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ENHANCING ENGLISH READING AND WRITING SKILLS IN ELEMENTARY STUDENTS: A DIGITAL LEARNING APPROACH IN PURWOREJO REGENCY

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Abstract: This study aims to develop a mobile learning application model to enhance reading and writing skills among elementary school students in Purworejo Regency. English plays a significant role as an international language in technology, education, and business. An initial trial in October 2023 at SD Muhammadiyah Purwodadi revealed students' difficulties with reading and writing ability and the need for interactive, innovative, and engaging learning media. The researchers propose using a mobile learning application model tailored to students' proficiency levels. The study aims to provide insights to teachers, educators, and policymakers on utilizing digital applications to improve elementary students' reading and writing ability and encourage the development of teaching methods, curriculum adjustments, and technology integration to create a better learning environment. This experimental study uses a quantitative methods. The findings show that the mobile learning application model can enhance student engagement and improve reading and writing skills, with a significant value of 0.000 (lower than 0.05). The average score of the experimental class was 88.08, compared to 63.63 for the control class, demonstrating the effectiveness of the mobile learning application in improving English reading and writing skills among elementary school students in Purworejo Regency.
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Key words: digital, mobile learning application, reading, writing

INTRODUCTION

English is widely recognised as the global language that facilitates communication across national and international contexts, influencing numerous domains such as technology, education, and business (Puspitorini, 2016). In Indonesia, the increasing presence of foreign corporations has further solidified the importance of English, making it a critical skill in both educational and professional fields. As such, proficiency in English, particularly in reading and writing, is essential for students' academic success and future career opportunities.

Among the four fundamental language skills—listening, speaking, reading, and writing—reading is often considered the cornerstone of language learning. According to Mesa & Hermayanti (2021), reading is not only vital for academic achievement but also for overall success in society, as it provides individuals with the ability to access and comprehend a wide range of information. Mastery of reading skills is therefore a primary objective in English education, especially at the elementary level, where foundational skills are developed.

Various strategies can be employed to enhance reading abilities, including extensive reading, vocabulary building, and regular practice (Walburg, 2021). However, the effectiveness of these strategies is closely tied to the learning environment. Anggia & Ginola

(2016) emphasise the importance of selecting appropriate teaching materials that resonate with students, as this can significantly influence their motivation and engagement. Teachers must deliver content in a manner that is both accessible and stimulating, with mobile learning applications offering a promising avenue for enhancing students' reading experiences in English as a Foreign Language (EFL) classrooms.

Writing, another critical component of English language learning, involves the articulation of thoughts, emotions, and aspirations in written form. As Putri & Aminatun (2021) point out, writing is a powerful tool for students to clarify and communicate their ideas. However, in the Indonesian context, students often encounter significant challenges in developing their writing skills. Research has highlighted persistent difficulties in areas such as grammar (Ariyanti & Fitriana, 2017; Astrini et al., 2020; Emilia et al., 2018; Tambunan et al., 2022), vocabulary (Astrini et al., 2020; Elfa, 2020; Mahmudah et al., 2017), and motivation, which collectively impede students' ability to express themselves effectively in written English (Astrini et al., 2020). These challenges are further exacerbated by the limited focus on writing instruction in primary schools, as noted by Wen & Walters (2022).

In light of these challenges, the integration of technology in education has become increasingly important. The widespread use of mobile devices in modern society presents new opportunities for educators to enhance their teaching methods and address the diverse needs of students. Mobile learning, defined by Hidayat & Utomo (2014) as a service that delivers educational content electronically to learners, offers the flexibility to access information anytime and anywhere, making it an ideal tool for supporting language learning.

Despite the growing adoption of digital tools in education, much of the existing research has focused on older students (Hanyfatunia, 2022; Mesa & Hermayanti, 2021) and on different skills such as listening (Afriyani, 2022), speaking (Khashan & Abuseileek, 2023), or vocabulary (Hamdani & Puspitorini, 2021). However, there is a noticeable gap in studies that quantitatively assess the impact of digital learning tools on younger learners, particularly in the areas of reading and writing at the elementary level. This research aims to fill this gap by investigating the effectiveness of a mobile learning application specifically designed to enhance the reading and writing skills of fifth-grade students in elementary school in Purworejo.

