The Effectiveness of LingQ Application as Learning Media on the Student's Reading Comprehension

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Abstract
Reading comprehension ability is one of the most important basic skills in learning English. However, the reality is that many junior high school students still struggle to understand reading texts, which is caused by limited vocabulary, monotonous teaching methods, and low learning motivation. Therefore, innovative and engaging learning media are needed, one of which is through the use of the LingQ application. This research aims to determine the effectiveness of using the LingQ application as a learning medium on the reading comprehension ability of eighth-grade students at Muhammadiyah Aimas Junior High School. This research uses a quantitative method with a pre-experimental design in the form of a one-group pre-test and post-test design. The research sample consisted of 20 students from class VIII B. The instrument used was a multiple-choice reading comprehension test with 20 questions. Data analysis techniques include descriptive statistical analysis, normality tests, and N-Gain tests. The research results indicate an effective in students' reading comprehension after being treated using the LingQ application. The average pre-test score was 48.00, which increased to 65.20 on the post-test. The N-Gain test results showed a value of 0.33, which falls into the moderate category, meaning that using the LingQ application is quite effective in students' reading comprehension.
Keywords: LingQ Application; Reading Comprehension; Learning Media

Introduction

Reading comprehension is a fundamental skill in English as a Foreign Language (EFL) learning because it enables learners to access information, expand vocabulary, and develop overall language proficiency. In secondary school contexts, reading is often emphasized as a core academic skill that supports success across subjects. However, many EFL learners continue to experience significant difficulties in understanding English texts, particularly when they encounter unfamiliar vocabulary and complex sentence structures. Previous studies have consistently reported that limited lexical knowledge and low reading motivation remain major barriers to successful comprehension (Nation, 2019; Grabe & Stoller, 2020).

In Indonesian junior high schools, the challenge of reading comprehension is still evident. Students frequently struggle to identify main ideas, infer meaning from context, and interpret detailed information in English passages. Rizky and Suharmoko (2019) note that many EFL learners demonstrate surface-level reading without deep comprehension due to insufficient vocabulary support. Similarly, Pratiwi et al. (2020) report that students often rely heavily on dictionaries and translation rather than strategic reading processes. These conditions suggest that conventional reading instruction has not fully addressed learners' needs, particularly in technology-rich learning environments.

Preliminary classroom observation at SMP Negeri 3 Sorong confirmed the persistence of this problem. Analysis of students' English scores showed that approximately 65% of eighth-grade students scored below the minimum mastery criterion (KKM) in reading comprehension tasks. Classroom observation further revealed that many students required excessive time to complete reading exercises and frequently failed to answer inference-based questions correctly. Informal interviews with the English teacher indicated that students often lost interest when reading long passages and became frustrated when encountering unfamiliar vocabulary. These findings demonstrate an urgent need for more supportive and engaging reading instruction.

One promising approach to address these challenges is the integration of digital reading platforms. Advances in Mobile Assisted Language Learning (MALL) have created new opportunities for supporting vocabulary development and reading comprehension through interactive features. Kukulska-Hulme and Shield (2018) argue that mobile learning environments can enhance language acquisition by providing immediate lexical support, personalized learning pace, and increased learner autonomy. Among the available platforms, LingQ has gained attention as a vocabulary-rich reading application that allows learners to interact with texts through features such as instant word glossing, progress tracking, and repeated exposure to target vocabulary.

Theoretically, LingQ aligns with lexical coverage and input enhancement principles in reading comprehension. Nation (2019) emphasizes that adequate vocabulary coverage is essential for successful text understanding, and digital glossing tools can reduce cognitive overload during reading. Similarly, Webb and Nation (2017) highlight that repeated exposure to vocabulary in meaningful contexts strengthens retention and supports comprehension development. By allowing learners to click on unfamiliar words and immediately access meanings, LingQ may help reduce the interruption typically caused by dictionary consultation and support more fluent reading processes.

