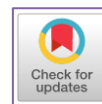


## Mobile learning approach in teaching elementary school English literacy: What are their voices?



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**Abstract:** This study examines the impact of a mobile learning application on the reading and writing skills of fifth-grade students in Purworejo Regency, Central Java. Eighty students were divided into an experimental group using the LearnEnglish Kids: Playtime app and a control group using traditional methods. The data were collected through writing tests and questionnaires and analyzed using Guttman scale. Results showed significant improvement in the experimental group, with mean scores rising from 61.07 to 88.08 and 85% of students achieving an "Excellent" rating. The control group showed only modest gains, with mean scores increasing from 57.15 to 63.63. Tests for normality, homogeneity, and an independent sample t-test confirmed a statistically significant difference between the two groups (Sig. 0.000). Additionally, a questionnaire revealed that 71% of students agreed the app helped improve their language skills, and 96% felt it met their learning needs. These findings suggest that integrating mobile learning tools like LearnEnglish Kids: Playtime into the curriculum can significantly boost student performance and motivation. Future research should investigate the long-term effects of mobile learning on language skills and explore its applicability across different educational settings.

**Keywords:** Mobile Learning Application; Reading; Writing; Enhancement

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## INTRODUCTION

English at elementary school level has limited attention from the government. Not all schools consider English as one of their subjects particularly in the writing skills. As a result, many students still have low ability to use English. English is an international language that connects people both nationally and globally. The use of English is closely related to various aspects of life, such as technology, education, and business (Puspitorini, 2016). The presence of foreign companies in Indonesia also strengthens the position of English as an important language, especially in the fields of education and employment.

English language instruction at the elementary school level has become common practice in the Indonesian education system. Indonesia is currently implementing the Independent Curriculum (Merdeka Curriculum), designed in response to declining academic performance, learning motivation, and student character due to the COVID-19 pandemic. However, the dynamics of curriculum policy changes appear unstable, as

they frequently change without clear direction or substance. These changes can diminish the effectiveness of learning (Martaliana et al., 2021).

In addition, the rapid development of the curriculum is not always accompanied by an analysis of the philosophical foundations that form the basis and direction of education (Hidayah et al., 2022). In this updated curriculum, the English subject has undergone changes both in terms of its role and influence in elementary schools (Damayanti et al., 2023).

Currently, English is categorized as an elective subject with two hours of instruction per week. Schools can decide to teach it throughout the academic year based on financial readiness, resources, and supporting facilities (Nuriyah, 2021). Many schools have incorporated English into their teaching and learning activities, some even starting in first grade, although it generally begins in fourth grade. Unfortunately, the quality of instruction in some schools remains inadequate.

The process of learning to read can be done in various ways, such as reading books, taking notes, enriching vocabulary, and doing exercises consistently (Walburg, 2021). However, all of these methods require a conducive learning environment to be effective. Anggia and Ginola (2016) emphasized the importance of selecting teaching materials that align with students' learning interests. Therefore, teachers are required to deliver material effectively, one way of doing this is by providing supporting media for English learning in EFL (English as a Foreign Language) classes.

Of the four basic skills in language learning—listening, speaking, reading, and writing—reading is a crucial aspect. Reading ability is the primary foundation that students must master. According to Mesa and Hermayanti (2021), reading ability is an important element for achieving success in society, because it plays a big role in a person's social and educational progress.

Besides reading, writing skills are also an important aspect that needs to be honed. Putri and Aminatun (2021) stated that writing is the activity of expressing ideas, feelings, or hopes in written form. This skill is crucial for students in deepening their understanding of English because it allows them to convey ideas clearly and systematically.

However, in Indonesia, students still experience various obstacles in writing, both from a psychological, linguistic and cognitive perspective (Rahmatunisa, 2014). Some of the main problems that often arise include grammar (Ariyanti & Fitriana, 2017; Astrini et al., 2020), vocabulary (Mahmudah et al., 2017), and low motivation which makes it difficult for students to express ideas in writing (Astrini et al., 2020). This problem is exacerbated by the lack of writing learning at the elementary school level (Wen & Walters, 2022). The impact of this problem is the students have low ability to write and relying too much on the teacher's guidance.

