

The Effectiveness Of Digital Phonic Literacy In Improving The Reading Basics Of Grade II Students Of Gugus 7 Seririt

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Abstract

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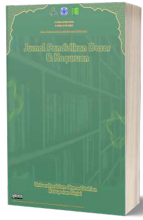
This study aims to determine the effectiveness of using digital phonics literacy media in improving the basic reading concept skills of second-grade students in Cluster 7, Seririt District. The research is motivated by the low initial reading ability of elementary school students, which is often caused by the limited availability of interactive and engaging learning media. This study employs a quantitative approach with a quasi-experimental design, utilizing a one-group pretest-posttest design. The research subjects were 26 students selected using a total sampling technique. Data were collected through a basic reading concept ability test given before and after the implementation of digital phonics literacy media. Data analysis was conducted using descriptive and inferential statistics, including normality tests, homogeneity tests, and paired sample t-tests, with the assistance of SPSS version 29.0. The study's results showed an increase in students' reading ability, as indicated by a rise in the average score from 31.92 in the pretest to 72.81 in the posttest. The results of the hypothesis test showed a significance value <0.05 , which indicates a significant difference between students' reading ability before and after treatment. Thus, it can be concluded that digital phonics literacy media are effective in improving the basic concepts of reading skills among elementary school students.

Keywords: Digital Phonics Literacy, Basic Reading Skills, Elementary School

1. Introduction

Reading ability is a basic skill that serves as the main foundation for elementary school students' success in participating in the entire learning process (Sudaryati et al., 2023:3). Early reading is not only related to the ability to recognize letters but also involves understanding the relationship between letter symbols and their sounds (phonemes), word recognition, and the ability to read simple sentences meaningfully (Fahmiyah et al., 2025:309). Poorly developed early reading literacy will impact students' low academic abilities at subsequent levels. Research shows that lower-grade students who have not mastered phonics skills adequately tend to have difficulty understanding texts and fall behind in cross-subject learning (Agustina et al., 2025:3084; Suciani & Dafit, 2025:246).

Numerous empirical studies indicate that a systematic mastery of phonics is crucial for enhancing the accuracy and fluency of reading among elementary school students (Cendana et al., 2025:629; Hildayanti et al., 2023:72). The phonics approach enables students to gradually and methodically grasp the connection between letters and sounds, thereby aiding in their ability to decode words (Ali & Dama, 2026:112). Nonetheless, reading instruction in elementary schools still predominantly relies on traditional methods and utilizes a limited variety of print materials, resulting in a monotonous learning experience that fails to engage students effectively. This situation adversely affects student motivation and their active participation in the learning process.



Advancements in educational technology have created possibilities for more interactive and contextual digital learning tools. Research indicates that digital media that integrates visual, auditory, and interactive components can enhance students' focus, motivation, and involvement in their educational experiences (Aruan & Ginting 2025:121). Additionally, other studies demonstrate that pedagogically crafted digital media can offer a more impactful learning experience compared to traditional teaching methods, especially in early reading instruction (Diniyati et al., 2025:101).

One type of innovative learning media that addresses these needs is digital phonics literacy media. This media combines phonics learning principles with digital technology through the use of audio-visual materials, interactive activities, and immediate feedback. Digital phonics literacy media enables students to repeatedly practice recognizing letter and word sounds more engagingly and enjoyably (Rohma, 2024:58–67). Previous studies have indicated that employing digital phonics media can greatly enhance students' foundational reading skills, as it offers consistent phonemic reinforcement and caters to both visual and auditory learning preferences (Suciani & Dafit, 2025:246).

Despite efforts, observations in elementary schools reveal that the fundamental reading conceptual skills of early-grade students remain quite low. The lack of innovative learning resources and the ineffective incorporation of technology in reading instruction are significant factors contributing to this issue. This scenario calls for learning solutions that not only effectively enhance reading abilities but also align with student characteristics and meet the requirements of 21st-century education. As noted by Safitri et al., (2025:1), developing digital literacy is an essential skill that should be fostered at an early stage to help students adjust to technology-driven learning environments.