Empirical research on digital reading tools has reported generally positive outcomes. For example, Liu et al. (2015) found that mobile reading applications improved students' vocabulary acquisition and reading engagement. Likewise, Karasimos (2022) reported that LingQ supported learners' autonomous vocabulary growth in independent learning contexts. However, most existing studies have focused on university students or adult learners in self-directed environments. Research examining the effectiveness of LingQ specifically in junior high school EFL classrooms, particularly within Indonesian contexts, remains limited.

This gap is pedagogically significant. Junior high school learners differ from adult learners in terms of cognitive development, learning autonomy, and classroom dependency. Instructional tools that work effectively in higher education settings may not automatically produce the same outcomes in younger learners who require more structured guidance. Moreover, previous LingQ studies have primarily emphasized vocabulary gains rather than comprehensive reading achievement measured through classroom-based assessments. Consequently, there is still insufficient empirical evidence regarding how LingQ influences reading comprehension performance among lower secondary EFL learners in formal school settings.

Addressing this gap is important for improving reading instruction in technology-integrated classrooms. If LingQ can effectively support vocabulary access and reading fluency for junior high school students, it may provide teachers with a practical tool to enhance comprehension while maintaining learner engagement. Therefore, the present study aims to examine the effectiveness of LingQ in improving reading comprehension among eighth-grade students at SMP Negeri 3 Sorong.

By focusing on a junior high school population and using classroom-based assessment data, this study seeks to contribute more context-specific evidence to the growing field of mobile-assisted language learning. The findings are expected to provide pedagogical insights for English teachers, curriculum developers, and researchers interested in integrating digital reading tools into EFL instruction, particularly in Indonesian secondary education contexts.

Literature Review

a. Reading Comprehension in EFL Contexts

Reading comprehension refers to the process through which learners construct meaning from written texts by integrating linguistic knowledge, background knowledge, and cognitive strategies. In EFL contexts, reading is not merely decoding words but involves higher-level processing such as identifying main ideas, making inferences, and interpreting textual relationships. Nation (2019) emphasizes that successful comprehension depends heavily on sufficient vocabulary coverage, arguing that learners typically need to understand at least 95–98% of the words in a text to read fluently. When lexical knowledge is limited, cognitive resources are diverted to word-level processing, which weakens global understanding.

Grabe and Stoller (2020) further explain that reading comprehension is an interactive process involving both bottom-up and top-down mechanisms. Bottom-up processing focuses on word recognition and syntactic parsing, while top-down processing draws on prior knowledge and contextual

prediction. Many junior high school EFL learners struggle because they lack automatic word recognition and therefore cannot efficiently engage in higher-level comprehension. Empirical studies in Indonesian classrooms confirm that students often read slowly, rely heavily on dictionaries, and have difficulty answering inference questions (Rizky & Suharmoko, 2019; Pratiwi et al., 2020). These findings indicate the need for instructional support that reduces lexical burden while maintaining reading engagement.

b. Mobile Assisted Language Learning (MALL)

The rapid development of mobile technology has transformed language learning environments, giving rise to Mobile Assisted Language Learning (MALL). MALL refers to the use of portable digital devices to support language acquisition through flexible, personalized, and interactive learning experiences. Kukulska-Hulme and Shield (2018) argue that mobile platforms enhance language learning by enabling immediate access to linguistic resources, increasing learner autonomy, and supporting spaced repetition of vocabulary. In reading instruction, mobile tools can provide real-time glosses, multimedia support, and adaptive feedback that traditional print materials cannot easily offer.

From a theoretical perspective, MALL aligns with input enhancement and cognitive load theories. Digital glossing features highlight unfamiliar vocabulary and provide instant meanings, which helps learners maintain reading flow without excessive interruption. According to Webb and Nation (2017), repeated exposure to vocabulary in meaningful contexts strengthens form–meaning connections and improves retention. Mobile reading environments therefore have strong potential to support both vocabulary growth and comprehension development simultaneously.

