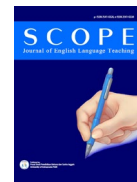




SCOPE

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Review

The Influence of Duolingo Application in Improving Vocabulary: A Literature Review

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A B S T R A C T

Duolingo is an application that can be utilized to enhance person's understanding of the English language. It assists learners in improving their English vocabulary. Additionally, it has the potential to engage and captivate students in the learning process. The aim of this systematic review is to investigate the impact and influence of the Duolingo application on students' English language acquisition. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines, a systematic review was conducted utilizing an extensive collection of literature and database sources, such as ProQuest, Science Direct, Google Scholar, and Google Searching. The result of the study indicated that students' English vocabulary mastery was enhanced through the use of Duolingo applications.

INTRODUCTION

In the current era of globalization, technological advancements have permeated every facet of human existence, from the smartphone that facilitates communication and information gathering to the automaton that assists physicians (Rosyidah et al., 2023). An element that emerges as a result of technological advancement is gamification. "Gamification" was coined in 2002 by Nick Pelling, an English programmer. At the outset, gamification encountered resistance from others due to its perception solely as an instrument for games. However, gamification in the education sector began to emerge in 2010 (Luo, 2022). A gamification is an approach to solving non-game problems through the use of video games or game elements in order to motivate students to appreciate specific subject matter during the

learning process and increase their achievement levels (Khaleel et al., 2020).

The rapid advancement of technologies has yielded numerous advantages for education, culminating in the development of what is presently referred to as "Educational Technologies.". According to Tiara et al. (2021), Language and technology have maintained an intricate interconnection since the inception of writing approximately 5000 years ago. Additionally, technology advances in marketing education and practice. For example, Sidik and Syafar (2020) stated that the Internet has experienced exponential growth in recent years. In addition, Naismith and Tiara et al. (2021) connectivity, ownership, and access to technology are critical success factors for mobile learning integration in higher education.

Technology has been employed as a method to enhance teaching and learning techniques, which teachers may

utilize (Haleem et al., 2022). The teacher should utilize technology to aid in the teaching and learning of English, particularly when it comes to the instruction of English vocabulary. A student-acceptable interactive learning environment requires integrating technology into the English-learning process. The majority of them possess a wide range of technological knowledge, including devices, applications, and social media platforms; therefore, they can readily adopt the concept of collaborating with them for educational objectives (Tiara et al., 2021a). Technology is an intrinsic component of daily existence; therefore, it is time to reconsider how technology should be incorporated into the curriculum and how it can be utilized to enhance the learning experience. As a result, technology becomes an essential component of the educational process and a substantial concern for instructors, encompassing everything from the design of learning environments to the actual teaching and learning activities (Núñez-Canal et al., 2021).

Gamification implemented in the educational sector typically takes the form of a game application (Maryati, 2013). Duolingo App is one application that implements gamification. Duolingo is an application utilized by students to learn specific languages. It comprises a variety of materials, including phrases, nouns, and verbs, and offers multiple language modes from which they may select, including English, Arabic, Spanish, or French (Ajisoko, 2020). The purpose of the Duolingo App is to assist students in improving their motivation and performance when learning a language, particularly English (Teske, 2017). Duolingo offers several functionalities that align with gamification principles to facilitate English language learning for its users. These include ranks, levels, points, a leaderboard, a progress indicator, and gifts (Purwanto et al., 2022).

English teaching and learning activities may be facilitated by a variety of technologically based educational game applications. Support for learning has been increasingly evident in educational games in recent years. In light of the Purwanto et al. (2022), The activities have several benefits, including the promotion of communicative competence and the encouragement of spontaneous and creative language usage. Furthermore, it is sufficient to foster learner-centeredness and enhance motivation in order to assist students in enhancing their English proficiency beyond the confines of the classroom (Tiara et al., 2021b).

Duolingo is one application that can be utilized to enhance a person's understanding of the English language. Duolingo is an application available for free download on various devices, including laptops, smartphones, and websites. It facilitates the expansion of

students' English vocabulary. Subsequently, assist pupils in specializing their efforts to acquire English vocabulary. Active student engagement and attraction are additional benefits of this learning method. Drawing from personal experience, victimization-based learning It is noteworthy that Duolingo facilitates English learning. The exceptional learning methods of the Duolingo application are a direct consequence of its innovative learning system. This application potentially generates interest in learning by integrating teachings with games. Furthermore, Duolingo integrates visual and auditory elements, and furthermore, poses inquiries that amusingly encompass vocabulary and synchronic linguistics.

The purpose of this systematic review is to present a comprehensive summary of research that has been dedicated to Duolingo as a medium for enhancing students' mastery of vocabulary. To accomplish this, the study was guided by the following research questions:

RQ1. Does Duolingo influence the vocabulary mastery of students?

RQ2. Does the utilization of the Duolingo application result in any discernible enhancement in students' vocabulary mastery?