In the modern era of education, technology integration is crucial for creating engaging and effective learning experiences. With the increasing use of mobile devices, teachers now have new opportunities to improve teaching methods to adapt to the diverse needs of students. The term "mobile learning" emerged alongside the use of digital devices in teaching and learning activities. Zain and Bowles (2021) define mobile learning as an electronic information service that enables students to learn anytime and anywhere, without being bound by place or time.

Despite the increasing use of digital technology in language learning, most research still focuses on older students and their listening or speaking skills. Research on English reading and writing skills at the elementary level is still limited. This study seeks to fill

this gap by exploring the use of mobile applications to improve fifth-grade elementary school students' English reading and writing skills.

Mobile-based learning provides students with the flexibility to learn anytime, anywhere. Although the definition of mobile learning continues to evolve with rapid technological advances, Hidayat and Utomo (2014) describe mobile learning as a service that provides information electronically and enables learning without the constraints of time and place. In this sense, mobile learning is part of the practice of e-learning (Viberg, 2015).

Gautham (2018) groups mobile learning applications into four main categories. The first is Workplace learning that is designed to increase employee productivity through training and competency development. The second is Skill development apps which help users develop specific skills according to their interests, including exploring new fields.

The third is Hobbies that allows users to pursue activities such as music, art, and dance using flexible digital media. The fourth is Educational applications from kindergarten to high school which is used to support independent learning, prepare for entrance exams, and are available portable both at school and at home.

Overall, mobile learning apps offer a flexible and personalized learning experience, allowing users to learn at their own pace and schedule from any location. With user-friendly interfaces and multimedia content, these apps enhance engagement and enhance the effectiveness of the learning process. These advantages make them an inclusive and adaptable learning resource for a wide range of audiences.

A number of studies have evaluated the use of digital tools to improve language skills. For example, Hanyfatunia (2022) found that the majority of students enjoyed the features of the mobile app although some still experienced language and usage barriers. Khashan and Abuseileek (2023) also reported significant improvements in the listening and speaking skills of tenth grade students after using the mobile learning application.

Other studies highlight different aspects of digital learning. Mesa and Hermayanti (2021) studied students' perceptions of mobile applications in reading comprehension, while Afriyani (2022) used classroom action research to improve junior high school students' listening skills through a web platform. Demir and Akpınar (2018) studied the influence of mobile applications on students' academic performance and attitudes, while Hamdani and Puspitorini (2021) examined the effectiveness of mobile applications in improving students' vocabulary acquisition.

Unlike previous research that focused on advanced learners or listening and speaking skills, this study focused on elementary school students, specifically fifth graders in Purworejo Regency. Utilizing a blended approach through questionnaires and tests, this study makes a significant contribution to addressing the challenges of early reading and writing instruction and demonstrates the potential of apps like LearnEnglish Kids: Playtime in elementary education.

The primary objective of this research is to provide information on the students' writing improvement and their responses to the implementation of mobile application. The findings are expected to serve as a reference in developing curricula, teaching methods, and technology integration strategies that are more enjoyable and effective for young learners.

The uniqueness of this study lies in its focus on elementary school students in Indonesia, the use of mobile technology to improve English reading and writing skills,

and its comprehensive approach in evaluating the effectiveness and practical implications of this educational intervention.

This study seeks to answer the following two main questions: (1) Can the use of mobile learning applications improve students' English reading and writing skills in Purworejo Regency?; (2) How do students respond to the application of mobile applications in learning to read and write English?

## **METHODS**

### **Research Design**

The type of research used in this study is experimental research. According to Sugiyono (2016), experimental research aims to determine the effect of a treatment on other variables under controlled conditions. This study aimed to gather empirical evidence regarding the effectiveness of using mobile learning applications in improving the reading and writing skills of fifth-grade students in five elementary schools in Purworejo Regency, namely: SD Negeri Bragolan, SD Negeri Geparang, SD Muhammadiyah Bayan, SD Muhammadiyah Purwodadi, dan SD Muhammadiyah Purworejo.

The approach used was a mixed methods approach, combining qualitative and quantitative data. Researchers divided the class into two groups: an experimental class and a control class. The experimental class received treatment using a mobile learning application, while the control class underwent conventional learning without the application.

### **Research Sample**

The sample in this study consisted of fifth-grade students at the five elementary schools. The sampling technique used was saturated sampling, which refers to the entire relevant population. Of the 88 students, only 80 completed the learning process and the reading and writing ability measurements. The experimental group consisted of 40 students, and the control group consisted of 40 students. The data were collected from July to September 2024.