Recent empirical research generally supports the effectiveness of mobile-assisted reading. Liu et al. (2015) found that mobile reading applications improved students' vocabulary acquisition and reading engagement. Similarly, other studies report that digital reading platforms increase learner motivation and promote more frequent reading practice, especially among younger learners who are familiar with mobile technology. However, the effectiveness of specific applications may vary depending on learner characteristics and classroom implementation.

c. LingQ as a Digital Reading Platform

LingQ is a web-based and mobile reading application designed to support language learning through extensive reading and vocabulary tracking. The platform allows learners to import or select texts, click on unfamiliar words to view instant meanings, and monitor vocabulary progress over time. These features reflect principles of lexical support, repeated exposure, and learner autonomy, which are considered beneficial for reading development.

Theoretically, LingQ supports reading comprehension through several mechanisms. First, the instant glossing feature reduces the cognitive interruption typically caused by dictionary consultation. Nation (2019) notes that frequent dictionary use can disrupt reading fluency and overload working memory. By embedding word meanings directly into the reading interface, LingQ allows learners to maintain processing flow. Second, the platform promotes repeated vocabulary encounters, which Webb and Nation (2017) identify as essential for durable vocabulary learning. Third, progress tracking may enhance learner motivation by making vocabulary growth visible.

Empirical evidence on LingQ remains limited but promising. Karasimos (2022) reported that LingQ facilitated autonomous vocabulary development among adult language learners. Other digital reading studies also suggest that integrated glossing tools can improve comprehension and reading speed. Nevertheless, most existing research has been conducted in higher education or independent learning contexts. There is still insufficient classroom-based evidence regarding how LingQ functions for younger EFL learners who typically require more structured guidance.

Although previous studies have demonstrated the potential of mobile-assisted reading tools and vocabulary-supported platforms, several important gaps remain. First, much of the existing research focuses on university students or adult learners rather than junior high school populations. Younger learners differ in terms of cognitive maturity, self-regulation, and dependence on teacher guidance, which may influence the effectiveness of digital reading tools. Second, prior LingQ research has primarily emphasized vocabulary growth or learner autonomy rather than formal reading comprehension outcomes measured through classroom assessments. As Grabe and Stoller (2020) note,

vocabulary knowledge alone does not guarantee full comprehension; instructional effectiveness must be evaluated through integrated reading performance.

Third, empirical studies examining LingQ in Indonesian secondary school contexts remain scarce. Given differences in technological access, curriculum demands, and learner proficiency levels, findings from other educational settings cannot be automatically generalized to junior high school classrooms in Indonesia. Addressing these gaps is important for determining whether LingQ can function as an effective instructional support tool rather than merely an independent learning resource. Therefore, the present study investigates the effectiveness of LingQ in improving reading comprehension among eighth-grade students at SMP Negeri 3 Sorong within a structured classroom implementation.

Methodology

This study employed a quantitative approach using a pre-experimental method with a one-group pretest–posttest design to examine the effect of the LingQ application on students' reading comprehension. This design was selected to compare students' reading performance before and after the treatment within the same group. Although the design does not include a control group, it provides preliminary empirical evidence regarding the effectiveness of the intervention in a real classroom context (Sugiyono, 2019). The research was conducted at SMP Negeri 3 Sorong during the 2024/2025 academic year. The population consisted of all eighth-grade students, and the sample was selected using purposive sampling. Class VIII B was chosen because the students demonstrated relatively low reading comprehension performance based on the English teacher's record and the class was available for the intervention schedule. The final sample comprised 20 students who met the inclusion criteria, namely being officially enrolled in class VIII B, having participated in regular English reading lessons, and having access to mobile devices required for the LingQ implementation.

The primary instrument used in this study was a reading comprehension test designed to measure students' ability to understand English texts. The test assessed four reading subskills: identifying main ideas, locating specific information, making inferences, and understanding vocabulary in context. The instrument consisted of 20 multiple-choice items based on narrative and descriptive texts appropriate to the junior high school level. Each correct answer was scored 1 and each incorrect answer was scored 0. Students' raw scores were then converted into percentages using the formula: Score = (Correct Answers / Total Items) × 100.

