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University Students' Perceptions of Duolingo as a Gamified Tool for English Vocabulary Learning

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Abstract

This study examines university students' impressions of Duolingo as a gamified tool for improving English vocabulary acquisition. This study used a mixed-method methodology, integrating quantitative data from 58 first-semester students at Universitas Muhammadiyah Kalimantan Timur with qualitative insights derived from five interviews. The study seeks to examine Duolingo's impact on vocabulary acquisition, learner motivation, and autonomous learning. Findings suggest that students predominantly view Duolingo as stimulating and beneficial for vocabulary acquisition, facilitated by its interactive elements like points, streaks, and prompt feedback. Nonetheless, constraints were observed, including reliance on the internet, restricted classroom integration, and insufficient teacher engagement. Although Duolingo seems to promote motivation and autonomous learning, its effect on vocabulary acquisition is contingent upon context. These data indicate that Duolingo serves more effectively as an ancillary learning resource rather than a substitute for classroom education.

Keywords: Duolingo, gamification, learner motivation, mobile-assisted language learning, vocabulary learning.

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1. Introduction

English has become a worldwide language and functions as the primary medium of international communication across different sectors, including business, education, science, and governance (Xhemaili, 2022). The global prevalence of English has enhanced intercultural comprehension, academic cooperation, and international knowledge transfer, becoming English literacy a crucial competency in contemporary society (Ashrafova, 2025). Vocabulary knowledge, a fundamental aspect of language competence, significantly influences students' capacity to understand, communicate, and articulate ideas proficiently in English (Rosyada-AS & Apoko, 2023). Recent studies indicate that English literacy, particularly vocabulary mastery,

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is crucial for facilitating global involvement and interdisciplinary communication (Arbain & Nur, 2017; Praditha & Nur, 2019; Jamiluddin, 2025).

Notwithstanding its significance, numerous university students continue to have challenges in acquiring and keeping English vocabulary (Idayani & Sailun, 2024). These hurdles encompass spelling errors, pronunciation issues, and ambiguity about numerous word meanings, frequently resulting in miscommunication and misuse (Hasan, 2024 ; Rohmatillah, 2015). Moreover, pupils' inadequate use of efficient memorizing strategies and inconsistent practice lead to insufficient vocabulary retention and diminished long-term memory (Rosyada-AS & Apoko, 2023) . The persistent challenges underscore the necessity for more engaging, effective, and technology-enhanced methodologies to enhance vocabulary acquisition among EFL learners (Arbain & Rohman, 2023; Keristiana et al., 2019; Afzal, 2019). This viewpoint is substantiated by recent research indicating that numerous EFL learners encounter difficulties in keeping new vocabulary due to insufficient exposure and ineffective practice tactics, highlighting the necessity for innovative and engaging learning aids (Merilia et al., 2019; Alim et al., 2025).

In recent years, the use of digital learning tools has garnered considerable focus in English language teaching. The progression of educational technology has created numerous applications that enhance vocabulary acquisition beyond conventional (Ajisoko, 2020; Nasution & Daulay, 2024). Duolingo has emerged as one of the most popular and accessible mobile programs, attributed to its gamified learning environment that incorporates elements such as points, streaks, and levels to augment learner motivation and engagement (Arbain et al., 2017; Gracella & Rahman Nur, 2020; Purwanto, 2023). Platforms such as Quizlet, which utilizes digital flashcards and quizzes, have demonstrated efficacy in enhancing memory and vocabulary retention (Nur, 2020; Pham, 2022 ; Boroughani et al., 2023). Recent studies substantiate this assertion, demonstrating that gamified and app-based technologies such as

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Duolingo and Quizlet significantly improve learner engagement and vocabulary acquisition in comparison to conventional classroom techniques (Pramesti et al., 2025).