Different alternative approaches have been suggested to tackle students' inadequate early reading abilities, varying from enhancing traditional phonics techniques to using digital learning tools. Nonetheless, digital phonics literacy tools are regarded as a more holistic solution since they not only bolster foundational reading skills but also boost students' motivation for learning and their digital literacy. This type of media promotes interactive learning, offers instant feedback, and supports a student-centered learning environment. Different alternative approaches have been suggested to tackle the issue of students' poor early reading abilities, including enhancing traditional phonics techniques and using digital learning tools. Nevertheless, digital phonics literacy tools are viewed as a more all-encompassing solution since they not only bolster technical reading skills but also boost students' motivation and digital literacy. This type of media enables interactive learning, offers prompt feedback, and encourages student-centered education.

These factors led this study to select digital phonics literacy materials as a teaching tool to enhance elementary school pupils' foundational reading comprehension. The purpose of this study was to evaluate how well digital phonics literacy materials enhanced the fundamental reading concepts of second-graders in Cluster 7, Seririt District. The purpose of this study was to find out the differences in students' reading skills before and after using digital phonics literacy media. The results are expected to offer insights that can enrich early reading education using digital phonics. They should also provide useful information for teachers and schools in adopting effective and innovative learning media that fit with current trends in educational technology.

2. Method

This study employs a quasi-experimental methodology and is quantitative in nature. The study was carried out in Cluster 7, Seririt District, during the even semester of the 2025–2026 school year. The purpose of this study was to use digital phonics literacy materials to enhance the fundamental reading conceptual skills of elementary school pupils. Twenty-six second-graders from Cluster 7, Seririt District, served as the subjects. All members of the population were included as samples, and because the population was relatively small, total sampling was employed as the subject selection method.



2.1 Research Procedure

One-Group Pretest–Posttest, an experimental design with a single group and no control group, was used in this study (Soesana et al., 2023:100). Students were given a pretest to ascertain their starting reading proficiency before the research process started. Prior to students receiving treatment, which included instruction using digital phonics literacy materials, the pretest was given. Following treatment, students were taught to read using digital phonics literacy materials, which included interactive modules, phonics exercises, and audio-visual resources. The instruction followed a predetermined learning flow and concentrated on phoneme pronunciation, letter mastery, and basic word comprehension. Students were given a posttest to gauge their reading skills following the treatment, following the completion of the entire learning series. Quantitative information from reading test results made up the research data. A reading test designed to measure early reading skills, such as letter recognition, phoneme pronunciation, and basic word comprehension, served as the research tool. Direct reading practice and written assessments were among the methods used to collect data.

2.2 Data Analysis Techniques

To ascertain the impact of digital phonics literacy materials on students' reading abilities, the collected data was examined. The following steps were taken in the data analysis process:

- a. Descriptive analysis is used to ascertain the mean, minimum, maximum, and distribution of data for both pretest and posttest results.
- b. To make sure the data satisfied the requirements of parametric statistical analysis, prerequisite analysis tests include homogeneity of variance tests and normality tests using the Kolmogorov-Smirnov and Shapiro-Wilk tests.
- c. A paired sample t-test is used for hypothesis testing in order to identify any significant differences between the reading abilities of the students before and after the treatment. SPSS version 29.0 was used for the entire data analysis procedure.

3. Results and Discussion

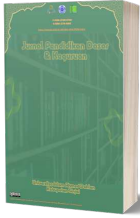
Pretest and posttest data analysis were used to determine the study's findings regarding the efficiency of digital phonics literacy materials in enhancing the fundamental reading concepts of second-grade students in Cluster 7, Seririt District. To give a summary of how students' reading abilities improved before and after the use of digital phonics literacy materials, the research data were examined both descriptively and inferentially.

3.1 Results of Descriptive Analysis of Basic Reading Concept Skills

Table 1 displays the findings of the descriptive statistical analysis of students' fundamental reading concepts both before and after the intervention. According to the data, students' reading abilities improved after utilizing digital phonics literacy resources.

Table 1 Descriptive Analysis of Pretest and Posttest Basic Reading Concept Skills

		<i>Statistics</i>	
		<i>PRE TEST</i>	<i>POST TEST</i>
N	Valid	26	26
	Missing	0	0
<i>Mean</i>		31.9231	72.8077
<i>Std. Error of Mean</i>		2.32175	1.81618
<i>Median</i>		32.5000	70.0000
<i>Mode</i>		20.00	65.00
<i>Std. Deviation</i>		11.83866	9.26075
<i>Variance</i>		140.154	85.762
<i>Range</i>		45.00	30.00
<i>Minimum</i>		15.00	60.00
<i>Maximum</i>		60.00	90.00