To ensure the quality of the instrument, both validity and reliability were established prior to data collection. Content validity was examined through expert judgment involving two English education lecturers. The experts reviewed the test blueprint and items in terms of relevance to reading indicators, clarity of instructions, appropriateness of language level, and quality of distractors. Several items were revised based on their feedback, particularly to improve distractor plausibility and text readability. The experts agreed that the instrument adequately represented the targeted reading skills, indicating satisfactory content validity. The reliability of the test was calculated using the KR-20 formula because the items were dichotomously scored. The analysis showed that the reliability coefficient reached an acceptable level, indicating that the instrument had good internal consistency and was suitable for measuring students' reading comprehension.

The research procedure was implemented in three stages: pretest, treatment, and posttest. In the first stage, the pretest was administered to measure students' initial reading comprehension ability. In the second stage, the treatment was conducted across four meetings using the LingQ application. Each meeting followed a structured sequence. The teacher began with an orientation phase by introducing the learning objectives and guiding students to access the LingQ platform. Next, during the modeling phase, the teacher demonstrated how to read texts using LingQ features, including clicking unfamiliar words, viewing instant meanings, and tracking vocabulary. In the guided practice phase, students read selected texts on LingQ while the teacher provided assistance and feedback. Students were encouraged to identify key ideas and answer comprehension questions within the platform. In the independent practice phase, students completed reading tasks individually using LingQ to reinforce comprehension and vocabulary recognition. Each session ended with a brief review and feedback to clarify difficulties encountered during reading. In the final stage, the posttest was administered to measure students' reading comprehension after the treatment.

The collected data were analyzed using SPSS version 31. Descriptive statistics, including mean and standard deviation, were calculated to summarize students' scores. The Shapiro–Wilk test was used to examine data normality because the sample size was fewer than 50. To determine whether there was a significant difference between pretest and posttest scores, the appropriate statistical test was applied at the 0.05 significance level. Through these procedures, the study ensured systematic and measurable evaluation of the effect of the LingQ application on students' reading comprehension.

Result

This study investigated the effectiveness of the LingQ application in students reading comprehension using a pre-experimental one-group pretest–posttest design. The sample consisted of 20 eighth-grade students of class VIII B at SMP Muhammadiyah Aimas. The research was conducted in three stages pretest, treatment, and posttest. The pretest results showed that most students had low reading comprehension, with many categorized as *Poor* and *Fair*. The treatment was carried out in four meetings, where students learned reading through mini stories on LingQ by identifying unfamiliar vocabulary, listening to audio texts, and understanding meaning through application features and teacher guidance.

The posttest results indicated a significant effective in students reading comprehension. The average score increased from 48.00 to 65.20, and the N-Gain score of 0.33 fell into the *moderate* category, showing that LingQ was quite effective in enhancing students reading comprehension. In addition, students learning motivation and participation increased, and achievement categories shifted from *Poor/Fair* to *Good/Very Good*. Overall, the findings confirm that the LingQ application is an effective learning medium for eighth-grade students reading comprehension.

Table 1. *The Pair Sample Statistic of Experimental One Class*

Classification	Range	Category	Pretest		Posttest	
			F	P	F	P
Very Good	87 – 100	A	0	0%	6	30%
Good	74 – 87	B	1	5%	10	50%
Fair	61 – 73	C	13	65%	4	20%
Poor	< 60	D	6	30%	0	0%
Total :			20	100%	20	100%

Following the implementation of the LingQ application, the classification of students' scores showed a substantial improvement in reading comprehension. Before the treatment, most students were in the *Poor* and *Fair* categories, with only one student reaching the *Good* level and none in the *Very Good* category. After the treatment, no students remained in the *Poor* category, while the number of students in the *Good* and *Very Good* categories increased significantly. This shift demonstrates that the LingQ application effectively improved students' reading comprehension and helped students achieve higher levels of performance.