Students frequently regard these applications as engaging, intuitive, and conducive to self-directed learning (Tamara & Widyastuti, 2025 ; Purwanto, 2023). Empirical research has shown that gamified learning tools like Duolingo enhance student motivation, engagement, and vocabulary acquisition through interactive feedback and repetitive learning cycles (Safrina et al., 2024 ; Santi et al., 2023). The incorporation of visual, auditory, and interactive exercises in Duolingo enhances vocabulary retention and facilitates its application in real-life scenarios (Intan & Rahayu, 2024 ; Nurhayati & Suryaman, 2024 ; Mujiarni, 2024 ; Mayangsari et al., 2022). Recent data indicate that learners regard Duolingo as a motivating and fun tool that enhances vocabulary knowledge through active involvement and multimodal learning activities (Jamiluddin, 2025).

However, studies have identified specific drawbacks of these apps, such as reliance on stable internet connectivity, restricted integration with classroom education, and diminished chances for teacher-student contact (Boroughani et al., 2023 ; Tamara & Widyastuti, 2025). Notwithstanding these limitations, Duolingo is esteemed as an ancillary resource that fosters student independence and enhances motivation for vocabulary acquisition (Nurhayati & Suryaman, 2024 ; Pramesti et al., 2025). This assertion is further substantiated by recent studies indicating that although Duolingo cannot entirely supplant traditional instruction, it significantly enhances classroom learning by fostering learner autonomy and sustained engagement (Andira et al., 2025).

This study is to investigate university students' impressions of utilizing Duolingo for enhancing their English vocabulary learning at Universitas Muhammadiyah Kalimantan Timur. This research, based on previous theoretical and empirical studies, aims to discover how Duolingo facilitates vocabulary acquisition and evaluates its perceived benefits and drawbacks in an EFL university context (Cahyoningtyas, 2024). The research aims to tackle

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two primary inquiries: What are university students' views on utilizing Duolingo for the acquisition of English vocabulary? What are the perceived benefits and drawbacks of utilizing Duolingo as a vocabulary learning tool in higher education? This emphasis corresponds with previous studies highlighting the significance of examining students' viewpoints on digital vocabulary acquisition to comprehend how applications such as Duolingo facilitate language learning and motivation in EFL contexts (Alim et al., 2025).

2. Review Method

This study utilized a mixed-method approach that combined quantitative and qualitative methodologies to thoroughly investigate university students' impressions of Duolingo in English vocabulary acquisition. The mixed design was used to acquire both quantifiable trends and profound insights into student experiences, so assuring a comprehensive understanding of how Duolingo facilitated vocabulary growth and learner motivation (Afzal, 2019 ; Purwanto, 2023 ; Nurhayati & Suryaman, 2024).

2.1 Participants and Instruments

The quantitative phase included fifty-eight first-semester students at Universitas Muhammadiyah Kalimantan Timur who completed a twenty-item Likert-scale questionnaire assessing motivation, engagement, and perceived effectiveness of Duolingo as a gamified learning tool (Pham, 2022 ; Boroughani et al., 2023). To enhance the quantitative results, qualitative data were collected via semi-structured interviews with five purposefully chosen participants, facilitating a more nuanced comprehension of their individual learning experiences and perceived benefits or obstacles in utilizing Duolingo (Ajisoko, 2020 ; Tamara

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& Widyastuti, 2025). All tools were evaluation by language education specialists to guarantee content validity, and ethical standards were maintained during data collection.

2.2 Data Analysis

Quantitative data were analyzed via descriptive statistics to ascertain frequencies and percentages indicative of overarching trends in learner motivation and vocabulary advancement (Kaya, 2021), while qualitative responses underwent thematic analysis to uncover recurring motifs pertaining to engagement, retention, and learning obstacles (Santi et al., 2023 ; Mayangsari et al., 2022).

This amalgamation of statistical and thematic findings produced a thorough and nuanced comprehension of both the collective and individual viewpoints regarding Duolingo's efficacy in promoting vocabulary acquisition among university students.

3. Findings and Discussion

The quantitative results indicated predominantly favorable student opinions of Duolingo as a vocabulary acquisition tool. Of the 58 responders, more than 80% concurred that Duolingo enhanced their interest and motivation to learn English. Students indicated that Duolingo's gamified elements such as experience points, advancement levels, and reward badges enhanced their engagement and rendered vocabulary drill more pleasurable, with numerous learners affirming that these aspects positively influenced their educational experience (Kamsik & Daud, 2023). Several students indicated that they infrequently utilized community features and encountered difficulties accessing the app in the absence of an internet connection (Deris & Shukor, 2019). The quantitative results encapsulate students' responses to the questionnaire, which assessed their interest, motivation, engagement, and difficulties in utilizing Duolingo for

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English vocabulary acquisition. The results are displayed in the subsequent tables (World & Journal, 2023).

