehension (Vadasy & Sanders, 2021). Decades of research have consistently demonstrated that decoding and language comprehension abilities significantly account for the variability observed in reading comprehension scores (Apel, 2021) Phonics, the instructional method for mapping letters (graphemes) to sounds (phonemes) (i.e., grapheme- phoneme correspondences), equips students with the foundational skills necessary for accurate and automatic word reading (Seidenberg, 2018; Ehri, 2020). In consolidating basic phonics skills, students begin drawing on the knowledge of simple sound structures to read monosyllabic words (Toste et al., 2017; Kearns & Whaley, 2018).

Syllabication

The alphabetic transparency of monosyllabic words enables most decoders to establish a foundational footing in phonetic rules (Wang et al., 2019). Once the alphabetic code is sufficiently consolidated, it enables readers to decode unfamiliar multisyllabic words in upper elementary (Ehri, 2020; Ehri, 2022). However, the phonic skills acquired in reading monosyllabic patterns do not accurately transfer to multisyllabic word reading (Kearns, 2015; Toste et al., 2017; Wang et al., 2019).

Syllable division patterns adhere principally to a unit of pronunciation as having a single vowel (V) sound followed by a consonant (C) and/or another vowel (Kearns, 2020). A corresponding vowel sound guides every syllable; therefore, monosyllabic patterns (i.e., VCV, VCe, CCVC, CVCC) generally follow strict letter-sound correspondence (Kearns, 2015; Kearns & Whaley, 2019). Thus, to assemble a detailed sequence of decoding skills, Wang et al. (2019) discovered a baseline threshold for each grade level and carefully examined the threshold for decoding concerning reading comprehension: "Regardless of grade level, a decoding score below the decoding threshold almost always predicts low reading comprehension" (p. 399).

Aim and Research Questions

Incorporating syllabication, as a decoding strategy, may simultaneously enhance basic reading skills, such as monosyllabic word reading, and strengthen vocabulary acquisition through multisyllabic word reading. "We do not believe that instruction in decoding multisyllabic, multimorphemic words is getting enough attention in the elementary classroom as it should" (Mesmer & Kambach, 2022, p. 62). However, there is limited availability of research concerning syllabication as a decoding strategy (Kearns, 2020) and

improving our understanding of what works best in syllabication instruction calls for researchers to reexamine descriptive studies through the implementation challenges practitioners face.

The purpose of this study was to consider the perceived benefits and challenges of implementing a syllabication intervention within daily classroom instruction. Specifically, the following research questions guided this study:

1. How does the implementation of a syllabication intervention support the development of students' reading comprehension skills?
2. What changes in students' decoding skills were observed following the syllabication intervention?
3. What benefits did teachers perceive from implementing the syllabication intervention?
4. What were the perceived challenges to implementing a syllabication intervention?

Methodology

This mixed-methods case study was conducted in the 2021-22 school year at one elementary school in North Texas. According to Creswell (1998), a case study is a "bounded system," focused on issues illustrated by the case (p. 249). Given that education's motivation for improving reading instruction generally focuses on the quantitative outcomes of student performance, this case study focused on the teachers' perceptions of implementing a new district-wide reading intervention. By focusing on a single case, the researcher was able to delve into the intricacies of the subject matter, uncovering patterns, themes, and underlying mechanisms that may not be readily apparent in larger-scale studies. Prior to data collection, this study was approved by the researchers' university Institutional Review Board [IRB].

Background of the Study

In the 2018-2019 academic year, the State of Texas Assessments of Academic Readiness (STAAR) test revealed notable disparities in reading proficiency among third graders at a middle-class suburban elementary campus in a mid-size independent school district (ISD). Specifically, 65% of these students fell below state reading expectations, while only 34% met or exceeded them. This campus, which followed traditional instructional methods, served 353 students across grades K-5. The ethnic makeup of the student body was diverse: 58% White, 25% Hispanic, 6% Black, 8% identifying as two or more races, and 1% Asian. Reflecting its Title I status, 66% of students were economically disadvantaged and 56% were classified as at-risk. Despite a fourth of the population identified as Hispanic, less than 1% of students received ESL (English as a Second Language) services. Pertinent to the assessment of district and campus reading interventions, approximately 3% of the student body received support for dyslexia.

