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Students' Views on the Use of Duolingo to Support Reading Comprehension

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Abstract

This study investigates students' perceptions of Duolingo as an ICT-based tool for supporting reading comprehension in English as a foreign Language (EFL) education. While prior research has extensively investigated mobile-assisted language learning, fewer studies have analytically explored how Duolingo shapes students' cognitive and affective engagement in reading-related activities within the context of Indonesian higher education. This study employed a mixed-methods methodology with 54 first-semester English Education students at Universitas Muhammadiyah Kalimantan Timur to address this gap. Data were collected through questionnaires and semi-structured interviews and analyzed employing descriptive and thematic techniques. The results indicate that students typically perceive Duolingo as accessible and interesting for reading practice, though its educational efficacy seems constrained by material simplicity and reliance on consistent internet connectivity. The study demonstrates that Duolingo can serve as a supplementary tool rather than a substitute for formal education, highlighting the complex role of gamified mobile platforms in encouraging reading engagement and supporting learner autonomy in EFL contexts.

Keywords: Duolingo, digital tools, language learning, reading comprehension, students' perceptions

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1. Introduction

Reading comprehension is an essential element of language proficiency, demanding that students extract meaning from the interactions of the reader, the text, and the context (Arbain & Nur, 2017;Abadi et al., 2024). Nonetheless, despite the increasing significance of reading in EFL learning, numerous students continue to encounter difficulties in comprehending English literature, particularly when confronted with foreign terms, abstract concepts, and complex sentence patterns (Alghonaim, 2020; Anwar & Sailuddin, 2022; Arbain & Rohman, 2023). These obstacles frequently hinder their academic achievement and comprehensive language development. In Indonesian higher education, reading comprehension

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continues to be a persistent challenge. Many EFL learners find it challenging to comprehend essential concepts, connections between textual information, and interpret implied meanings within academic reading materials (Keristiana et al., 2019; Merilia et al., 2019; Jaya et al., 2023).

To address these issues, recent studies have investigated the potential of ICT-based and gamified platforms to enhance motivation and understanding (Arbain et al., 2017; Gracella & Rahman Nur, 2020; Budiyanto et al., 2024). Among these, Duolingo has established itself as an innovative platform for encouraging learner autonomy, engagement, and motivation in reading activities (Suherman et al., 2025). Duolingo is a gamified, mobile application for language acquisition that offers interactive courses in listening, speaking, reading, and writing. It has been extensively utilized as an additional educational resource in formal academic environments (Puspitasari et al., 2025; Sitompul, R.N (2025). Research indicates that game-based learning can enhance reading comprehension by maintaining learner interest and enjoyment (Ouyang et al., 2024). International data has shown that Duolingo users can reach reading levels similar to those of university students after a few semesters of formal instruction (Jiang et al., 2020). Moreover, research highlights its role in vocabulary enhancement, comprehension, and learner autonomy, essential elements of reading development in EFL contexts (Nur, 2021; Praditha & Nur, 2019; Alim et al., 2025).

Although previous investigations have shown Duolingo's prospective in language acquisition, research focusing on students' assessments of its impact on reading comprehension is limited, especially in the setting of Indonesian higher education. Most previous studies have focused on vocabulary acquisition or overall language ability rather than learners' experiences with Duolingo for reading purposes. This study seeks to investigate students' perspectives regarding the efficacy, benefits, and disadvantages of Duolingo as an ICT-based instrument that improves reading comprehension.

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2. Method

This study adopted a mixed-methods research design that integrated both quantitative and qualitative methodologies to offer a thorough knowledge of students' perspectives regarding the utilization of Duolingo in improving reading comprehension. The reason for employing a mixed-methods design is its ability to incorporate quantitative and qualitative data, resulting in more comprehensive and dependable results. This design is often utilized in research examining ICT-based and mobile-assisted language learning methods, where both cognitive and affective learner responses are crucial for analysis (Nurmahanani, 2023). This study aimed to triangulate results and achieve an in-depth understanding of Duolingo's impact on improving EFL reading comprehension by integrating these two data collections.

