

Improving Reading Fluency Through the Use of Word Dice

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Abstract— Reading difficulties are one of the most significant things being addressed right now in education departments worldwide. This study examined the effectiveness of using word dice to improve pupils' reading fluency. A classroom-based action research design was used in this study. Participants of the study were the grade 5 pupils in the Basic Education Department in the Elementary Department at Misamis University Ozamiz City for the school year 2022-2023. It was participated by 15 grade 5 pupils through a purposive sampling technique. A classroom-based action research design was utilized to evaluate the effectiveness of using word dice and their effects on the pupils' reading fluency. It utilized passage, lesson plan, word dice, rubric, and interview questions as research instruments. The researcher computed descriptive statistics to determine the mean and standard deviations of the level of performance before and after the intervention. At the same time, qualitative analysis of the interview data was conducted using Hyperresearch. Results showed that using word dice as a learning tool improved outcomes in the measured variable. It is recommended that the incorporation of word dice is a valuable tool for improving the fluency rates of the pupils' reading ability. The effectiveness of this intervention has been unequivocally successful in enhancing reading fluency.

Keywords— reading, fluency, word

I. INTRODUCTION

Reading difficulties are among the most significant things being addressed in education departments worldwide (Mphahlele & Nel, 2018). Reading is one of the best ways to learn because it facilitates knowledge acquisition at all educational levels (Hijazi, 2018). With this, the researchers aim to create an intervention on the existing problem of reading fluency through word dice.

According to a cognitive neuropsychological perspective, learning to read is a process that starts with the ability to recognize words, gets better as fluency grows, and ends with the ability to grasp what is written (Meggiato et al., 2021). Reading accuracy is linked to one's capacity for accurate word recognition or the ability to decode text using the grapheme-to-phoneme conversion accurately (Basso et al., 2018). Reading is a meaning-making process that occurs in a regular setting and includes applying prior knowledge following an appropriate method and purpose as a result of effective communication between an author and a reader (Ceyhan & Yldz, 2021). The ability to read is the key to knowledge; it allows us to grasp our environment and ourselves. Without the ability to read, life may be practically challenging. Reading fluency deficits have been identified as a problem for children with reading disabilities (O'Connor, 2018). A student must be able to read a certain number of words per minute in order to

interpret and analyze a text. However, it needs to be clarified how to improve a student's reading fluency the most effectively (Kloos et al., 2019).

Oral reading is where the roots of reading fluency are found. Oral reading was important in and out of the classroom (Rasinski et al., 2021). Oral reading fluency is reading quickly, accurately, and with good prosody while ignoring basic reading abilities (Padeliadu & Giazitzidou, 2018). Fluent reading is frequently associated with three characteristics: the ability to read texts accurately, at the appropriate rate, and with prosody (Hudson et al., 2020). Lack of fluency demotivates readers and causes them to read less and less, trapping them in a cycle of few readings. Reading practice is required to develop fluency, which will be stagnant and may jeopardize the student's ability to learn academic content, which also depends on good reading (Martins & Capellini, 2019). Readers who struggle with fluency are still learning to read; their decoding is slow and is not yet fluent. Such readers often pass through punctuation and read repetitively or without expression (Meggiato et al., 2021). Most children learn to read and write successfully, while some struggle (Esmaeeli et al., 2019).

Literacy skills provide the foundation for children's future success in educational, professional, and everyday settings. The preschool and early elementary

school years are essential for developing reading skills. Children with reading disabilities quickly become embarrassed as they struggle with a skill their classmates easily master. Some students are more likely than others to develop reading difficulties. It is critical to be aware of these tendencies so that students can be monitored and any problems identified early (Kumara, 2019). Children who have persistent reading difficulties face school-related stresses that can result in negative socio-emotional development, such as externalizing (e.g., frustration/anger) and internalizing (e.g., shame/anxiety) patterns (Sukovieff & Kruk, 2021).

Its impairment can result in life-long disability, affecting the quality of life in various ways. On the other hand, reading is a complex and multifaceted process that some people find difficult to master (Jamshidifarsani et al., 2019).