METHOD

Search Strategy

Selected articles were evaluated using an adapted version of the PRISMA classification scheme guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Elshater & Abusaada, 2022). The PRISMA framework, which has been validated and is globally recognized, serves as a standard for conducting systematic reviews (Shortt et al., 2023b). As a result of their credibility, openness, and flexibility, we opted to establish this systematic review using the PRISMA guidelines. Prominent databases, such as ProQuest, Science Direct, Google Scholar, and Google Searching, were queried for articles. We imposed a range restriction from 2018 to 2023.

Inclusion and Selection Criteria of studies

The inclusion criteria of relevant research based on:

1. The journal must be published in English.
2. The journal was published in the last 5 years.
3. The journal must discuss about Duolingo application and vocabulary mastery.

The relevance study was excluded if:

1. The journal discusses about educational technology other than Duolingo.
2. The journal cannot be accessed.
3. The contents of the journal are inadequate.

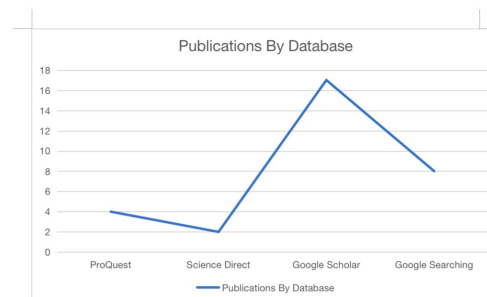


Figure 1. Publication By Database

Table 1. Data Extraction

No.	Author	Year	Publisher	Methodology	Main Findings
1	Tri Wintolo Apoko, Alfaruqi Alalwani Dunggio, Su Li Chong (Apoko et al., 2023)	2023	English Review: Journal of English Education	Mixed method	The result of the study indicated that students' English vocabulary mastery was enhanced through the use of Duolingo applications. Therefore, it is suggested that EFL and non-EFL university students utilize Duolingo to improve their English proficiency, particularly in vocabulary mastery, due to the platform's accessibility, simplicity, and user-friendliness.
2	Vinni Nasrul, Sitti Fatimah (Nasrul & Fatimah, 2023)	2023	e-journal UNP	Quantitative	Students' use of Duolingo increases their motivation to learn English and their vocabulary, as demonstrated by the outcome.
3	Fauzi Miftakh, Rida Yulianti (Miftakh & Yulianti, 2021)	2021	ELT in Focus	Qualitative	In regard to acquiring general vocabulary, the results of the study revealed that secondary students held a favorable perception of Duolingo. Their assessment of its efficacy provides clear evidence of this. By utilizing Duolingo, secondary students were encouraged to continue acquiring general vocabulary. It was an effective medium.
4	Husnur Rosyidah Aulia, Eka Wahjuningsih, and Rika Andayani (Aulia et al., 2020)	2020	ELTR Journal	Quantitative	Students' mastery of vocabulary is strongly impacted by their use of the Duolingo application.
5	Pangkuh Ajisoko (Ajisoko, 2020)	2020	International Journal of Emerging Technologies in Learning	Quantitative	In accordance with the quantitative data, the students' grade is elevated. The anticipated outcome is to furnish educators and learners with convenient information regarding extensive language learning practice.
6	Alan Jaelani and Dilla Rachmadanti Sutari (Jaelani & Sutari, 2020)	2020	In: Bogor English Student and Teacher (BEST) conference	Qualitative	The findings of this study indicate that the majority of students preferred to use the Duolingo application to study English vocabulary. There are several benefits associated with utilizing the Duolingo application as a learning medium for English vocabulary. These include the ease of comprehending the material, increased enthusiasm and motivation towards learning English vocabulary, the ability to overcome learning boredom, and the encouragement of novel ideas in the learning process.
7	Dwi Ima Herminingsih (Herminingsih, 2021)	2021	Jurnal Bahasa Lingua Scientia	Qualitative	The findings of the research demonstrate that the participants concur that Duo Lingo can enhance their proficiency in acquiring new vocabulary.