2.1 Participants

The participants consisted of 66 first-semester students from the English Education Department at Universitas Muhammadiyah Kalimantan Timur. Out of the total, 54 students completed the questionnaire, attributed to uneven attendance during the data collection phase. A subset of students was absent throughout the distribution, leading to a reduced number of legitimate responses. Five students were selected through purposive sampling for in-depth interviews. The participants are selected based on their active participation in Duolingo for reading comprehension, their learning patterns, and the challenges they experience. Two main methods were employed an online questionnaire and a semi-structured interview. The questionnaire comprised 15 items utilizing a four-point Likert scale (Strongly Agree, Agree, Disagree, Strongly Disagree) to evaluate five dimensions: perceived effectiveness, ease of use, motivation, engagement, and usability. The items were modified from validated instruments utilized in previous MALL research (Khilyatul Auliya et al., 2021).

The interviews, carried out with five students, were selected through purposive sampling for in-depth interviews. The participants are selected based on their active participation in Duolingo for reading comprehension, their learning patterns, and the challenges they

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experience (Budiono et al., 2025). Each session lasted around 20 to 30 minutes and was audio-recorded with the participants' consent for transcription and thematic analysis.

2.2 Data Collection

The data collection was conducted in two phases to correspond with the mixed-methods methodology. During the beginning stages, quantitative data were collected via an online questionnaire to acquire general insights into students' perceptions. The survey link was disseminated via classroom communication channels, facilitating participant responses using their mobile devices. The responses were systematically documented and arranged for study.

The next stage involved executing semi-structured interviews with five chosen individuals based on their active participation in Duolingo for reading comprehension, their learning patterns, and the challenges they experience. The interview data were transcribed verbatim and organized for thematic analysis.

2.3 Data Analysis

Quantitative data were analyzed through descriptive statistics (percentages and mean scores) to identify overarching trends in students' responses (Alim et al., 2025). Thematic analysis of qualitative data was conducted using the processes of data familiarization, coding, theme identification, and interpretation (Nowell et al., 2017). Methodological triangulation was employed to corroborate findings from both data sources, hence augmenting the validity and credibility of the study (Wulan et al., 2019). Descriptive statistical analysis is a suitable and commonly used method in recent MALL research as it enables researchers to systematically summarize learners' attitudes (Darsih and Asikin 2020).

3. Findings and Discussion

A Likert-scale questionnaire was employed to collect quantifiable data regarding students' perceptions of Duolingo's efficacy in improving their reading comprehension. 15 statements covering four aspects were included in the instrument: comparison with traditional learning, motivation and engagement, perceived effectiveness, and usage in reading activities. Students' perceptions of Duolingo as an ICT-based learning tool are highlighted by the

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descriptive results, which are displayed as percentages and show general response tendencies. The following tables present a thematic organization of the findings and a discussion of each dimension.

Table 1: Students' Use of Duolingo in Learning Reading

Questions	N	Minimum	Maximum	Mean	Std. Deviation
Q1	54	1	4	2.94	.811
Q2	54	1	4	3.37	.653
Q3	54	1	4	3.13	.802
Valid N (listwise)	54				

As presented in Table 1, the mean scores varied from 2.94 to 3.37, indicating that students generally held positive views regarding the use of Duolingo for reading activities. The highest mean score (M = 3.37, SD = 0.65) for "I find Duolingo easy to use, whether on my phone or computer" indicates that accessibility and simplicity were significant factors influencing positive attitudes. The statement "I enjoy using Duolingo to learn English" (M = 3.13, SD = 0.80) also indicates that the gamified design makes the learning process fun for most students. The mean score of 2.94 (SD = 0.81) for "I use Duolingo to practice reading," on the other hand, shows that some students were less likely to use Duolingo for regular reading practice. This could be because they saw it as an extra tool instead of a main reading platform. In general, students thought that simplicity of use and enjoyment were more important than consistent reading engagement.

Table 2: Perceived Effectiveness of Duolingo in Improving Reading Skills

Questions	N	Minimun	Maximum	Mean	Std. Deviation
Q 4	54	1	4	3.09	.680
Q 5	54	1	4	3.15	.684
Q 6	54	1	4	3.02	.835
Q 7	54	1	4	2.85	.960
Valid N (listwise)	54				

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As presented in Table 2, the average scores varied from 2.85 to 3.15, suggesting that students regarded Duolingo as moderately helpful in supporting reading comprehension. The highest mean score (M = 3.15, SD = 0.68) for "Duolingo helps to improve reading skills" indicates that students acknowledged its role of improving vocabulary and comprehension awareness, although not necessarily achieving mastery. The lowest score (M = 2.85, SD = 0.96) for "Duolingo helps improve comprehension accuracy" shows that students have different opinions about the app's reading content. Some students might believe that it is too limited or simple. These results show that most learners enjoyed Duolingo's motivational features, but they thought its academic content was average and not enough to replace understanding education in the classroom.