In October 2023, a preliminary study was conducted in SD Muhammadiyah Purwodadi in Purworejo Regency, Central Java. The study aimed to explore the potential of a mobile app to enhance the reading and writing skills of fifth-grade students. The results indicated that traditional book-based instruction often failed to maintain students' interest, particularly when dealing with lengthy reading passages. This lack of engagement was reflected in the students' test performance, where none of the participants achieved a perfect score on a reading comprehension test about hobbies. Interviews with students revealed that the unengaging nature of the content likely contributed to their lack of enthusiasm and difficulty with comprehension.

To address these issues, this research will utilise the LearnEnglish Kids: Playtime app, a mobile learning tool designed to make reading more engaging for young learners. The study will focus on quantitatively measuring the app's impact on improving the reading and writing skills of fifth-grade students. By collecting and analysing data on students' performance before and after the intervention, this research aims to provide concrete evidence of the app's effectiveness.

The primary objective of this research is to generate quantitative data that can inform educators, administrators, and policymakers about the potential benefits of mobile learning

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applications in enhancing the reading and writing abilities of fifth-grade students. The findings are expected to contribute to the development of more effective teaching practices, curriculum design, and technology integration strategies that cater to the needs of young learners. Ultimately, this study seeks to create a more engaging and supportive learning environment that fosters students' language development and prepares them for future academic and professional success.

The novelty of this study lies in its focus on elementary students within the Indonesian educational context, the integration of mobile learning applications by using the LearnEnglishKids application to enhance reading and writing skills, and its comprehensive quantitative approach to evaluating the effectiveness of this educational intervention.

Given the aforementioned issues, this study poses the following question: Can the use of mobile learning apps enhance the reading and writing skills of elementary school students in Purworejo district? This study aims to fill a critical gap in the existing literature and provide valuable insights into the role of mobile learning in elementary education, producing an alternative hypothesis: there is a significant enhancement of fifth grade students' reading ability in Purworejo Regency through mobile learning applications.

RESEARCH METHOD

This study employed a quantitative method. The instrument used to collect the data was a reading and writing test. In the pre-test, there were 30 questions, consisting of 17 reading tests and 13 writing tests. In the post-test, there were 30 questions, consisting of 16 reading tests and 14 writing tests. The pre-test was given in the first meeting, then the students were given treatment twice, and the students conducted the post-test in the last meeting.

The research was conducted at five elementary schools in Purworejo Regency, involving a sample of 80 fifth-grade students divided into experimental (40 students) and control (40 students) classes to measure the enhancement of students' reading ability through mobile learning applications compared to conventional ones. Quantitative data were collected through pre- and post-tests administered to the students to evaluate their reading and writing abilities after using the mobile learning application.

In the experimental class, the mobile learning application was implemented through a digital platform, promoting collaborative learning. The researcher set objectives and facilitated student interaction, utilising communication tools such as discussion forums to support group tasks. On the other hand, the control class employed conventional methods to cover the same content. The post-test assessment evaluated the students' English reading and writing skills after being taught using a mobile learning application. The collected data underwent descriptive and inferential statistical analyses using SPSS, which included descriptive statistics for student reading and writing ability. A test of hypotheses was carried out to investigate the influence of mobile learning applications on students' achievement.

Data collection techniques include: 1) primary data, namely original data from the pre-test and post-test scores of the students, which provided direct information on their reading enhancement. 2) Secondary data and additional data were obtained from relevant literature and resources related to mobile learning applications and their impact on elementary education.

Data analysis was conducted in two steps: 1) Desciption of the data: the collected data were organised and described to provide a clear overview of the students' reading and writing

abilities before and after using the mobile learning application. 2) Data analysis, The pre-test and post-test data were analysed quantitatively to determine the enhancement in reading ability. This analysis was performed using statistical methods using SPSS to calculate the mean, standard deviation, and significance of the differences between pre-test and post-test scores.The effectiveness of the mobile learning application was measured by the enhancement in students' reading and writing abilities, as evidenced by the comparison of pre-test and post-test scores.