### **Research Instrument**

Sugiyono (2016) stated that research instruments are tools used to measure observed natural phenomena. Arikunto (2013) also emphasized that instruments are tools that assist researchers in collecting data. In this study, the two main instruments used were tests and questionnaires.

Tests were administered to students in both groups to measure their reading and writing skills. The questions included four types: matching, true-false, fill-in-the-blank, and rearranging. Assessment was conducted using a rubric consisting of five categories: very low (0–39), fairly low (40–55), moderate (56–65), good (66–79), and very good (80–100).

Additionally, a questionnaire was used to assess students' perceptions of learning using mobile applications. This questionnaire was refined based on expert input, eliminating similar or irrelevant items. The ten selected questionnaire items demonstrated high validity and reliability, with a correlation value above 0.413 and a Cronbach's Alpha coefficient of 0.737. The scale used was a two-point Guttman scale (yes/no).

## Procedures and Data Analysis

A total of 80 students were divided into two groups based on a two-class factorial design. The experimental group used a mobile application (LearnEnglish Kids: Play-time) as a learning medium, while the control group used conventional teaching methods.

Before the lesson began, both groups were given a pre-test to assess their initial abilities. After completing the reading and writing lessons, students took a post-test to gauge their progress. The experimental class was also asked to complete a questionnaire to assess their views on the use of mobile apps in English learning.

The data obtained were analyzed descriptively and inferentially using SPSS software. The analysis included descriptive statistics to measure student engagement and writing skills, as well as t-tests to measure the effect of the mobile application on reading and writing skills.

## RESULTS AND DISCUSSION

### Results

#### Students' Reading and Writing Skills

The comparison of pre-test scores shows that both the experimental and control groups had relatively equal initial achievement levels. The majority of students in both groups fell within the "moderate" to "fairly low" categories. This reflects equal initial conditions and allows for a more accurate evaluation of the impact of the mobile app intervention in the experimental group.

After the learning process, post-test results showed significant improvement in the experimental group. A total of 85% of students achieved the "very good" category, a sharp increase from only 8% in the pre-test. Meanwhile, the number of students in the "good" category decreased to 15%, and no students fell into the "moderate," "fairly low," or "very low" categories. This demonstrates the effectiveness of the LearnEnglish Kids app in improving learning outcomes.

In contrast, the control group showed more moderate improvement. The number of students with "very good" scores increased slightly from 5% to 8%, and the number of students with "good" scores increased from 15% to 55%. However, there were still students in the "moderate" (13%), "fairly low" (23%), and "very low" (3%) categories. Overall, these results indicate that the improvement in the experimental group's abilities was much more significant than in the control group.

Table 1 illustrates the difference in results between the control and experimental classes. The experimental group's average score rose from 61.07 on the pre-test to 88.08 on the post-test—an increase of 27.01 points. Meanwhile, the control group's average score only increased from 57.15 to 63.63, a gain of 6.48 points.

**Table 1.** Descriptive analysis of students' reading and writing abilities

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

The Influence of the LearnEnglish Kids Application on Reading and Writing Skills

Before conducting the t-test, the researcher ensured that the data met the assumptions of normality and homogeneity.

Table 2. Normality Test Results

	Tests of Normality					
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test Experimental	0.111	40	0.200*	0.969	40	0.332
Post-test Experimental	0.116	40	0.189	0.970	40	0.353
Pre-test Control	0.112	40	0.200*	0.973	40	0.460
Post-test Control	0.198	40	0.000	0.952	40	0.087

Table 2 presents the results of the normality test for the experimental and control classes. The Shapiro-Wilk test was used because the data were less than 50 samples. The post-test results for the experimental class showed a significance value of 0.353, while for the control class it was 0.460—both above 0.05. These results indicate that the data from both groups are normally distributed, as the significance value exceeds  $\alpha = 0.05$ . The researchers then used an independent sample t-test to evaluate the homogeneity of the data, which met the criteria for normal distribution and resulted in the following conclusions.