Context of the Intervention

As a result of more than half of third graders failing to meet the state standard, an evaluation was conducted on the effectiveness of Really Great Reading's Six Syllable Type program. Really Great Reading (RGR) was at the center of the district's initiative to improve reading outcomes in K-3. Theoretically, RGR establishes its approach in the science of reading (SoR). Deriving from SoR, RGR adheres to the Simple View of Reading (SVR), which promotes explicit and systematic instruction in word recognition (i.e., decoding) and language comprehension (i.e., vocabulary).

Fundamentally, RGR leverages syllabication as a decoding strategy. The approach operated as an embedded intervention in teachers' current practice (i.e., Balanced Literacy). Students received 30 minutes of direct syllabication instruction in addition to 90 minutes of literacy reading instruction. This intervention took place in whole or small groups for the entire year and was conducted in accordance with the scope and sequence outlined in the Texas Essential Knowledge and Skills (TEKS) standards, as established by the Texas Education Agency (TEA, 2023).

Demographics of the Participants

The study involved a convenience sample of three female general education teachers, all teaching in the second grade at the same school. These participants were selected based on their attendance at a specialized training workshop focusing on RGR syllabication techniques, which included expert consultation. All participants were White females who represented a complete grade-level team. Each teacher was responsible for a self-contained classroom, catering to the educational needs of 20 students, for a total of n = 60 second-grade students. Collectively, the teachers possessed 45 years of instructional experience, with 23 years dedicated specifically to teaching second-grade students. Of the three, two were seasoned second-grade educators, while one had recently transitioned to this grade level, having ten years of prior teaching experience in other grades.

Data Sources

Data was gathered using a combination of quantitative and qualitative measures to assess the impact of the syllabication intervention within an instructional context. The quantitative data was based upon student performance data gathered throughout the academic year from RGR Diagnostic Surveys and Northwest Evaluation Association’s (NWEA) Measurement of Academic Progress (MAP) assessments collected at the beginning, middle, and end of the academic school year. The RGR Diagnostic Decoding Surveys were selected for their direct alignment with the syllabication intervention, enabling analysis of effectiveness in developing students' decoding skills. MAP Growth tracked students' reading comprehension, while MAP Fluency evaluated their mastery of foundational decoding skills for proficient oral reading fluency.

Qualitative data was systematically collected through highly structured interviews. Seven questions were posed to the teachers in order to elicit straightforward yes or no answers, thereby ensuring clarity and consistency in the responses obtained. Specifically, the

structured interview questions targeted three key areas: (1) the alignment of the RGR program with teachers' existing instructional practices, (2) the nature of the intervention training (e.g., conceptual understanding), and (3) the feedback provided during classroom implementation.

To enrich the qualitative data, five additional open-ended questions were asked during individual face-to-face interviews. These questions explored teachers' perceptions of the strategy's effectiveness, the challenges they encountered during implementation, and the overall quality of the intervention.

Data Analysis

The data analysis proceeded in two directions: statistical analyses and an additional exploration of the qualitative responses. The quantitative data analysis for the study was based on the examination of decoding, fluency, and comprehension from pre-and post RGR Diagnostic Surveys and NWEA's MAP assessments. Specifically, the study analyzed data from oral reading fluency, phonics decoding, and overall reading comprehension to identify the quantitative outcomes. Student information was protected during data analysis by aggregating data to prevent individual students from being identified.

Before conducting the descriptive statistics, the study examined attrition and initial equivalence across measures (i.e., MAP & RGR Surveys) at each stage (i.e., fall to spring). While the study commenced with data points from 60 students, the final analysis of student progress for overall reading comprehension and foundational skill development was limited to 52 students whose complete data was available from the beginning-of-year (BOY) to the end-of-year (EOY) assessments. Mid-year (MOY) data were excluded from this specific analysis of progress over time due to inconsistencies in student participation across all three assessment points. The study's final data were derived from participants drawn from three distinct second-grade classrooms: Class 2A (n=15), Class 2B (n=19), and Class 2C (n=18).