Table 3: Motivation and Engagement

Questions	N	Minimum	Maximum	Mean	Std. Deviation
Q 8	54	2	4	3.46	.539
Q 9	54	1	4	3.26	.620
Q 10	54	1	4	2.89	.769
Q 11	54	2	4	3.19	.552
Valid N (listwise)	54				

As presented in Table 3, the mean values ranged from 2.89 to 3.46, indicating generally positive perceptions of motivation and engagement when using Duolingo. The assertion that "Duolingo is an accessible platform for learning English" obtained the highest mean score (M = 3.46, SD = 0.54), indicating that simplicity of access and self-directed learning significantly contributed to students' enthusiasm. The statement "Reading practice with Duolingo is enjoyable" (M = 3.26, SD = 0.62) suggests that the majority of students associate enjoyment with the app's interactive and gamified features. The lowest score (M = 2.89, SD = 0.77) for "I feel more motivated to learn English reading when I use Duolingo" indicates that not all learners had sustained motivation, potentially due to the app's absence of direct interaction or

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teacher support. This pattern shows that students see Duolingo as a motivating tool, but their motivation may change if they fail to collaborate together or receive support from a teacher.

Table 4: Learning Attitudes and Comparison with Traditional Learning

Questions	N	Minimum	Maximum	Mean	Std. Deviation
Q 12	54	1	4	3.04	.672
Q 13	54	1	4	3.09	.652
Q 14	54	1	4	2.61	.738
Q 15	54	1	4	2.50	.694
Valid N (listwise)	54				

As presented in Table 4, the average scores ranged from 2.50 to 3.09, indicating varied perceptions regarding learning with Duolingo in comparison to traditional instruction. The highest mean score (M = 3.09, SD = 0.65) for "Duolingo allows me to become more active and proficient in using English" indicates that students appreciated its interactive and self-directed learning environment. In contrast, lower means (M = 2.61 and 2.50) suggest that some learners were skeptical of Duolingo's ability to substitute classroom instruction, highlighting the significance of teacher feedback and more profound comprehension activities. The results indicate that while learners valued Duolingo's accessibility and autonomy, they regarded it mostly as an adjunct to formal reading instruction rather than a replacement.

Across all dimensions (Q1–Q15), the mean scores varied from 2.85 to 3.46, reflecting an overall moderately positive perception. Students consistently appreciated Duolingo's accessibility, expediency, and engaging interface; however, their responses also indicated concerns regarding its academic depth and feedback systems. Lower or neutral mean scores indicate a prudent perspective students found Duolingo entertaining and positive yet preferred structured classroom environments for deeper comprehension and instructor support. The

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results affirm that perceptions of Duolingo are generally positive, though moderated by a critical understanding of its educational constraints.

These findings indicate that although Duolingo is widely recognized as a useful ICT-based learning tool, it serves optimally as a supplementary medium rather than a substitute for in-person education. Qualitative data were gathered through semi-structured interviews to obtain an in-depth understanding of students' experiences and attitudes, clarifying their perceptions of the benefits, obstacles, and overall impact of Duolingo on their reading comprehension process. The outcomes of these interviews are presented in the following section.

Table 1 Interview Results Percieved Ease

Question	Theme	Answer
I state that doing English reading exercises becomes easier for me after learning through Duolingo. Please share your opinion on this.	Duolingo facilitates ease of English reading through gamification, repetition, and simple learning materials	From my experience, this statement is really true. Because of learning through Duolingo, we have a gamification system. So, it is more interesting; the longer it takes, the more challenging it is. **(R1)**
		In my opinion, in Duolingo, there are many features that can help me learn, from reading exercises to listening exercises **(R2)**
		I agree, because in Duolingo, there are repetitions every day. So, it is more consistent. **(R3)**
		In my opinion, because of Duolingo, there is a feature called Reading Passage. Reading in Duolingo is like a game. **(R4)**
		It really helps. Because in Duolingo, the material is light and for everyday life. **(R5)**

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The results presented that Duolingo perceived familiarity and ease in English reading tasks through gamified learning, diverse features, and regular repetition. Students highlighted that the straightforward and repetitive design diminished reading apprehension and rendered practice more attainable. However, certain responses indicated that the content's simplicity constrains profound understanding, implying that the perceived ease primarily signifies comfort and enjoyment rather than measurable increase in reading skills.