One of the primary goals of elementary school education is to teach children to read. Reading fluency has become important, with more research than any other reading topic. Reading fluency is a good predictor of early reading development and overall reading competence (Memisevic, 2019). Fluency instruction is often taught in the primary grades because literacy teaching aims to build kids' basic word reading abilities and automatic word recognition to promote reading comprehension (Steinle et al., 2022). Tindal and Rasinski emphasize the importance of oral reading fluency as a prerequisite for comprehension. They believe that fluency, as a talent, contributes to comprehension (the ultimate purpose of reading). Students who struggle with reading fluency early in their academic careers are more likely to struggle later in life. As a result, developing and strengthening literacy skills during the early stages of learning is critical (Aldhanhani & Abu-Ayyash, 2020).

Reading fluency has been conceptualized in several ways. These include reading individual words quickly and correctly, reading connected text, and reading with expression. Lower-level reading that is efficient and integrated is required for fluent reading. Phonemic awareness and knowledge of letter-sound correspondences are two processes that, with practice, lead to automatic word recognition (Paige, 2020). Reading fluency is the process of correctly recoding and decoding what has been read, and its quality is determined by factors such as reading accuracy and phonological, orthographic, and morphological abilities (Voß & Blumenthal, 2020). Fluency, along with phonics, phonological awareness, vocabulary, and

comprehension, is a necessary skill for reading success. These reading abilities are interconnected so that fluency is essential—a critical component in developing later comprehension (Didion, 2019).

Reading is an important skill in people's lives because education necessitates the development of this skill and its application as a tool for life-long learning. Reading fluency is essential in this process. The National Reading Panel ranked reading fluency as the most important aspect of being a successful reader. Similarly, many researchers believe fluency is one of the most important aspects of successful reading (Teksan & Yilmaz-Alkan, 2020). The National Reading Panel also identified reading fluency as important in developing reading comprehension skills. Reading comprehension is difficult depending on various cognitive and linguistic processes (Nation, 2019). To be successful in school and life, students must be fluent readers. Despite this, many students struggle with reading because they are unable to decode. Many students speak a language other than the one used in the classroom or at home. It is estimated that roughly half of the world's children learn to read in a language other than their native tongue and are taught in their second language. Lower reading fluency students are more likely to struggle with comprehension (Powell & Gadke, 2018).

Reading fluency is a skill all good readers should strive to read any text more easily. Reading fluency enables students to read and comprehend a text. Reading fluency is advantageous because, once achieved, students use few cognitive resources to decode and can instead concentrate on making meaning and understanding the text (Zavala & Cuevas, 2019). Many reading researchers have accepted reading fluency skills as prerequisites for reading comprehension. Reading fluency is one of many variables needed for comprehension and a bridge for comprehension (Uysal & Bilge, 2018). A high level of oral reading fluency is an important indicator of reading ability (Fenty & Brydon, 2020). In addition to speed and accuracy, reading fluency is influenced by linguistic components such as vocabulary morphology and syntactic processes (Shechter, 2018). Fluency is the ability to "read orally with speed, accuracy, and proper expression." (Serry et al., 2022). It was discovered that teachers' self-efficacy is positively related to their beliefs and confidence in bringing about learner change when working with struggling students. Identifying and supporting students with reading difficulties should improve their reading, writing, spelling, overall academic achievement, and ability to participate in and

contribute to society as adults. This study's main objective is to determine how well word dice improve reading fluency in elementary school pupils at Misamis University in 2022–2023. Pupils' reading fluency can be increased by using this technique throughout the discussion.

Research Questions:

In this study, the researchers used word dice to improve the reading fluency of Grade 5 pupils at Misamis University during the school year 2022-2033.

This study specifically sought answer the following questions:

What was the pupils' performance before using the word dice?

What was the pupils' performance after using the word dice?

Is there any significant difference between pupils' performance after using the word dice in improving reading fluency?

What are the improvements seen after the conduct of word dice in class?

Hypothesis:

H01. There is no statistically significant difference between the pre-test and post-test scores of pupils' after using the word dice to improve reading fluency.

METHODS

Research Design

A classroom-based action research approach was employed in this study. The design aimed to assess the efficacy of employing word dice and its impact on students' reading fluency throughout a two- to three-week instruction in Grade 5. This strategy allows instructors to study their practice and determine what will and will not work for their students in their classrooms.