To examine the effects of the RGR syllabication professional development, a frequency distribution table was created to record responses from highly structured interviews. Each inquiry pertaining to the effects of syllabication professional development was recorded with corresponding 'yes' and 'no' answers. Analysis revealed patterns related to the syllabication professional development and classroom implementation.

Face-to-face interview data were recorded and transcribed verbatim. Analytical notes were composed and analyzed during the transcription and reading of all data. Initial analysis procedures included charting and coding the interview responses to determine teachers' perceptions of the RGR syllabication intervention. These codes were then grouped into emerging themes represented in definitions and participant examples. Reviewing transcriptions alongside the reflective, analytical notes, themes, and categories reflected the teacher's perceived benefits and limitations of the decoding strategy instruction. Variations in responses were acknowledged, identified, and discussed during member-checking triangulation. Personal information was removed from the transcripts to protect the confidentiality and anonymity of each participant in order to prevent their identity from being disclosed.

Results

RQ1. How does the implementation of a syllabication intervention support the development of students' reading comprehension skills?

Quantitative findings present a mixed picture regarding improving students' reading performance. Reading proficiency from Classes 2A and 2C increased from 33% to 53% and 38% to 44%, respectively. However, Class 2B decreased reading proficiency from 42% to 36% (See Table 1). In aggregate, two of the three classes remain below the majority threshold of 50%. Therefore, most students in two of three classes fell below grade-level standards.

Table 1

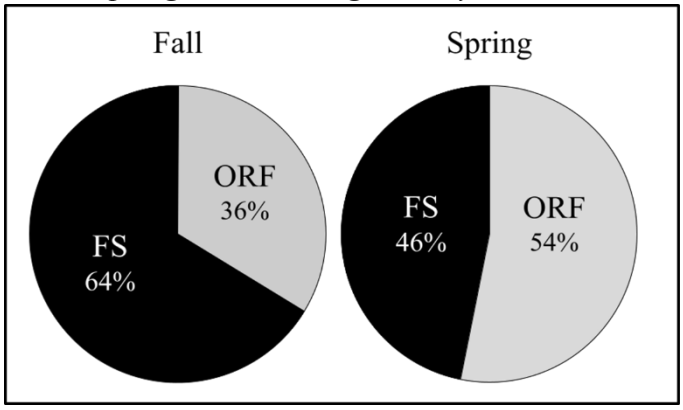
Fall to Spring Overall Reading Performance Measured by NWEA MAP Growth

Class	Fall	Spring
	At or Above Grade Level	At or Above Grade Level
2A	33%	53%
2B	42%	36%
2C	38%	44%

The MAP Fluency assessment tool evaluates students' mastery of foundational skills (FS) required for proficient oral reading fluency. In the fall, only 36% of students were proficient in oral reading fluency, but by spring, this percentage increased to 54%. However, 46% of students were yet to master the foundational skills required to achieve proficiency in oral reading fluency (See Figure 2).

Figure 2

Fall to Spring Oral Reading Fluency Achievement Measured by MAP Fluency



Academic readiness for STAAR reading summative assessment (See Table 2) in Class 2A projected that seven students (47 %) would not meet proficiency standards. In fact, nine students (47%) did not meet proficiency standards in Class 2B. In Class 2C, eleven students (61%) failed to meet proficiency standards. Of the remaining students from Class 2A, five (27%) Approached, one (6%) Met, and three (20%) Mastered grade- level standards. Five (32%) students Approached, two (10.5%) Met, and two (10.5%) Mastered from Class 2B. Remaining students from Class 2C: five (22%) Approached, one (6%) Met, and two (11%) Mastered state reading standards. Aggregately, 27 students (52%) were predicted to not meet proficiency standards in reading on STAAR. Furthermore, of the remaining 25 students (48%), 11 students (22%) Approached, five students (10%) Met, and eight students (16%) Mastered the reading standards.

Table 2

Spring STAAR Projected Proficiency Measured by MAP Growth

Class	Achievement Level			
	Did Not Meet	Approaches	Meets	Mastered
2A	47%	27%	6%	20%
2B	47%	32%	10.5%	10.5%
2C	61%	22%	6%	11%

RQ2. What changes in students' decoding skills were observed following the syllabication intervention?