Sum 830.00 1893.00

(Source: SPSS Data Processing, 2025)

According to Table 1, students' reading proficiency improved from a pretest score of 31.92 to a posttest score of 72.81. This increase suggests that after using digital phonics literacy media to learn, the majority of students saw improvements in their reading skills. Additionally, the median and mode values rose, suggesting that the improvement was fairly evenly distributed across all study subjects rather than just affecting a small number of students. Following treatment, there was less variation in the students' reading abilities, as evidenced by the standard deviation value dropping from 11.84 in the pretest to 9.26 in the posttest. This suggests that digital phonics literacy materials can improve the development of students who struggle with reading, thus closing the ability gap between them. The pretest and posttest data are displayed as histograms in Figures 1 and 2 to help visualize the distribution of students' reading ability scores.

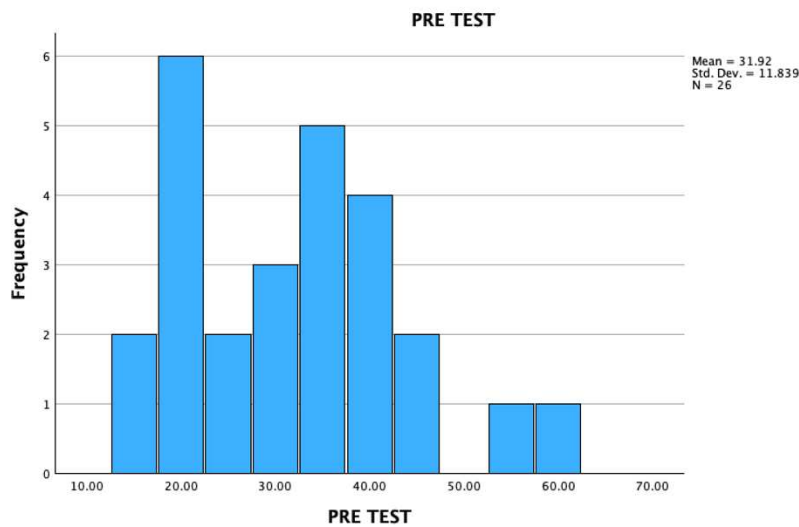


Figure 1 Histogram of Descriptive Data of Pretest Basic Reading Concept Ability

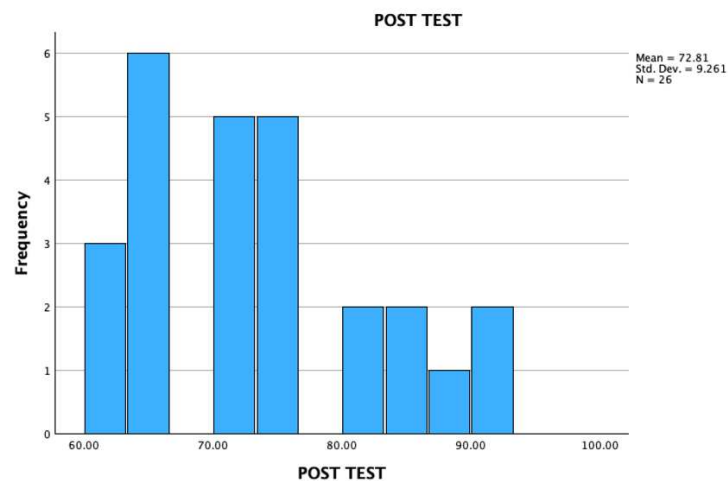


Figure 2 Histogram of Descriptive Data Posttest of Basic Reading Concept Ability

The majority of students fall into the low to moderate reading ability category, according to the pretest histogram. After using digital phonics literacy materials, students' reading skills



improved, as evidenced by the posttest histogram, which displays a shift in the distribution of scores to the higher categories.

3.2 Results of the Prerequisite Analysis Test

The research data underwent prerequisite tests, such as normality and homogeneity tests, prior to the hypothesis testing. Table 2 displays the findings of the Kolmogorov-Smirnov test for normalcy.

Table 2 Results of the Normality Test for Pretest and Posttest Data

Test of Normality				
Class		Kologorov-Smirnov ^a		
		Statistic	df	Sig.
Results	Pretest	0,151	26	0,133
	Posttest	0,158	26	0,096

(Source: SPSS Data Processing, 2025)

The pretest and posttest significance values were both higher than 0.05, according to the normality test results, which demonstrated that the data were normally distributed. Students' reading skills before and after the treatment were proportionately distributed and satisfied the criteria for parametric statistical analysis, according to the data's normal distribution.