Classroom-based action research—with its cyclical nature of the systematic examination of teaching and learning, followed by data-driven changes based on the finding's investigations—provides a viable and valuable professional development alternative. Following the development of improvement goals, the action research process may modify a teacher's professional development, providing a significantly more relevant approach to professional development (Mertler, 2013).

Research Setting

The researchers conducted the study in the Grade School Department of a specific institution in Ozamiz City. The institution is a private, non-sectarian institution known for offering quality education accredited by the PACUCOA. The Grade School Department provided a blended learning environment for grades 4-6 and a whole face-to-face approach for grades 1-3.

Research Participants

The participants of the study were the Grade 5 pupils in the Grade School Department. The participants were selected using the purposive sampling. The following criteria were used to choose the participants: 1.) Pupils enrolled in the Grade School Department at Misamis University as grade 5 pupils for the academic year 2022-2023; 2.) Pupils who were observed to have poor reading fluency; 3.) Pupils who gave their full consent to serve as respondents of the study. The researcher checked that all these conditions were met before conducting the survey.

Research Instruments

The research tool for this study included:

1. Passage. This tool was used to assess the pupils' reading fluency.
2. Lesson Plan. It was developed containing the passage for the pupils to read. Before implementation, the lesson plan underwent a thorough checking by the cooperating teacher and subsequent revisions by the researchers. It was conducted at Misamis University, specifically in Grade 5, throughout March 2023.
3. Word Dice. It offered a variety of words related to the topic under discussion. The pupils learned the meanings of unfamiliar words in the box using the word dice. This intervention was implemented in the second semester of the school year 2022-2023.
4. Rubric. A scoring rubric was employed to assess the pupils' performance in reading.
5. Interview Questions. Non-structured interview questions were employed to interview pupils and teachers about their views on using word dice—the open-ended questions aimed to gather their thoughts and feelings about this intervention. To document the interview sessions, the researchers used an audio recorder or took down notes.

Data Gathering Procedure

A. Pre-Implementation Phase

Permission from the principal of the Basic Education Program at Misamis University was sought to conduct their study using a formal letter addressed to her. Furthermore, the researchers sought approval from the cooperating teachers. Informed consent was personally sent to the participants.

B. Implementation Phase

A variety of words were presented, and facilitated discussions around those words. During the discussions, the dice were utilized. Subsequently, the intervention to improve reading fluency was implemented.

C. Post-Implementation Phase

After a month of implementing the intervention, a passage was given to the pupils. A rubric was applied to assess and determine whether there was an improvement in the pupils' reading fluency.

Ethical Considerations

Formal interviews with the participants were conducted after obtaining their signed informed consent. The researcher strictly adhered to the Republic Act No. 10173 guidelines, the "Data Privacy Act of 2012." This study placed great importance on addressing issues such as plagiarism and fraud, and discussions revolved around the necessary steps to prevent them. Ethical considerations were carefully observed throughout the entire data-gathering process. The confidentiality of the participants' information and the respondents' anonymity were both respected and maintained.

Data Analysis

The study utilized the following statistical tools:

Mean and Standard Deviation: These tools were employed to describe the performance of pupils' reading fluency. The mean indicated the average score, while the standard deviation showed the variation in performance.

T-test: When utilizing the intervention, the t-test was used to investigate pupils' reading fluency differences. This statistical tool helped determine if there was a

significant improvement in reading fluency due to the intervention.

In addition, the researchers utilized the HyperRESEARCH software to interpret qualitative analysis from the observation and interview data. HyperRESEARCH is a computer program designed to assist researchers with the qualitative analysis of various types of text, video, audio, and picture data. It allows researchers to code and analyze data efficiently (Gibbs, 2018).

RESULTS AND DISCUSSION

By incorporating word dice in teaching all subjects to Grade 5 learners, it successfully enhanced their classroom engagement, sparked their interest, and boosted their motivation. Through careful analysis of the learners' pre-test and post-test results, the researchers provided valuable feedback to teachers, enabling them to improve their teaching methods effectively.

Table I shows the pupils' performance before using word dice. Given the data presented, it is evident that there is room for improvement concerning reading fluency. A significant portion of the examined performances fell below the expected level. Fluent reading is the ability to read texts with correctness, proper pace, and pronunciation, with the ultimate goal of obtaining meaning from reading (Zimmerman et al., 2021). The reading abilities were able to show possibility and opportunity for improvement occasionally. Using word dice as a learning aid could help manage differences in performance levels and improve overall reading fluency. An intervention will be used to improve the reading fluency of the learners who are poor readers.