RESULTS AND DISCUSSION

Based on the test results of the students' reading and writing abilities, the researcher discovered that the students still struggle to identify the content of the text and questions. However, they can improve their reading and writing abilities by actively participating in the teaching and learning process through the LearnEnglishKids application. The following explanation illustrates the research's outcome:

Students Reading and Writing Skill

The results of this study provide a comprehensive comparison between the experimental class, which utilised a mobile learning application, and the control class, which followed a conventional teaching method. The analysis is based on pre-test and post-test scores, highlighting the impact of the mobile learning application on student performance.

Table 1
The Level of Students' Achievement

		EXPERIMENTAL CLASS				CONTROL CLASS			
		PRE-TEST		POST-TEST		PRE-TEST		POST-TEST	
VALUE	LEVEL OF ACHIEVEMENT	F	%	F	%	F	%	F	%
80-100	Excellent	3	8%	34	85%	2	5%	3	8%
66-79	Good	13	33%	6	15%	6	15%	22	55%
56-65	Sufficient	12	30%	0	0%	17	43%	5	13%
40-55	Fairly Sufficient	11	28%	0	0%	12	30%	9	23%
< 39	Poor	1	3%	0	0%	3	8%	1	3%

The pre-test results set a baseline for both classes. In the experimental class, the distribution of scores is as follows: 8% of students achieve an "excellent" level (80–100), 33% are "good" (66-79), 30% are "sufficient" (56–65), 28% are "fairly sufficient" (40–55), and 3% are in the "poor" category (<39). The control class exhibited a similar distribution but with slightly lower performance: 5% of students are "excellent," 15% are "good," 43% are "sufficient," 30% are "fairly sufficient," and 8% are "poor."

These pre-test results indicate that both groups started with comparable levels of achievement, with the majority of students in both classes falling within the "sufficient" to "fairly satisfactory" categories. The similarity in the initial performance levels allows for a more accurate assessment of the impact of the mobile learning application used in the experimental class.

The results of the post-test reveal a significant enhancement in the experimental class, reflecting the positive impact of the mobile learning application. In this class, 85% of

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students achieve "excellent" scores, a substantial increase from the 8% in the pre-test. The percentage of students in the "Good" category decreases to 15%, and no students remain in the "Sufficient," "Fairly Sufficient," or "Poor" categories, highlighting the effectiveness of the intervention in elevating all students to higher performance levels.

In contrast, the control class showed the fewest enhancements. The percentage of students achieving "excellent" scores increased from 5% to 8%, while those in the "good" category rose from 15% to 55%. Despite these gains, a significant portion of students remained in the "Sufficient" (13%) and "Fairly Sufficient" (23%) categories, and 3% of students continued to be in the "Poor" category.

Table 2
Descriptive Statistics

Descriptive Statistics				
	N	**Minimum**	**Maximum**	**Mean**
Pre-test Experimental	40	36	83	61.07
Post-test Experimental	40	70	100	88.08
Pre-test Control	40	33	83	57.15
Post-test Control	40	36	93	63.63
Valid N (listwise)	40			

Descriptive statistics further illustrate the differences between the two classes. The mean score for the experimental class increased from 61.07 in the pre-test to 88.08 in the post-test, indicating a substantial enhancement. In contrast, the control class's mean score increased from 57.15 to 63.63, reflecting a less dramatic, though still positive, change.

The Influence of Mobile Learning Application on Students' Reading and Writing Ability

The researcher examined the normality and homogeneity of the data before conducting an independent sample T-test to determine the acceptance or rejection of the alternative hypothesis. The following table displays the results.