Proximal measures from the RGR Survey were analyzed to examine the effects of direct syllabication instruction on decoding skills. The RGR Survey characterizes readers on a spectrum ranging from Emerging Reader to Strong Decoder. As a cohort, the percentage of Emerging Readers decreased from the beginning (23.9%) to the end (18.8%). However, the number of Strong Decoders also decreased from the beginning (17.9%) to the end (6.9%). Upon further analysis at the class level, Class 2A's Emergent Readers and Strong Decoders decreased from the beginning (33.3%, 20%, respectively) to the end (25.8%, 18.8%). Class 2B also decreased in both Emergent Readers and Strong Decoders from the beginning (28.4%, 5.9%, respectively) to the end (18.7%, 3.2%). In Class 2C, Emergent Readers and Strong Decoders also decreased from the beginning (14.4%, 10.8%, respectively) to the end (13.2%, 5.3%). While all classes decreased the number of Emerging Readers, students failed to sustain proficiency as fluent decoders (See Table 3).

Table 3

Decoding Proficiency of Students Measured by RGR Surveys

Class	Fall (Beginning)		Spring (End)	
	Emerging Readers	Strong Decoders	Emerging Readers	Strong Decoders
2A	33.3%	20%	25.8%	18.8%
2B	28.4%	5.9%	18.7%	3.2%
2C	14.4%	10.8%	13.2%	5.3%

RQ3. What benefits did teachers perceive from implementing the syllabication intervention?

An analysis of the highly structured and face-to-face interviews responses revealed benefits to implementing the syllabication intervention. In the dichotomous (yes/no) responses, all of the second-grade teachers reported that the newly introduced syllabication intervention was *aligned* with their existing instructional methodologies. Further, all of the teachers highlighted that the training for the intervention was effectively differentiated and structured, facilitating a comprehensive understanding of the underlying concepts. This understanding allowed them to adapt and integrate the concepts into their established teaching practices.

From the five open-ended responses, interviews revealed two unique themes regarding teachers' positive perceptions. Specifically, themes of *professional growth* and *instructional effectiveness* resonated. Regarding professional growth, all teachers reported that the syllabication intervention implementation was favorable for their development as educators. One teacher explained, "I feel like the more I do this, the better that it's going to get."

Moreover, the teachers recognized the practical benefits of the syllabication intervention in improving their *instructional effectiveness* to enhance their students' reading proficiency. For example, one teacher candidly admitted the need for improvement in their explanatory skills yet remained optimistic about the overall intervention: "I feel like it's effective. I feel like even myself; I need to get better at explaining it better to them." Feedback also highlighted the teachers' ability to align and adjust the language to increase effectiveness. This adaptability is illustrated in the following excerpts shared by the teachers: "You're trying to change your mindset about how you're saying something" and "once I started implementing the different techniques, the opening door and the closed, it really bridged some of those gaps." Overall, the essence of teachers' responses expressed a willingness to improve instruction in favor of student needs. This is exemplified by statements such as, "I still think they need to have it broken up into syllables" and "I feel like it's effective."

RQ4: What were the perceived challenges to implementing a syllabication intervention?

After analyzing the highly structured and face-to-face interview responses, teachers explicitly revealed that the implementation of the syllabication intervention had numerous challenges. In regard to the perceived challenges to effective implementation, four themes emerged: (1) Nature of training, a (2) Lack of resources, the (3) Absence of feedback, and (4) Alignment to practice.

Regarding the *nature* of the intervention training, the teachers raised concerns about its modality and timing. For instance, during the interviews, two of the three teachers highlighted the challenges related to these aspects, mentioning they received their training virtually (i.e., via Google Meet) over the summer. One teacher expressed a preference for timing, stating, "I wished we would have gotten it at the beginning of the year instead of at the end of the year." Additionally, another teacher highlighted, "it was a short training over what we have already been trained on." Sharing a similar sentiment, another teacher expressed:

> It was just a couple of hours of trying to do something, over the internet. And you're not actually right there. So, you're not really getting, you know, um, really good training. You're just kinda getting, like, little bits and pieces of it. So, I think that's a huge variable that affects your training.