Table 4.1. Students' Interest in Using Duolingo

No	Statement	Total Score (S)	Max Score (N)	Percentage
1.	Students' interest in studying English can be increased by using the Duolingo app.	193	232	83%
2.	The Duolingo app's lesson features improve your comprehension of English.	195	232	84%
3.	After every practice, Duolingo enables you to swiftly fix errors.	193	232	83%
4.	The Duolingo app's features and components don't do anything to enhance your educational experience.	108	232	47%
5.	You frequently learn English using the Duolingo app.	158	232	68%
6.	The Duolingo app has made learning English simpler.	196	232	84%

Table 4.1, a significant proportion of students expressed a keen interest in utilizing Duolingo for English language acquisition, with 83% indicating that it enhanced their motivation and 84% concurring that its functionalities facilitated a better comprehension of English lectures. The results demonstrate that Duolingo's interactive design, characterized by immediate feedback and repetition, facilitated autonomous learning and regular practice. The results align

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with (Nurhayati & Suryaman, 2024), who highlighted that repetition and contextual learning enhance language retention and understanding.

Table 4.2. Students' Motivation and Engagement

No	Statement	Total Score (S)	Max Score (N)	Percentage
7.	Duolingo's elements like points, levels, and challenges are useful for language learning.	195	232	84%
8.	Using the Duolingo app increases your enthusiasm for learning.	185	232	80%
9.	The Duolingo app's adaptability and ease of use encourage you to keep using it to learn English.	185	232	80%
10.	You hardly ever use Duolingo's community features, such as study groups and forums.	169	232	73%
11.	You believe that Duolingo's challenges and incentive badges impact how frequently you use the app.	176	232	76%
12.	You have used every feature that Duolingo app has to offer.	142	232	61%

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Table 4.2 demonstrates that Duolingo effectively sustained participants' enthusiasm and engagement. Approximately 84% of students reported that gamified elements, including challenges and levels, enhanced their learning tenacity, while 80% indicated that the app's accessibility promoted consistent practice. Nevertheless, merely 61% indicated utilization of all accessible features, while 73% infrequently engaged in community activities, demonstrating selective involvement. This indicates that while Duolingo efficiently facilitates autonomous learning, it serves mainly as an adjunct tool rather than a substitute for classroom instruction (Suryanto, 2024).

Table 4.3. Students' Vocabulary Improvement

No	Statement	Total Score (S)	Max Score (N)	Percentage
13.	I can quickly study English vocabulary at home with Duolingo.	187	232	81%
14.	I can learn new vocabulary by using Duolingo.	187	232	81%
15.	Using Duolingo to learn aids in my deeper comprehension of the subject matter.	177	232	76%
16.	I can use my English language abilities in daily life thanks to Duolingo.	180	232	78%

Table 4.3 illustrated that Duolingo facilitated significant vocabulary enhancement. Eighty-one percent of participants reported that they could effortlessly study language at home via the app, whereas 78% indicated that they could incorporate new terminology into everyday conversations. These findings validate that Duolingo promotes vocabulary retention and

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practical application, aligning with (Mujiarni, 2024), who discovered that multimedia learning improves understanding and confidence via contextualized examples and feedback.

Table 4.4. Duolingo's Disadvantages and Challenges

No	Statement	Total Score (S)	Max Score (N)	Percentage
17.	Duolingo in learning English is boring.	114	232	49%
18.	Duolingo is not as helpful for classroom instruction.	121	232	52%
19.	Using Duolingo without an internet connection is challenging.	189	232	81%
20.	I find it challenging to acquire English vocabulary using Duolingo.	105	232	45%

Table 4.4 highlighted several limitations. Around 49% of students occasionally found Duolingo monotonous, and 52% thought it was less effective for classroom use. The majority (81%) identified internet connectivity as a major obstacle, and 45% admitted difficulty in mastering vocabulary using the app alone. This aligns with (Cahyoningtyas, 2024), who noted that MALL tools like Duolingo are most effective when used as complementary aids rather than replacements for teacher-guided instruction.