Table 3. Homogeneity Test Results

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
<b>Students' Result</b>	Based on Mean	1.416	1	80	0.238
	Based on Median	0.774	1	80	0.382
	Based on Median and with adjusted df	0.774	1	79.466	0.382
	Based on trimmed mean	1.299	1	80	0.258

Table 3 presents the results of the homogeneity test conducted using Levene's test, with a significance value of 0.238. This value is above 0.05, indicating that the data are homogeneous. Since the requirements for normality and homogeneity have been met, an independent sample t-test was used to test the hypothesis.

Table 4. Hypothesis Test Results

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	
<b>Students' Result</b>	Equal variances assumed	4.059	0.047	9.817	78	0.000	24.450	2.491	19.492	<b>29.408</b>
	Equal variances not assumed			9.817	69.182	0.000	24.450	2.491	19.482	<b>29.418</b>

The calculation results using SPSS show that the Sig. (2-tailed) value is 0.000, which means it is smaller than 0.05. Thus, it can be concluded that the data is statistically significant. As shown in Table 4, there is a significant difference in reading and writing skills between the experimental group and the control group, so it can be concluded that both are significantly different. This indicates that the alternative hypothesis ( $H_a$ )

is accepted. This study concludes that learning using mobile applications is proven to improve students' reading and writing skills.

### Students' Perceptions of the Mobile Learning Approach in Learning English Reading and Writing

A questionnaire was used to assess students' perceptions of English learning using mobile learning applications in the experimental class. The survey included various questions related to the application of mobile applications in reading and writing. The questionnaire consisted of 10 items, and student perceptions were assessed using a two-point Guttman scale. Percentages of respondents' achievement levels for each item were calculated to provide a comprehensive analysis. Detailed analysis results are presented in Table 5.

**Table 5.** Student Perception Questionnaire Results

No.	Indicator	Guttman scale	%	Approval Rate
<b>Reading Ability</b>				
1.	I can understand the meaning of the text accurately when learning English through mobile learning applications.	0.63	63	High
2.	Understanding English text becomes easier when using learning applications.	0.75	75	High
3.	My English vocabulary improved when learning using the app.	0.75	75	High
	Mean	0.71	71	High
<b>Writing Ability</b>				
4.	Compared to textbooks, learning apps help me better understand and rewrite English texts.	0.71	71	High
5.	Using mobile learning apps makes the writing learning experience more fun and engaging.	0.71	71	High
6.	Doing written assignments becomes more interesting after learning English through the application.	0.79	79	High
7.	I prefer to learn to write English using apps rather than textbooks.	0.63	63	High
	Mean	0.71	71	High
<b>Application in Daily Learning</b>				
8.	Mobile learning apps better suit my needs in learning English.	0.96	96	High
9.	I gained a better understanding of English reading and writing rules that can be applied in everyday life after studying through the application.	0.71	71	High
10.	My ability to read and write English in various contexts has improved after using the learning app.	0.67	67	High
	Mean	0.78	78	High

Table 5 depicts the average level of respondents' agreement on the effectiveness of digital learning applications in three main aspects: reading ability, writing ability, and application in daily learning.

For the reading ability aspect, the average agreement level was 0.71. This indicates that the majority of respondents considered digital applications effective in improving reading comprehension and English vocabulary acquisition. Specifically, the majority of students agreed that these applications facilitated comprehension of English texts and helped enrich their vocabulary.

Regarding writing skills, the average agreement level was also 0.71. This indicates that respondents considered digital learning applications to have positively impacted their writing skills. The data shows that using the applications not only makes the

writing process more enjoyable but also helps students understand and rewrite English texts and increases engagement in completing written assignments.

The highest level of agreement was recorded for the aspect of application in everyday learning, with an average score of 0.78. This reflects respondents' strong belief that digital learning apps are suited to their English learning needs and effective in helping them apply reading and writing rules in real-life situations. This data highlights the practical benefits of digital apps in improving English skills across a variety of life contexts.

Overall, Table 5 shows a consistent and high level of agreement on the effectiveness of digital learning applications, with the strongest support seen for their application in everyday life.

## Discussions

### Improving Students' Reading and Writing Skills

These findings confirm that the use of mobile learning applications is effective in improving the academic achievement of students at various ability levels (Hattie, 2023). These results are in line with the study conducted by (Chakravarthy & V., 2023; Muhfiyanti et al., 2021; Vu et al., 2023; Wang et al., 2023), which stated that mobile applications play an important role in developing English reading skills. Support for these results is also seen from research by (Dollah et al., 2021; Krisbiantoro & Pujiani, 2020; Li, 2024; Vurdien, 2019), which shows that students who study with the help of mobile applications experience significant improvements in writing skills. However, research from Polat et al. (2023) state that not all mobile applications are significantly able to improve students' writing skills.