Word dice can provide an interactive and interesting way to improve reading fluency. Students can participate in repeated practice and exposure to diverse words by rolling the dice and reading the word that emerges, encouraging both accuracy and speed in reading. This intervention promotes active participation and can make learning more fun for pupils, resulting in enhanced motivation and retention of reading skills.

Table I: Performance of the Pupils before Using Word Dice

Performance	Frequency	Percentage
Outstanding (O)	0	
Very Satisfactory (VS)	4	26.67
Satisfactory (S)	4	26.67

Fairly Satisfactory (FS)	2	13.33
Did not Meet the Expectation (DME)	5	33.33

Note: Performance Scale: 5 (Outstanding); 4 (Very Satisfactory); 3 (Satisfactory); 2 (Fairly Satisfactory); 1 (Did not Meet the Expectation)

Table II provides an in-depth evaluation of the pupils' performance after word dice engagement. The majority of the graded performances show an average level of competence. However, a particular result must be identified when the performance narrowly meets the desired standard. The findings indicate that many performances exceeded the initially expected standard, displaying high knowledge and success within the provided context and parameters. A particular instance where practices failed indicates that improvements must be made in specific areas. Reading is one of several critical factors necessary for comprehension. Reading

develops gradually over time and through practice (O'Connor, 2018). It draws attention to the room for improvement and modification to raise the overall efficacy of the results. Overall, the performance evaluation demonstrates impressive excellence, with a strong emphasis on outstanding performances. It is essential to recognize and appreciate the accomplishments reflected in the data. It is also important to investigate techniques for enhancing performance and addressing any areas that require improvement, particularly in the category of reasonably satisfactory performance.

Table II: Performance of the Pupils after Using Word Dice

Performance	Frequency	Percentage
Outstanding (O)	14	93.33
Very Satisfactory (VS)		
Satisfactory (S)		
Fairly Satisfactory (FS)	1	6.67
Did not Meet the Expectation (DME)		

Note: Performance Scale: 5 (Outstanding); 4 (Very Satisfactory); 3 (Satisfactory); 2 (Fairly Satisfactory); 1 (Did not Meet the Expectation)

Table III demonstrates significant differences between the variables before and after using the word dice. The results certainly show that the inclusion of word dice significantly improved the participants' scores. The increase in mean scores denotes a significant improvement and emphasizes the word dice's beneficial effects as a useful learning tool for improving performance. Furthermore, the statistical analysis shows the significance of a difference between the pre-test and post-test outcomes. It implies that the intervention of using word dice played a part in the observed improvement in the participants' performance. Therefore, it is not solely a coincidence. Reading

fluency is a crucial skill for children to achieve satisfactory academic performance. Several studies have related it to other reading skills, such as reading comprehension (Alvarez et al., 2020). Together with the intervention used, it helped the learners improve their fluency and gain reading comprehension.

The data suggests that using word dice had a positive and statistically significant effect on the participants' performance. The pre-test and post-test results show that using word dice as a learning tool improved outcomes in the measured variable.

Table III: Significant Difference Before and After Using Word Dice

Variables	Mean Score		Test Statistic	
	(Pretest)	(Post-test)	(t-value)	(p-value)
Before and after using word dice	19.73	28.80	-7.47	0.000

Note: Performance Scale: 5 (Outstanding); 4 (Very Satisfactory); 3 (Satisfactory); 2 (Fairly Satisfactory); 1 (Did not Meet the Expectation)

Improvement Highlights after Using Word Dice

The teacher observed other significant improvements in pupils' engagement in class, interest, and motivation.

Classroom Engagement. In order to foster active engagement in the classroom, an effective intervention is to utilize word dice. Pupils actively interact with the subject matter when they use the word dice. They were able to read the unfamiliar and challenging words contained in the paragraph that they encountered. Using the word dice helped them enhance their fluency comprehension and gain vocabulary. Through this intervention, students improved their reading fluency and understanding and broadened and enhanced their vocabulary. By fostering a lively and interactive learning environment, educators can facilitate the development of well-rounded pupils equipped with strong reading skills and a diverse range of words at their disposal.