The results also disclosed other drawbacks linked to the utilization of Duolingo. Certain students expressed sentiments of tedium and restricted classroom applicability, while others noted technological impediments, including unreliable internet connectivity and challenges in acquiring language exclusively through the application. Despite the flexibility, accessibility, and incentive provided by mobile learning platforms like Duolingo, infrastructural limits and pedagogical constraints persistently hinder their efficacy as a complete alternative to teacher-

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led education (Bastian, 2025 ; Future et al., 2025). These constraints underscore that technology ought to serve as an auxiliary instrument rather than a complete substitute for conventional classroom education, aligning with prior studies that underscore the necessity for teacher mediation and the integration of blended learning (Deris & Shukor, 2019 ; Boroughani et al., 2023).

Table 4.5.1. Gamification Features and Motivation

Question	Theme	Feedback
Do the gamification features and interactive approach used by the app make learning more interesting and challenging, thereby increasing your motivation to learn?	Duolingo's interactive features, creative animations, and reward systems increase learning motivation.	"The interesting features in Duolingo really motivate me, and I always feel challenged to finish each level". (R1) "I enjoy using Duolingo because it has fun and creative animated characters". (R2) "The streaks and medals make me feel more motivated and excited to keep learning on Duolingo". (R3)

Interview data indicated that gamification components such as levels, streaks, and reward systems substantially improved learner motivation. Participants articulated how visual incentives and imaginative animations cultivated enjoyment and persistence in vocabulary exercises. These findings correspond with quantitative results demonstrating elevated

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engagement levels, reinforcing the notion that gamification facilitates ongoing learning through enjoyment and challenge (Kuantitatif, 2025).

Table 4.5.2. Repetition and Vocabulary Retention Question

Question	Theme	Feedback
Does the use of repetition and various practice methods in Duolingo help you strengthen your memory of new vocabulary, thereby enriching your vocabulary?	Repetition facilitates memory and reinforces vocabulary retention.	"The repetition feature helps me remember vocabulary that I had forgotten". (R1) "I do not use the repetition feature much because I usually go straight to the next level". (R3)

Repetition was recognized as a vital element in enhancing language recall and retention. Numerous learners utilized the feature to consolidate prior knowledge, affirming that repeated exposure enhances long-term retention and mitigates forgetting (Dağdeler, 2023). Nonetheless, individual differences were apparent, as several participants favored rapid progression through levels with minimal evaluation. This illustrates varying learner techniques in self-paced

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settings, corroborating (Mujiarni, 2024) findings that repetition improves results only when applied consistently.

Table 4.5.3. Effectiveness of Duolingo's Teaching Method

Question	Theme	Feedback
Does Duolingo's teaching method, which emphasizes repetition and the application of vocabulary in context, support the effectiveness of your learning?	Creative and engaging repetition improves learning outcomes.	"I think the repetition feature in Duolingo is effective because it is designed in a creative and engaging way". (R1) "The repetition feature really helps me remember the material because I use it regularly''. (R2)

Participants indicated that Duolingo's pedagogical method incorporating repetition and contextual vocabulary application was effective and interesting. The design of creative tasks, provision of quick feedback, and use of contextual examples improved comprehension and

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retention, aligning with previous research that underscores the significance of contextualized practice for vocabulary acquisition (Studi et al., 2024 ; Nurhayati & Suryaman, 2024)

Table 4.5.4. Vocabulary Relevance to Classroom Learning Question

Question	Theme	Feedback
Do you find it difficult to learn when the vocabulary in Duolingo does not match the material in class, causing cognitive load and reducing the effectiveness of learning?	Duolingo supports foundational vocabulary and aids comprehension of classroom materials.	"No, because Duolingo helps me understand general and basic vocabulary''. (R1) "No, because I find Duolingo helpful as a tool for basic learning". (R4) "I do not find it difficult because Duolingo has helped me build a good basic understanding of the lessons." (R5)

The majority of students reported that Duolingo enhanced their understanding of fundamental language pertinent to classroom resources. The software enhanced their basic language skills, hence aiding comprehension of more sophisticated themes instead of producing confusion. This aligns with the conclusions of (Purwanto & Syafryadin, 2023), who

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posited that Duolingo functions optimally as a preparation resource for fundamental learning rather than as a substitute for formal classroom education.