Table 2 Interview Results on Students' Perceptions

Question	Theme	Answer
I believe that Duolingo is a fun and interesting platform for learning English through reading. Please share your opinion about it.	Duolingo as a fun and interactive platform for learning English through reading	The gamification system, where you have to line up the words. It really helps me. **(R1)**
		Because in Duolingo itself, there are many features for young people. Starting from group activities, group activities with friends, and then there are also games in Duolingo. **(R2)**
		It is interesting because Duolingo has many features. For example, there are medals, awards, and strikes. **(R3)**
		I think Duolingo is like an application for learning English, but usually for kids. In my opinion, this application is like a game. **(R4)**
		In Duolingo, there are characters and games, so it is interesting to learn English because we learn and enjoy at the same time. **(R5)**

The results presented that Duolingo's visual design and gamified features were fundamental to its positive perception. Students valued medals, streaks, and group features as sources of immediate motivation. Nevertheless, some participants regarded the interface as "child-like," suggesting that their engagement may be driven more by entertainment than by academic challenge. Therefore, students' positive perceptions indicate affective engagement rather than a profound cognitive understanding in reading comprehension.

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Table 3. Interview Results Students' Motivation for English Reading

Question	Theme	Answer
I feel more motivated to learn English reading when I use Duolingo than learning without using it	Increased motivation to learn English reading through Duolingo	Because the system helps me. Not only English, but also other languages. **(R1)**
		For me, I'm more excited because many of my friends also have an application like mine. So, because of many of my friends, I'm more motivated to learn through that application. **(R2)**
		I feel motivated because Duolingo is different from class. It is not like studying in class, but more like playing an educational game. **(R3)**

The results presented that Duolingo heightened perceived motivation for reading English through social and gamified elements. Students indicated heightened enthusiasm while engaging in collaborative learning with peers and receiving progress incentives. This motivation was predominantly situational and extrinsic, fueled by social comparison and game rewards rather than intrinsic reading desire. This indicates that Duolingo increases engagement through perceived enjoyment, rather than fostering long-term drive for reading growth.

Table 4. Interview Results of The Benefits of Using Duolingo

Question	Theme	Answer
I can describe the benefit of using Duolingo to learn English.	Perceived benefits of using Duolingo in learning English	It also increases our vocabulary and listening. It also teaches us languages, not only English. **(R1)**
		So, in Duolingo itself, there are many benefits. For example, if we use that application, we can enrich our vocabulary, feel the ability to read, listen, and so on. **(R2)**
		I can learn some basic vocabulary. Also, my listening, speaking, and

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		reading skills are gradually improving. **(R3)**
		The benefit is that we learn the word structure. So, if we put the grammar wrong, we can fix it with Duolingo, the Duolingo system. Even though it looks very basic, it helps me to learn the word structure in reading. **(R4)**
		There is a repetition method, so we remember it gradually and continuously. **(R5)**

Participants identified a variety of perceived advantages, including enhancements in vocabulary, reading comprehension, and listening skills. These perceptions originate from the multimodal exposure facilitated by Duolingo's short, repetitive exercises. Nonetheless, learners' remarks indicated that these advances were fundamental and self-reported, implying a sense of progress rather than verifiable accomplishment. As a result, the perceived benefits of Duolingo are highest in core vocabulary and reading familiarity, rather than higher-order comprehension skills.

Table 5. Interview Result on Disadvantages of using Duolingo

Question	Theme	Answer
I acknowledge that there are some disadvantages to using Duolingo to learn English.	Perceived limitations of Duolingo in English learning	The weakness is that the context is too basic. Also, the correction in Duolingo only tells me where I'm wrong. It doesn't explain why I'm wrong. **(R3)**
		The weakness is that the language is too basic. **(R4)**

While students recognized the utility of Duolingo, they consistently identified limitations regarding the profundity of content and the quality of feedback. Respondents perceived that the corrections were deficient in explanatory feedback, thereby restricting avenues for more

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profound learning. These reflections underscore students' recognition that while Duolingo's simplicity can be motivating, it does not adequately facilitate complex reading comprehension. Therefore, the perception of efficacy exists alongside an acknowledgment of its pedagogical limitations. Overall, the interview findings indicate that students regard Duolingo as an engaging and easily accessible platform that effectively supports English reading practice, mainly through its gamified and repetitive structure. Nonetheless, their perceptions also reveal a disparity between enjoyment and the profundity of learning where motivation and convenience are prioritized over critical understanding. The qualitative themes complement the survey data by demonstrating that positive perceptions do not inherently equate to perceived effectiveness but rather indicate how technology influences learners' engagement and expectations in reading activities.