Table 3
The Result of Normality Test

Tests of Normality						
	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statistic	df	Sig.	Statistic	df	**Sig.**
Pre-test Experimental	.111	40	.200*	.969	40	**.332**
Post-test Experimental	.116	40	.189	.970	40	**.353**
Pre-test Control	.112	40	.200*	.973	40	**.460**
Post-test Control	.198	40	.000	.952	40	**.087**

***. This is a lower bound of the true significance.**

a. Lilliefors Significance Correction

The Shapiro-Wilk was utilised since the data was distributed lower than 50 (>50). The post-test experimental produced a significance value of 0.353, and the post-test control produced a significance value of 0.460, which is greater than 0.05. These outcomes suggest that the data for both test groups exhibited a normal distribution, given that the sig. value (significance level) was greater than $\alpha = 0.05$. With the data meeting the normal distribution criteria, the independent sample t-test was employed to assess the homogeneity of the data, yielding the subsequent outcomes.

Table 4
The Result of Test of Homogeneity

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	**Sig.**
Students' Result	Based on Mean	1.416	1	80	.238
	Based on Median	.774	1	80	.382
	Based on Median and with adjusted df	.774	1	79.466	.382
	Based on trimmed mean	1.299	1	80	.258

Table 4. shows the homogeneity test results using Levene's test, with a significant value of 0.238, which is higher than 0.05, indicating that the data is homogeneous. Since normality and homogeneity conditions are met, an independent sample T-test was employed to test the hypothesis.

Table 5.
The Result of Independent Samples Test

Independent Samples Test

		Levene's Test for Equality of Variances		**t-test for Equality of Means**						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	**95% Confidence Interval of the Difference**	
									Lower	**Upper**
Students' Result	Equal variances assumed	4.059	.047	9.817	78	.000	24.450	2.491	19.492	**29.408**
	Equal variances not assumed			9.817	69.182	.000	24.450	2.491	19.482	**29.418**

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The SPSS computation indicates that the Sig. (2-tailed) value is 0.000, which is less than 0.05. it can be concluded that the data is statistically significant. There is a notable difference in reading and writing ability between the experimental and control groups, leading to the conclusion that they are significantly different. It indicates the acceptance of the alternative hypothesis (Ha). As a result, the study determined that students reading and writing skills enhanced after being taught via a mobile learning application.

These findings highlight the effectiveness of mobile learning applications in improving academic performance at various achievement levels (Hattie, 2023). The comparison of experimental and control courses reveals a substantial difference in outcomes due to the mobile learning application. The experimental class had a significant increase in students receiving "excellent" marks, showing the application's capacity to significantly enhance academic performance and successfully address learning gaps.

In contrast, the control group demonstrated slighter increases, implying that conventional teaching methods alone may not produce comparable results (Hanyfatunia, 2022; Hussain et al., 2020; Mesa & Hermayanti, 2021). This gap highlights the positive effects of integrating technology, such as mobile learning applications, into educational environments to enhance academic performance (Bano et al., 2017).

The results of the experimental class support the idea that mobile learning applications can help transform average or inferior students into high achievers. The findings imply that implementing technology into the learning process may result in significant academic advances, particularly in enhancing students' performance levels (Afriyani, 2022; Hamdani & Puspitorini, 2021; Khashan & Abuseileek, 2023).

CONCLUSION

Overall, this study presents strong evidence supporting the efficacy of mobile learning applications in improving the academic achievement of fifth-grade students in reading and writing. The contrast between the experimental group, which employed a mobile learning application, and the control group, which adhered to traditional teaching methods, revealed significant differences in student outcomes. The experimental class demonstrated significant enhancements in achievement levels, specifically with a significant increase in the number of students achieving "excellent" scores. The results indicate that implementing mobile learning technologies can greatly enhance students' academic performance, especially by helping average or below-average students excel and achieve high levels of success.

The results highlight the significant impact that mobile learning applications may have in addressing educational gaps and encouraging greater academic achievement. Despite the fact that the control class made incremental progress, the experimental class made more considerable enhancements. This highlights the limitations of conventional teaching techniques when used in school. Thus, integrating mobile learning applications into educational environments not only increases student engagement but also leads to significant academic improvements.

Nevertheless, the study's limitations, such as the limited number of participants and the short length of the intervention, indicate the necessity for additional research to investigate the long-term effects and wider applicability of these findings. Future research should incorporate larger sample sizes, longer implementation durations, and other factors to acquire a more

comprehensive understanding of the full capabilities of mobile learning applications in different educational settings.

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