I was not a good reader and felt uncomfortable reading in front of my classmates, but the word dice pushed me to engage in class. (P1)

I was eager to roll the dice, so I wanted to participate in the class more often. (P4)

I was interested in the significance of the words printed on the dice, so I participated in every discussion. (P8)

Pupils fully participate in the learning process and make the most of the chances presented to them in classrooms with high engagement among pupils (Gamlem et al., 2019). They have the motivation to explore new concepts and look for in-depth explanations. A high level of involvement among pupils fosters a friendly and inclusive learning atmosphere where each student feels respected and encouraged. High levels of participation by pupils also encourage a sense of ownership and accountability for learning. This active involvement benefits the academic achievement of pupils and cognitive growth.

Motivation. The use of word dice in the classroom not only increases engagement but also serves as an effective motivation for pupils, especially those who participate in reading activities.

Word dice ignite a sense of excitement and curiosity among pupils, driving them to engage in discussion and read with greater fluency. Through this intervention, pupils broaden their vocabularies and develop their reading skills.

Additionally, using word dice helps students broaden their vocabulary and improve their reading fluency. By encountering a variety of words through the rolling of dice, students are exposed to new terms and phrases. This exposure allows them to expand their vocabulary and deepen their understanding of linguistic nuances. As they read these words aloud and in context, their reading fluency naturally improves, enabling them to tackle more complex texts.

The element of chance and surprise associated with rolling the word dice further contributes to students' motivation. Each roll presents a unique combination of words, making the learning experience unpredictable and exciting. The anticipation of discovering new words or phrases encourages students to participate actively and eagerly await their turn to roll the dice. This element of surprise not only keeps students engaged but also adds an element of fun to the learning process, fostering a positive and enthusiastic classroom atmosphere. The visible improvement in their reading fluency and comprehension motivates them to continue engaging with the material and actively seek further opportunities to enhance their skills. This sense of accomplishment fuels their intrinsic motivation and reinforces their desire to participate in reading activities actively.

In summary, integrating word dice in the classroom is a powerful motivator for students, encouraging active participation in reading and discussion. Through this interactive intervention, students expand their vocabularies, improve their reading fluency, and experience a sense of achievement and progress. By leveraging the element of surprise, promoting active participation, and fostering a supportive learning environment, educators can harness the motivational benefits of word dice to inspire students to become enthusiastic readers and lifelong learners.

I am motivated to participate in the class because I want to try rolling the dice. (P7)

The word dice allowed me to improve my reading skills. (P2)

The word dice was appealing, which is why I am motivated to participate in the discussion. (P6)

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and deepen their understanding of linguistic nuances. As they read these words aloud and in context, their reading fluency naturally improves, enabling them to tackle more complex texts confidently.

The element of chance and surprise associated with rolling the word dice further contributes to students' motivation. Motivation plays a crucial role in the classroom, driving pupils to engage in learning and achieve their full potential. When pupils are motivated, they exhibit a genuine enthusiasm for acquiring knowledge. Each roll presents a unique combination of words, making the learning experience unpredictable and exciting. The anticipation of discovering new words or phrases encourages students to participate actively and eagerly await their turn to roll the dice. This element of surprise not only keeps students engaged but also adds an element of fun to the learning process, fostering a positive and enthusiastic classroom atmosphere. It was therefore suggested that teachers be encouraged to use suitable classroom management techniques to motivate pupils to learn and thus improve academic attainment (Adedigba & Sulaiman, 2020).

Interest. Using word dice in the classroom is a highly effective way to engage and motivate pupils while also improving their skills in reading and comprehension. This intervention has been shown to improve students' reading fluency. Learners are encouraged to communicate their thoughts and opinions through reading by actively participating in word dice games, which improves comprehension and fluency. The interactive nature of word dice allows pupils to become more involved and invested in their reading experience. They actively participate in selecting and rolling the dice, which adds excitement and curiosity to the activity. This increased engagement produces a pleasant learning atmosphere and encourages pupils to approach reading enthusiastically. As pupils engage with word dice, they gradually develop their reading fluency. By repeatedly encountering words and phrases, pupils become more familiar with their pronunciation, meaning, and usage. This repetition helps build their reading skills and promotes a deeper understanding of the text.