Because some teachers reported they felt "forced into doing something over the internet," gaps in professional learning may have persisted: "You're not getting a really good training. You're just getting, like, little bits and pieces of it." Overall, teachers expressed the need for "more hands-on" training in a "real-life setting–like doing it in the classroom so that we can become even better at it."

Even though teachers perceived that the *nature of the training* limited implementation efforts, teachers overwhelmingly agreed that the *lack of resources*, not having RGR student phonics kits, was "the biggest obstacle." Per the district, each teacher that completed the RGR training was promised enough kits to implement the strategy in small groups. "I only have one kit for 20 students," and "I thought that maybe we would get like three or four kits that way, we could work with small groups." Two of the three teachers had received one kit each, but one teacher was left without: "I have no kits." Because RGR training leverages the syllabication kit for effective implementation, teachers "feel like it could be easy to implement, but we are lacking the resources needed to implement in the classroom." One teacher even reported, "We didn't get the actual RGR; we got the science of reading which taught us a little bit."

After analyzing the highly-structured interviews, some discrepancies emerged in teachers' responses about the feedback they received during implementation. Two of the three teachers stated that no formal feedback was provided. One teacher, however, initially reported receiving timely and specific feedback that increased her efficiency. During member-checking, she clarified that this feedback came from informal peer conversations and self-reflection, rather than from campus or district administrators. In the end, all three teachers agreed that formal feedback during the implementation of the syllabication intervention was not provided by school or district leaders.

Variabilities also emerged regarding the *alignment of training* to current practice and whether the RGR training required a pedagogical shift. Although all three teachers agreed that the training aligned with their current practice, two teachers indicated that minor shifts were

necessary to implement the decoding strategy. In fact, one teacher remarked that she needed "to reprogram your brain to say it a little bit different."

Teachers further explained the difference between their current teaching methods and the necessary changes for implementing the syllabication strategy, considering instructional variations and specific language: "Just getting used to some of the terminology like 'phonemes', and things like that." Implementation of the strategy relied on specific language concerning six syllable types (e.g., "open syllable" and "closed syllable") and gestures/signals for short and long vowels.

Discussion

The quantitative findings of this study revealed that reading progress did occur but also that there were still challenges. For example, Classes 2A and 2C showed an increase in reading proficiency. Yet, this improvement was not uniform across all classes, as evidenced by Class 2B, where reading proficiency declined from 42% to 36%, indicating that a significant proportion of students struggled to meet grade- level standards. And two out of the three classes remained below the 50% threshold in meeting proficiency underscoring that while there are areas of progress, a considerable number of students continue to face challenges in reaching the expected level of reading competence.

The MAP data revealed a positive trend with an increase from 36% proficiency in oral reading fluency in the fall to 54% in the spring. However, nearly half of the students (46%) did not master the foundational skills necessary for proficiency in oral reading fluency, emphasizing a significant area for targeted intervention. Also, looking at results from the STAAR data, in Class 2A, projections indicated that 47% of students would not meet proficiency standards, a prediction that was reflected in actual outcomes. In Class 2B, 47% of students did not meet proficiency, while in Class 2C, the proportion was higher at 61%. When considering the students who did meet the standards, the distribution varied across the classes, with a minority achieving the Met and Mastered levels. Overall, 52% of the students were predicted to not meet the STAAR proficiency standards, and this was closely mirrored in the actual outcomes.

The variability (or differences in skill levels) in proficiency levels across classes suggests that it essential to explore the specific instructional approaches that facilitated the reading improvement as factors such as differentiated instruction or the integration of the syllabication intervention could have played a role. Across the grade level, there was a noticeable decrease in the percentage of Emerging Readers, from 23.9% at the beginning to 18.8% at the end of the study period. This decline suggests that the syllabication instruction may have contributed to moving students away from the lowest proficiency level in reading. However, the decrease in the number of Strong Decoders, from 17.9% to 6.9%, raises concerns about the effectiveness of the instruction in sustaining and advancing students' decoding skills to the highest proficiency level. Data revealed a notable dip in students' decoding performance, potentially linked to variations in instructional rigor. Teachers reported challenges such as limited access to timely feedback and some misalignment between the intervention protocols and their established practices. These factors may have impacted the consistency of implementation and, in turn, student outcomes.