8	Nadya Savira Hernadijaya (Hernadijaya, 2020)	2020	English Education, Faculty of Language and Arts, Surabaya State University	Quantitative	Students' mastery of vocabulary has increased, according to the findings of this study; therefore, there is a significant difference in the experimental group following treatment.
9	Retno Wiyati, Shakilatasya Amelia (Wiyati, R., & Amelia, 2022)	2022	JELA (Journal of English Language Teaching, Literature and Applied Linguistics)	Qualitative	The researcher concludes, based on the entirety of the collected data, that the students' favorable perceptions of the Duolingo application are attributable to its sophisticated functionalities.
10	Mila Kamelia Simanjuntak, Fenty Debora Napitupulu, Sahat Taruli Siahaan (Simanjuntak et al., 2023)	2023	INNOVATIVE: Journal Of Social Science Research	Quantitative	Based on the findings of this study, Duolingo may emerge as a highly effective application for enhancing English language learning, particularly in the domain of vocabulary acquisition.
11	Yesa Fitri, Melyann Melani, Veni Roza, Reflinda (Fitri et al., 2023)	2023	INNOVATIVE: Journal Of Social Science Research	Quantitative	The findings of the study indicated that the utilization of the Duolingo application had an impact on the vocabulary mastery of second-grade students at SMPN 1 Koto Besar during the academic year 2021/2022.
12	Puput Permatasari, Ade Sudirman, Tatu Munawaroh (Permatasari et al., 2022)	2022	Journal of English Language Learning	Quantitative	The results indicated that the use of Duolingo had a moderate impact on the vocabulary mastery of eighth-grade students at SMPN 2 Banjarsari Lebak during the academic year 2021/2022.
13	Rais Abin & Netty Huzniati Andas (Abin & Andas, 2022)	2022	EduLine: Journal of Education and Learning Innovation	Quantitative	Increased vocabulary is the result of the Autonomous Learning Model facilitated by the Duolingo application. Students were encouraged to be more self-reliant and accountable in their English-learning endeavors with the assistance of the Duolingo application's Autonomous Learning feature, which makes it an ideal method for teaching vocabulary.
14	Khairani Mahfuza, Zulfitri (Mahfuza et al., 2023)	2023	Journal Pusat Studi Pendidikan Rakyat	Quantitative	The data indicate that there is evidence of progress in the English vocabulary of the students.
15	Ivan Octapriandy, Dian Anggraini Harahap (Octapriandy & Harahap, 2023)	2023	JEELi Jurnal of English Education and linguistics	Quantitative	The students' mastery vocabulary accomplishment indicates that the Duolingo application had a significant impact on students' mastery vocabulary achievement.

RESULTS AND DISCUSSION

Before and after using Duolingo, there was a difference in students' English learning motivation; thus, using the Duolingo app has an impact on students' English learning. Here are some of the advantages of using Duolingo:

1. Improve Students' Vocabulary Mastery

Duolingo assisted novices, particularly in their vocabulary development (Apoko et al., 2023). Moreover, Duolingo assisted the students in expanding their vocabulary, whether it be active or passive. The results of the data analysis demonstrated that the students' vocabulary achievement had been substantially impacted by their use of Duolingo.

2. Increase Students' Engagement and Motivation in Teaching and Learning

Duolingo attracted students with its extensive subject matter, which included animals, food, and athletics. Students can select the subject matter they wished to study and comprehend the vocabulary associated with that particular topic (Apoko et al., 2023). Every level would present users with a new exam to complete. It may inspire students to continue applying what they have learned. As soon as they completed the challenges, they were able to confidently apply the newly acquired vocabulary in everyday conversation.

3. Easy to Use

Duolingo is more attractive and user-friendly, so Duolingo is included in the class curriculum as one of the learning media. Meanwhile, the use of images can make it easier for students to answer English vocabulary material that is easy to understand in Duolingo. Duolingo functions as a suitable media for completing online assignments. In line with Jaelani and Sutari (2020) Students can understand and acquire English vocabulary quickly because of Duolingo, an intuitive English learning application that could be utilized at any time and in any location.

The Positive Roles

1. Duolingo app could increase students' motivation in teaching and learning, especially in learning vocabulary, so the students' vocabulary mastery was improved.
2. Duolingo app was easy to use, and the students could use the app anywhere and anytime, so they quickly understood and learned English vocabulary.
3. Duolingo provide some features, such as daily goal, streak, challenges, progression, achievements/rewards, character customization, power-ups, and heart system which motivated the students to reach their target points and to compete with their friends.

CONCLUSION

The Duolingo application significantly increased the motivation and vocabulary of students to learn English. Students who use the Duolingo application are more motivated and comprehended when learning English, as evidenced by the results of assessments and questionnaires administered prior to and subsequent to its implementation in the classroom. Additionally, their performance on the English learning motivation questionnaire and the vocabulary post-test improved subsequent to utilizing Duolingo (Nasrul & Fatimah, 2023). As a result of increased interest in learning,

learners were more motivated to learn and honed their skills. The material was also simpler to comprehend, ensuring that all learners had an equal opportunity to practice it.

The Duolingo application will enhance the excitement and enjoyment of the language- learning process. Consequently, it can aid in the expansion of students' English vocabulary knowledge. As a result of this systematic review, it can be concluded that students view Duolingo favorably for English language acquisition, particularly with regard to vocabulary. Facilitating the learning process of students offers numerous advantages, including the potential to enhance, soothe, enliven, and inspire students' English proficiencies. As one of the applications that encourages English learning, Duolingo is an efficient method for enhancing the proficiency of English students. Based on Tiara et al. (2021b) Applications of Duolingo have a positive impact on students' abilities because they can stimulate student interest and encourage them to learn English.

Based on the Systematic Literature Review, the researcher propose a set of guidelines that can direct researchers to deeper, more meaningful and methodologically sound inquiries. These guidelines can also be used to study other gamified MALL tools. Researchers also suggest using mixed methods methodology for the future research, using quantitative and qualitative methods to capture various aspects of the learning process.

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