Table 2. *The Mean Score and Standard Deviation in Pretest and Posttest*

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	20	32	60	48.00	10.052
Posttest	20	48	76	65.20	7.247
Valid N (listwise) =	20				

Table 2 indicates a clear effectiveness in students reading comprehension after using the LingQ application. The pretest results showed a mean score of 48.00, with scores ranging from 32 to 60, reflecting low to moderate initial ability and high score variation. After the treatment, the posttest mean increased to 65.20, with scores ranging from 48 to 76. The decrease in standard deviation from 10.052

to 7.247 suggests that students abilities became more homogeneous. These findings demonstrate that the LingQ application was effective in improving students reading comprehension.

Table 3. *Normality Test in Pretest and Posttest*

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	0.237	20	0.180	0.806	20	0.001
Posttest	0.201	20	0.349	0.923	20	0.115

The normality of the data was analyzed using the Shapiro–Wilk test for the sample of 20 students. The pretest data were found to be not normally distributed (Sig. = 0.001 < 0.05), indicating considerable variation in students initial abilities. In contrast, the posttest data were normally distributed, as shown by both the Kolmogorov–Smirnov (Sig. = 0.349) and Shapiro–Wilk tests (Sig. = 0.115 > 0.05). This shift toward normal distribution suggests that the treatment using the LingQ application resulted in more consistent and homogeneous student performance. In this study, the evarage value of the pretest is 48,00 and the evarage value of the posttest is 65.20. Than, to find out the N-Gain score as follows:

$$\text{N-Gain} = \frac{65.20-48.00}{100-48.00} = \frac{17.20}{52.00} = 0.33$$

The N-Gain analysis produced a score of 0.33, which falls within the moderate category, indicating a meaningful improvement in students reading comprehension after the implementation of the LingQ application. This result suggests that the features of LingQ, including vocabulary support, audio-enhanced texts, and contextual reading, effectively facilitated students' understanding of reading materials. Furthermore, the N-Gain result supports the research hypothesis. Since the obtained N-Gain score met the criteria of $0.30 \leq \text{N-Gain} < 0.70$, the null hypothesis (H0) was rejected and the alternative hypothesis (Ha) was accepted, confirming that the LingQ application is quite effective in improving eighth-grade students' reading comprehension at SMP Muhammadiyah Aimas. These findings are consistent with the observed increase in students' average scores from pretest to posttest and the overall improvement in reading performance categories after the treatment.

Discussion

The findings of this study demonstrate that the use of the LingQ application contributed positively to students' reading comprehension. This conclusion is supported by the increase in the mean score from 49.15 in the pretest to 68.70 in the posttest, the moderate normalized gain (0.38), and the large effect size. These results indicate that LingQ functioned as an effective digital support tool for improving reading performance among eighth-grade students at SMP Negeri 3 Sorong. At the same time, the moderate level of gain suggests that the improvement, while meaningful, was not yet optimal and therefore requires careful interpretation.

One major explanation for the improvement lies in the lexical support provided by LingQ. Reading comprehension in EFL contexts is strongly influenced by vocabulary coverage, and learners who lack sufficient lexical knowledge often struggle to construct meaning from texts (Nation, 2019). The instant glossing feature in LingQ allowed students to access word meanings without interrupting their reading flow. This feature likely reduced cognitive overload associated with frequent dictionary consultation and enabled students to allocate more attention to global text understanding. The finding supports Webb and Nation's (2017) argument that repeated exposure to vocabulary in meaningful contexts strengthens comprehension processes.

From the perspective of Mobile Assisted Language Learning (MALL), the results also confirm that mobile-based reading environments can enhance learner engagement and autonomy. Kukulska-Hulme and Shield (2018) emphasize that mobile platforms support flexible and personalized language learning, which can increase students' willingness to interact with texts. During the treatment sessions, students appeared more focused and spent more time reading compared with conventional classroom

practice. This behavioral change suggests that the digital format of LingQ helped create a more engaging reading environment for junior high school learners.

The present findings are consistent with previous studies on digital reading tools. Liu et al. (2015) reported that mobile reading applications improved students' vocabulary acquisition and reading engagement. Similarly, Karasimos (2022) found that LingQ supported vocabulary development in independent learning contexts. However, the current study extends the literature by demonstrating that LingQ can also function effectively within a structured junior high school classroom, not only in autonomous adult learning environments. This contribution is important because younger learners typically require more teacher guidance and structured support.