Analyzing the alignment between instructional methods and the unique needs of

each class is crucial for understanding the observed changes. Future discussions should delve into identifying successful practices that led to improvement and addressing potential shortcomings in teaching strategies that may have hindered progress. This assessment lays the foundation for informed decision-making on syllabication

implementation, with progress toward ensuring a practical approach to improving reading proficiency across all classes.

Addressing the decline in both Emerging Readers and Strong Decoders raises fundamental considerations for sustaining proficiency as fluent decoders over time. To address the decrease in performance as rigor increases, it is crucial to support the implementation of interventions with targeted and timely adjustments. The declining performance underscores the dynamic nature of the assessments, revealing that while initial strides are made in increasing proficiency, the subsequent instructional intervals demand a heightened level of instructional awareness and student needs. Direct instruction may benefit from a diagnostic approach that adapts to the real-time needs of students. Recognizing the unique challenges Emerging Readers face and those at risk of regressing from the Strong Decoder category requires a personalized approach to instruction.

Implementing diagnostic teaching methods allows educators to identify specific areas of struggle and tailor interventions accordingly. Furthermore, it is essential to ask: What external factors, such as student engagement, classroom environment, teacher training, or resource availability, might have influenced the observed changes in decoding skills? How can these factors be considered in refining future instructional approaches? By embracing diagnostic teaching strategies and leveraging personalized interventions, educators can create a dynamic and adaptable learning environment that caters to the evolving needs of students, promoting sustained progress in decoding skills.

In articulating a need for professional growth, teachers demonstrated a heightened awareness of their instructional practices, underscoring the positive impact of syllabication intervention implementation on their ongoing professional learning and the potential enhancement of reading instruction and student outcomes. Professional development aimed at fostering a culture of ongoing improvement in the implementation of instructional strategies, including syllabication, must prioritize teachers' valuable input and insights. Recognizing teachers as key stakeholders and experts in their classrooms is essential for the success of any initiative. Incorporating teacher insight and input ensures that professional learning is relevant, responsive, and aligned with the unique challenges and needs observed in real-world instructional settings.

Surveys, focus groups, and regular check-ins allow educators to express their perspectives on the effectiveness of the training, suggest adjustments, and highlight areas that require further support. This iterative feedback loop ensures that professional learning remains responsive to teachers' evolving needs and experiences.

It is worth noting that at the onset of this study, teachers agreed to observations according to specific criteria using a syllabication observation protocol during direct instruction on RGR syllabication strategies. The protocol assessed implementation fidelity by ensuring the instruction was delivered consistently and accurately. The protocol involved examining specific criteria related to syllabication language, instructional components, learning activities, and material resources to assess the instructional quality of the implementation. The observation would have allowed for a detailed and explicit examination of the teaching process to ensure the intervention was implemented as intended. However,

given the perceived challenges, all teachers

declined the opportunity to be observed. Given the content knowledge and resources required to implement the syllabication strategy effectively, it is important to consider conditions that impede instructional efficacy.

Educational Implications

Given the recent surge in the science of reading movement in state legislatures, the results of this study hold particular significance. While most of these legislative measures advocate implementing evidence-based teaching methods, specific laws prohibit typical literacy practices that researchers have identified in contrast to current evidence. One example is the new laws targeting a particular instructional approach known as three cueing. In 2023, Texas became the fourth state to ban the three-cueing approach. In the future, research will focus on determining the effectiveness of SoR laws, examining how these laws affect the number of students who perform at grade level, and identifying the policy factors that have the most significant impact.

Despite the nationwide focus on enhancing early elementary reading outcomes, the National Council on Teacher Quality (NCTQ) reports that the long-term sustainability of potential policy actions to improve the implementation of the SoR relies on effective teachers (Holston et al., 2024). The key to achieving lasting progress in student literacy lies in adopting literacy strategies that prioritize the effectiveness of teachers. The NCTQ report recommends five policy actions that include requirements for standardizing teacher preparation programs aligned to SoR, rigorous examination for elementary reading licensure, and most relevant to this study, the ongoing support and professional learning for teacher implementation of SoR aligned programs.