Table 4.5.5. Application of Vocabulary in Daily Life

Question	Theme	Feedback
How does Duolingo help you remember and use new vocabulary in everyday conversation?	Duolingo improves learners' ability to recall and use vocabulary in daily communication.	"Duolingo helps me memorize many new vocabulary words and understand sentence structures used in everyday conversations." (R4) "The repetition feature really helps me in daily life because it makes it easier to remember different vocabulary words." (R5)

Interview responses indicated that Duolingo enhanced learners' capacity to remember and utilize new language in practical communication. Students indicated that the app's repetition functionalities and contextualized practice facilitated natural memory and enhanced confidence in utilizing English for daily conversations. These observations substantiate the notion that mobile-based vocabulary acquisition can connect classroom education with actual communication, as indicated by (Pramesti et al., 2025).

The quantitative and qualitative findings obtained indicate that Duolingo proficiently facilitates vocabulary development and enhances learner motivation. The quantitative results indicated that gamified components like points, badges, and levels promoted students' enjoyment and engagement, whilst qualitative insights demonstrated that repetition, fast feedback, and visual aids improved vocabulary recall and contextual comprehension. These findings correspond with previous research that has highlighted the significance of gamification in enhancing motivation and perseverance in language (Safrina et al., 2024). Research conducted by (Nurhayati & Suryaman, 2024) demonstrated that repeated exposure and contextualized activities markedly enhance learners' comprehension and retention,

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whereas (Nurhayati & Suryaman, 2024), emphasized that multimedia components such as audio, visuals, and interactive quizzes improve educational outcomes. Consistent with the findings of (Boroughani et al., 2023), the present study likewise revealed difficulties including internet dependency, insufficient classroom integration, and inconsistent utilization of interactive elements. These limitations indicate that although Duolingo is very effective as a supplementary tool to promote independent learning, it should not function as

sole substitute for teacher-led training. Its optimal impact is seen when combined with organized classroom techniques that enhance contextual learning and continuous engagement.

5. Conclusion

This study determined that Duolingo is an excellent and interesting additional resource for English vocabulary acquisition among first-semester students at Universitas Muhammadiyah Kalimantan Timur. The quantitative results indicated that the majority of students held favorable views of Duolingo, notably valuing its gamified elements such as streaks, badges, and levels, which enhanced motivation and maintained their learning engagement (Kamsik & Daud, 2023 ; Suryanto, 2024)The qualitative findings corroborated this, indicating that students regarded Duolingo's repetition, visual reinforcement, and quick feedback as beneficial for enhancing vocabulary retention and confidence in practical application (Pramesti et al., 2025 ; Purwanto, 2023).

This mixed-method study, by merging quantitative and qualitative data, offered a thorough knowledge of the impact of gamified mobile applications on vocabulary acquisition. The integration of quantitative trends and interview narratives indicated that gamification enhances learner autonomy, encourages regular practice, and corroborates earlier research on the motivational advantages of mobile-assisted learning (Safrina et al., 2024 ; Puspita et al.,

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2025). These findings underscore the educational potential of Duolingo as a conduit between conventional classroom instruction and autonomous learning.

Nonetheless, the results also disclosed specific limits. Students indicated technological limitations, including reliance on internet connectivity and insufficient depth of interaction or contextual integration in classroom environments (Bastian, 2025 ; Boroughani et al., 2023). Consequently, although Duolingo significantly boosts motivation and vocabulary acquisition, it ought not to supplant teacher-led education. Rather, it ought to serve as an adjunct to structured educational activities that promote enhanced cognitive engagement and communication skills development. In summary, Duolingo significantly aids vocabulary acquisition and learner motivation through its gamified elements, although its full efficacy is achieved when combined with classroom instruction and pedagogical support. Future research may investigate hybrid methods that integrate mobile gaming with collaborative or instructor-led learning to enhance vocabulary retention and learner autonomy.

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