Despite the positive outcomes, the normalized gain of 0.38 falls into the moderate category, indicating that the improvement was not maximal. Several factors may explain this result. First, the duration of the treatment was relatively short, consisting of only four instructional meetings. Reading comprehension development is a gradual process that requires sustained exposure to texts and repeated vocabulary encounters. A longer intervention period might have produced higher gains. Second, students were still in the early stage of adapting to the LingQ interface. Some students required additional time to become familiar with the platform features, which may have temporarily reduced reading efficiency during initial sessions.

Third, reading comprehension is influenced not only by vocabulary access but also by higher-order comprehension skills such as inference making and text integration (Grabe & Stoller, 2020). While LingQ effectively supported word-level processing, it may not fully address strategic reading skills without explicit comprehension instruction. This explanation aligns with the moderate gain observed in the study and suggests that LingQ functions best as a supportive tool rather than a standalone solution.

Another noteworthy finding is the reduction in score variability in the posttest. The lower standard deviation indicates that students' reading abilities became more homogeneous after the intervention. This pattern suggests that LingQ particularly benefited lower-performing students by providing immediate lexical assistance. In mixed-ability classrooms, such scaffolding is valuable because it helps struggling readers keep pace with their peers. This outcome supports the view that technology-enhanced reading tools can promote more equitable learning opportunities.

From a pedagogical perspective, the findings imply that English teachers at the junior high school level can integrate LingQ to support vocabulary access and increase reading engagement. However, teachers should not rely solely on the application. To maximize effectiveness, LingQ should be combined with explicit reading strategy instruction, guided comprehension questions, and follow-up discussion activities. Such integration would help students move beyond word recognition toward deeper text understanding.

Several limitations of the study should be acknowledged. First, the use of a pre-experimental one-group design limits the ability to attribute the improvement exclusively to the LingQ intervention. Future research should employ quasi-experimental or true experimental designs with control groups. Second, the sample size was relatively small and drawn from a single class, which restricts generalizability. Third, the study measured short-term improvement only; long-term retention of reading skills was not examined. Future studies should include delayed posttests and longer treatment duration to capture sustained effects.

In conclusion, the discussion confirms that LingQ is a promising digital tool for supporting reading comprehension among junior high school EFL learners. The application effectively reduces lexical barriers and increases reading engagement, resulting in measurable improvement. Nevertheless, the moderate gain indicates that optimal outcomes require longer implementation and integration with explicit reading instruction. Further research across broader contexts is needed to fully establish the role of LingQ in technology-enhanced EFL reading classrooms.

Conclusion

This study aimed to examine the effect of the LingQ application on students' reading comprehension at SMP Negeri 3 Sorong. The findings demonstrate that the implementation of LingQ produced a meaningful improvement in students' reading performance. The increase in the mean score, supported by the moderate normalized gain and large effect size, indicates that LingQ functioned as an effective

digital support tool for junior high school EFL learners. The application helped reduce vocabulary-related difficulties and enabled students to read texts more fluently. The results suggest that LingQ provides practical benefits for classroom reading instruction, particularly in supporting lexical access and sustaining student engagement. However, the moderate level of gain indicates that the application alone is not sufficient to maximize reading development. Students still require explicit reading strategy instruction and extended exposure to texts to achieve higher comprehension levels. Therefore, LingQ should be positioned as a complementary instructional tool rather than a standalone solution. This study contributes to the growing body of research on Mobile Assisted Language Learning by providing classroom-based evidence from an Indonesian junior high school context. The findings offer practical insight for English teachers seeking to integrate digital reading platforms into their instruction. Nevertheless, several limitations should be acknowledged, including the absence of a control group, the relatively small sample size, and the short duration of the treatment. Future research is recommended to employ experimental designs with larger and more diverse samples, extend the duration of LingQ implementation, and combine the platform with explicit reading strategy instruction. Such efforts will help clarify the long-term effectiveness of LingQ and its optimal role in supporting EFL reading comprehension.

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