The results of this study demonstrated that Duolingo significantly had a positive perception of using Duolingo as an ICT-based tool to support English reading comprehension. The quantitative and qualitative findings demonstrated that student viewed Duolingo as easy to use, accessible, and beneficial to improve their language learning experience (Hidayat, 2025). However, certain perceived limitations were recognized, particulary concerning the basic level of content and the lack of extensive feedback. (Dhiyaushshafa & Djuharie, 2025). The questionnaire data revealed that the majority of students agreed that Duolingo increased reading practice, raised motivation, and made the learning process more engaging. This supports the findings of previous research, which indicated that gamification elements such a points, badges, and streaks, augment students' motivation and enjoyment in language learning (Zhou, 2024; Laksanasut, 2025; Gragera, 2024). The interactive and mobile characteristics encouraged flexibility in learning and accessibility, aligning with Irzawati and Unamo (2023) findings that mobile applications facilitate ongoing education outside the classroom. Students perceived that Duolingo support their reading comprehension by facilitating vocabulary acquisition and understanding through repetition and adaptive feedback. The results align with the findings of (Elshahawy, 2020). and (Liunokas, 2025), which indicated that Duolingo's multimodal design,

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integrating text, pictures, and audio, improves learners' reading comprehension and motivation. Similarly, the enjoyment and constant engagement identified in this study align with the findings of (Fadhilah, 2025; Ouyang et al., 2024), who indicated that Duolingo fosters learners' motivation and autonomy through an interactive and self-directed learning experience.

The qualitative findings further supported the quantitative trends. Interview data indicated that learners such as Duolingo's continual learning cycle, engaging interface, and feedback systems, which encouraged a perception of advancement and proficiency (Yang & Ying, 2025) This is consistent with Kamsik et al., 2023; Sakkir & Syamsuddin, 2023, who highlight that gamified applications improve student persistence and engagement via continuous feedback and goal-oriented design. The platform's ability to promote daily practice aligns with the findings of Malika et al. (2025), who stressed that regular participation in digital learning encourages learner autonomy and discipline. However, several problems were identified. Participants stated that Duolingo's feedback lacked in-depth explanations and that the content provided was overly simplistic for advanced learners. (Shortt et al., 2021) found that limited communicative interaction and repetitive exercise structures can make it harder to learn advanced skills. This is in line with what they found. (Pikhart et al., 2024) say that not providing contextual explanations can also make it harder for students to really understand the language context.

In summary, the quantitative and qualitative results indicated that Duolingo boosted learners' engagement and motivation, although it served more effectively as a supplementary tool than as an alternative for classroom instruction.(Suherman et al., 2024) The findings verify the perspective of Irzawati, (2023) and Malika et al. (2025). The integration of Duolingo with teacher assistance provides a balanced methodology that optimizes both digital and human engagement (Manes et al., 2025). Consequently, it might be inferred that Duolingo is important in improving reading comprehension and motivation, yet its optimum efficacy is dependent upon its incorporation into comprehensive educational frameworks (Istighfaroh, 2025)

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4. Conclusion

This study explored students perceptions of Duolingo, as an ICT-based language learning tool, positively affected students' reading comprehension, motivation, and engagement. Quantitative data revealed that the majority of students viewed the application as user-friendly, accessible, and beneficial in supporting English reading comprehension. The incorporation of gamified elements such as points, rewards, and repetition cycles effectively sustained learners' engagement and consistency in English practice. Students also valued its adaptability and capacity to foster independence in learning. However, this study was constrained by its perception-based methodology and a relatively small sample size of 54 participants, which reduces the broader applicability of the results. The study did not assess actual gains in reading comprehension but instead focused on students' perceptions of Duolingo's influence on their learning process. From a pedagogical perspective the data suggest that Duolingo can be used as an additional tool to improve reading practice and learner engagement, especially when combined with teacher guidance and classroom activities. Future studies may utilize experimental or longitudinal methodologies to assess the quantifiable effects of Duolingo on reading proficiency and to investigate its influence across various learner levels or areas of skill.

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