The striking difference between the experimental and control groups demonstrates the positive impact of mobile app use. The app not only improved academic achievement but also successfully bridged the learning gap, as evidenced by the increased number of students in the experimental group achieving "Very Good" grades. In contrast, the control group showed only limited improvement, indicating that conventional teaching methods did not yield the desired results (Hanyfatunia, 2022; Hussain, 2020; Mesa & Hermayanti, 2021). This difference emphasizes the benefits of integrating technology such as mobile applications into the school environment to support students' academic achievement (Bano et al., 2017).

To test the hypothesis regarding the difference in writing ability between students using mobile apps and those using traditional learning methods, an independent sample test was conducted. The analysis showed that mobile apps significantly impacted students' English reading and writing abilities, with a significance level of 0.000. The findings in the experimental group support the theory that mobile learning apps can motivate previously low-achieving students to achieve higher levels. These results are also supported by previous studies conducted by Afriyani (2022); Hamdani and Puspitorini (2021); Khashan and Abuseileek (2023). Overall, these findings suggest that the application of technology in the learning process can have a significant positive impact on students' academic performance, particularly in improving English language skills.

### Students' Perceptions of Learn English Kids as a Learning Medium

The second research question aims to determine students' perceptions regarding the role of mobile technology in English learning, particularly in reading and writing skills



through mobile applications, and its application in everyday learning practices. This study highlights several important aspects related to students' views on the use of mobile learning applications in improving English reading and writing skills.

The average approval rating of 71% for reading and writing skills indicates that students generally consider this digital application beneficial in language acquisition. The following findings deserve further attention:

The majority of students (71%) stated that mobile apps helped them understand English texts and expand their vocabulary. Seventy-five percent of respondents reported that using these apps made it easier to understand the text content, indicating that the interactive features and flexibility of learning apps—such as multimedia content, customized learning paths, or immediate feedback—contributed to improving their comprehension. These results align with findings reported in research by John et al. (2021); Nurhidayati and Rahmawati (2023); Sitanggang et al. (2024).

The perceived benefits in writing skills are also noteworthy, with 71% of students stating that the mobile app helped them rewrite texts and understand written English better. The fact that 79% of students felt that writing assignments became more interesting after using the app is an important finding. This indicates that mobile-based learning platforms not only improve technical skills but also motivate students, making the writing process more enjoyable and engaging. These findings align with a study conducted by Jeanjaroonsri (2023); Luo et al. (2023); Rosalinda et al. (2022), which also shows positive student responses to the use of mobile applications in writing learning. However, these results differ from research by Nguyen (2023), which found no difference in student perceptions between learning using mobile applications and conventional methods.

The highest level of agreement, at 78%, was seen in the aspect of applying skills in everyday life. This strong agreement reflects students' belief that the skills they acquired through digital applications can be applied in real-life situations. For example, 96% of students stated that the application met their learning needs, indicating that mobile learning solutions are relevant and adaptive to the characteristics and needs of various learner profiles. This finding is supported by a study conducted by Andini and Arianto (2023); Palupi et al. (2023); Pham and Nguyen (2023); Phuong (2022), which also shows students' positive perceptions of learning English using mobile applications.

## CONCLUSION

This study examined the effect of using a mobile learning application on the reading and writing skills of fifth-grade students in Purworejo Regency, Central Java. Compared to conventional learning methods, the study highlighted significant improvements in both skills when students used the LearnEnglish Kids: Playtime application. The experimental group using the application showed significant performance improvements, with the majority of students achieving “very good” scores in reading and writing after the intervention. In contrast, the control group not using the application experienced only marginal improvements.

Students' perceptions of mobile learning apps were also very positive. These apps were considered helpful in understanding English texts, expanding vocabulary, and making the learning experience more engaging and enjoyable. Based on these findings, it can be concluded that mobile learning apps can significantly improve English skills in early childhood learners and offer a more dynamic and effective educational approach than traditional methods. The implication of this research for English teachers

is to improve the teaching practice by utilizing technology in class. By integrating technology into learning, particularly at the elementary school level, it has the potential to significantly improve student learning outcomes and motivation.

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