Furthermore, rolling the dice and discovering new combinations of words creates a sense of exploration, making the learning process more enjoyable and stimulating. One significant benefit of using word dice is that it boosts pupils' confidence in their reading skills. As they actively participate in the activity and witness their progress, pupils gain a sense of achievement and

self-assurance. This increased confidence translates into improved reading fluency, as students are more willing to take risks and engage with challenging texts. The use of word dice empowers pupils to overcome any hesitations they may have had about reading aloud or tackling complex passages.

In conclusion, incorporating word dice into classroom activities effectively enhances reading skills and comprehension. By actively involving pupils in the learning process, this method cultivates a deeper connection with the material and fosters a love for reading. Word dice's interactive and exploratory nature promotes reading fluency, confidence, and overall academic growth among pupils.

When there is a story, passage, or paragraph to read, I feel nervous and shy because I do not know how to read unfamiliar words. However, using the word dice attracts my interest and attention to participate, which helps me learn how to read the words fluently. (P3)

I appreciated the entire activity using the word dice because it was less about rolling the dice and more about learning from them. (P5)

Maám, I am delighted that the word dice made me actively engage since the dice are so attractive. The appearance of the dice stimulates my interest in participating in the discussion and learning the words written on it. (P10)

The use of a word dice in class has proven to be an excellent method of stimulating active learner engagement. The pupils were excited as they waited their time to roll the dice. The pupils' obvious excitement spoke to the activity's compelling qualities. This newfound excitement aroused my interest in the language engraved on the dice. As a result, their curiosity and motivation were stimulated, pushing them to look deeper into the words provided. When pupils access information, they must use their reading skills. Reading is a lifelong ability that learners can apply in school and throughout their lives (Yee & Zainuddin, 2018). Using the word dice promoted an interactive learning experience and functioned as a catalyst for capturing pupils' attention and creating real interest in the subject matter.

Hypothesis

The results revealed a substantial difference between learners' pre-test and post-test scores after utilizing word dice in the classroom.

CONCLUSION AND RECOMMENDATIONS

After conducting a thorough analysis of the data, the researchers have reached a compelling conclusion regarding reading fluency and the effectiveness of using word dice. The findings unequivocally demonstrate that the utilization of word dice is an exceptionally effective approach for enhancing both the accuracy of reading and the level of engagement within the classroom. Moreover, the researchers have discovered a noteworthy aspect: word dice significantly boost students' motivation to improve their fluency in a previously unprecedented manner.

A key revelation from the study is that students were able to tangibly witness their growth in reading fluency, irrespective of whether it was a substantial or modest advancement. This visual representation of progress profoundly impacted the students, further fueling their dedication and enthusiasm toward achieving fluency goals.

Findings

1. The pupils demonstrated performance below the desired standards before the use of word dice.
2. The pupils exhibited exceptional improvement after the integration of word dice.
3. There was a significant difference between the pupils' reading fluency before and after the use of word dice.
4. Other improvements were observed after the use of word dice in class.

CONCLUSION

After conducting a thorough analysis of the data, the researchers reached a compelling conclusion regarding reading fluency and the effectiveness of using word dice. The findings unequivocally demonstrate that the utilization of word dice is an effective approach for enhancing both the accuracy of reading and the level of engagement within the classroom.

Moreover, the researchers discovered a noteworthy aspect: word dice significantly boost students' motivation to improve their fluency in a previously unprecedented manner.

A key revelation from the study is that students can tangibly witness their growth in reading fluency, irrespective of whether it is a substantial or modest advancement. This visual representation of progress profoundly impacts the students, further fueling their dedication and enthusiasm toward achieving fluency goals.

RECOMMENDATION

Based on the findings of the intervention process, it is highly recommended the incorporation of word dice as a valuable tool for improving the fluency rates of the pupils' reading ability. The effectiveness of this intervention has been unequivocally successful in enhancing reading fluency. This research has unveiled valuable insights that can serve as a foundation for future investigations.

The study not only identified significant challenges in the realm of reading fluency but also provided a practical strategy to address these issues. The data collected throughout the research journey consistently supports using word dice to boost reading fluency for learners of all backgrounds.

In conclusion, this research has not only shed light on the existing problems associated with reading fluency but has also offered a compelling solution by implementing word dice. The evidence collected during the study underscores the efficacy of this approach and establishes it as a powerful tool for increasing reading fluency among students.

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