Levene's test was then used to perform a homogeneity of variance test, and the results are shown in Table 3.

Table 1 Results of the Homogeneity of Variance Test

Dasar Pengujian	Sig.
Based on Mean	0,231

(Source: SPSS Data Processing, 2025)

If the homogeneity test has a significance value greater than 0.05, it means that the variance of the pretest and posttest data is the same. This means that the data have the same amount of variance and can be used in hypothesis testing with parametric statistical tests.

3.3 Hypothesis Test Results and Discussion

A paired sample t-test was used to test the hypothesis and find out if there were any differences in students' reading skills before and after the use of digital phonics literacy media. The results are presented in Table 4.

Table 2 Paired Sample t-Test Results for Basic Reading Concept Ability

t	df	Sig. (2-tailed)
18,373	25	< 0,001

(Source: SPSS Data Processing, 2025)

With a significance level of less than 0.001, the computed t-value for the Paired Sample t-Test was 18.373. Students' reading skills before and after using digital phonics literacy materials differ significantly, as indicated by this value, which is less than the 0.05 level of significance. Thus, digital phonics literacy materials are useful for enhancing second-grade pupils' foundational conceptual reading abilities.

These results suggest that through interactive and repeated material presentation, digital phonics literacy media can aid students in developing a more systematic understanding of the correspondence between letters and sounds. Digital media that combines visual and aural components offers a more powerful learning stimulus, facilitating students' recognition of words, phonemes, and simple sentences. These findings are consistent with earlier studies that indicate digital phonics-based learning materials can greatly enhance students' early reading abilities by promoting decoding and reading fluency (Ali & Dama, 2026:112; Putri et al., 2025:609).

Reading achievement gains were more evenly distributed across most students, as evidenced by the rising median and mode scores, declining standard deviation, and rising average scores. This suggests that digital phonics literacy materials are beneficial for students



with low reading skills as well as those with moderate or high reading proficiency. This result supports the idea that phonics instruction combined with consistent, organized practice can help elementary school pupils become more proficient in word recognition and decoding (Putri et al., 2025:607).

The posttest results show that learning with digital phonics literacy media can result in a more effective learning process, as evidenced by the shift in score distribution to a higher category. Students can more easily comprehend the sounds of letters, words, and simple sentences thanks to the richer learning stimuli that digital media, which blends visual and aural elements, offers (Pagarra et al., 2022:16). Compared to traditional, one-way learning, the combination of text, images, and sound can enhance learning comprehension, according to multimedia learning theory (Rochaendi et al., 2024:178).

The use of digital phonics literacy materials not only enhances technical reading abilities but also raises student motivation and engagement in the classroom. Students are encouraged to be more active and enthusiastic when learning to read through a variety of learning activities that include animation, sound, and interactive exercises. Enhancing student learning outcomes, especially in early reading instruction in elementary school, requires high levels of learning motivation (Fabella, 2023:4).

Digital phonics literacy materials promote a student-centered learning strategy from a pedagogical standpoint. Students can actively engage in the learning process, learn at their own pace, and get immediate feedback thanks to this media. It has been demonstrated that this method of instruction, which treats students as active participants, consistently enhances their reading comprehension and conceptual understanding (Navitri et al., 2025:101). Additionally, early exposure to digital media fosters the growth of 21st-century literacy, or the capacity to use technology to efficiently acquire and comprehend information (Cahya et al., 2023:5).

4. Conclusion

The use of digital phonics literacy materials is beneficial in enhancing the fundamental conceptual reading abilities of second-grade students in Cluster 7, Seririt District, according to the research findings and discussion. The majority of students' early reading skills can be significantly improved by using this media to help them comprehend the correspondence between letters and sounds in a more methodical way.

Through dynamic and captivating learning presentations, digital phonics literacy materials not only help students become more proficient readers but also boost their motivation and engagement. As a result, this media can be utilized as a creative substitute for early reading instruction in elementary schools that meets the requirements of technology-based learning.

In order to support the development of students' literacy skills, it is advised that educators incorporate digital phonics literacy materials into their early reading teaching strategies. In order to get more thorough results, it is advised that future research develop research designs that incorporate control groups, use larger sample sizes, or combine digital phonics literacy media with other learning models.

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