This study highlights the challenges in implementing the syllabication intervention and emphasizes the need to address training, resources, and instructional practices to improve student reading performance. The findings suggest the importance of refining implementation practices, providing ongoing support to teachers, and considering the impact of contextual factors on the effectiveness of interventions. Future research can contribute to a better understanding of the factors that influence instructional efficacy and support the effective implementation of reading interventions by iteratively refining implementation practices in authentic classroom settings. The lack of formal feedback from school or district leaders during implementation suggests a need for more structured support systems. Establishing consistent, formative feedback could strengthen implementation fidelity and teacher confidence.

Conclusion

Implementing an effective program within an ineffective education system can present significant challenges. While it may be possible to achieve some degree of success, the overall impact and sustainability of the program are likely to be limited. An effective program requires alignment with the education system's broader goals, values, and policies. If the system itself is ineffective, characterized by outdated practices, bureaucratic hurdles, or conflicting priorities, it can impede the successful implementation of the program. The program may face resistance, inadequate resources, or inconsistent implementation without a system of support. Improving the system, addressing structural issues, providing ongoing

job-embedded professional learning, and creating supportive policies can increase the chances of successful implementation. For effective programs to have a lasting impact on student learning, structural change is often required to create a sustainable education system.

Nevertheless, developing scalable solutions to reduce variability in reading instruction is a scientific endeavor that warrants urgency and requires an improvement process that continuously challenges traditional assumptions of how to best teach reading. Yet, despite scientific convergence and consensus on research regarding how children learn to read, classroom reading instruction remains resistant to the controlled outcomes of research (Seidenberg et al., 2020). Considering the contrasting approaches of research's rigorous methodology and the confounds of the classroom, how do we develop an iterative process that leverages the knowledge of both educators and researchers to advance reading instruction in favor of students? In the spirit of improvement science, positioning teachers as the primary informants in the research process establishes the classroom as the catalyst for inquiry (Gabriel, 2020). As a result, practitioners prompt research that evaluates practical evidence.

To advance the debate over what works best in reading instruction, a primary objective of educational research is to pinpoint instructional practices grounded in evidence and determine how these practices can improve student outcomes (Capin et al., 2021). By adopting an improvement science approach, researchers and practitioners can create a true partnership rather than a one-way model where practitioners follow researchers' instructions (Troyer, 2022). This approach enables researchers to learn from practitioners, creating a collaborative and mutually beneficial relationship.

In order to overcome the difficulties in putting the syllabication strategy into action, it would be beneficial for future research to investigate the systems and processes that either assist or impede implementation efforts. This could involve studying the role of instructional leadership, reading programs and curriculum, and fidelity to prescriptive instructional approaches within schools to facilitate effective implementation. Understanding the organizational factors that contribute to successful implementation can inform the development of supportive frameworks and guidelines for educators. Without practitioner-informed translation of scientifically aligned decoding instruction, two decades of data from typical literacy practices informed by the NRP reveal the limited likelihood of improving reading performance. Supporting a scientific change process towards a set of comprehensive practices that ensure reading proficiency for all students depends on the classroom contributions of practitioners.

Limitations

This study faced several limitations that are important to consider when interpreting the findings. First, the small sample size, drawn from only three second-grade classrooms within a single elementary school, limited the diversity of participants and did not achieve sufficient saturation. Because the participants shared similar instructional contexts and demographic characteristics, the findings may not be generalizable to broader or more diverse school settings. Additionally, because this study had no control group, it cannot claim causation. The design was descriptive in nature and aimed to explore teacher perceptions and observable patterns rather than establish cause-and-effect relationships. The researcher’s presence and preconceived ideas may have further influenced the data collection and analysis process, contributing to potential

observer bias. Future research should consider including larger and more varied samples, along with control or comparison groups, to strengthen external validity and minimize internal threats to the study's conclusions. Further examination is necessary to better understand the relationship between students' use of decoding strategies and teachers' instructional knowledge.

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