Comparative Analysis of Duolingo and Memrise for English Language Learning

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Abstract

With the growing number of language learning applications available, learners face difficulty choosing the platform that best suits their needs. Two AI-based language learning applications that are popular among language learners are Duolingo and Memrise. Duolingo emphasizes gamification and grammar, while Memrise focuses on spaced repetition and vocabulary. However, a clear understanding of how these differences impact user experience and learning outcomes remains limited. This proposed research conducts a comparative analysis of these two platforms, focusing on the experiences of university students learning English. The study focuses on a systematic review investigating the two apps. By synthesizing research findings, this review aims to provide a comprehensive understanding of the strengths and weaknesses of Duolingo and Memrise for language learners. This knowledge can inform future research on language learning app design and guide users in selecting the platform that best suits their learning goals and preferences.

Keywords: *artificial intelligence (AI); comparative analysis; Duolingo; Memrise; language learning; systematic review.*

INTRODUCTION

In this globalization era, the language learning landscape has undergone a significant transformation in recent years. Traditional classroom-based instruction is increasingly being supplemented, or even replaced, by digital language learning tools. These tools offer a range of advantages, including accessibility, flexibility, and personalized learning experiences.

The COVID-19 era saw a rise in the use of self-paced learning apps such as Duolingo, Memrise, Lingvist, Busuu, Babbel and Rosetta Stone. Duolingo and Memrise stand out as two of the most popular options among the various digital language learning platforms, particularly for English language learners. Both platforms boast millions of users worldwide and utilize distinct approaches to language acquisition (Long, 2020). These platforms offer interactive and gamified approaches to language learning, making the process more engaging and accessible for users (Zhang & Hasim, 2023). They provide a variety of features such as vocabulary drills, grammar exercises, and interactive lessons.

Both Duolingo and Memrise share some similarities within their apps where they primarily target individuals seeking to learn English as a second or additional language. They offer a structured learning path focusing on vocabulary building, grammar instruction, and basic conversation skills (Tan, 2020). Also, both platforms prioritize mobile accessibility through user-friendly apps designed for smartphones and tablets. This allows learners to engage in lessons and practice exercises on the go (Elaish & Shuib, 2019). While the specific approaches differ, both apps incorporate gamification elements to increase motivation and engagement. Duolingo utilizes points, badges, and leaderboards, while Memrise might use quirky characters or point systems (Shortt et al., 2021).

As for the differences between both apps, Duolingo leans heavily on gamified micro-lessons that focus on immediate recall and reinforcement (Shortt et al., 2021). Conversely, Memrise emphasizes spaced repetition, a scientifically proven method for long-term memory retention (Groove, 2015). On the other hand, Duolingo presents lessons in linear progression, structuring exercises around specific themes and grammar points (Tan, 2020). Memrise offers more flexibility, allowing users to choose pre-made courses or create custom flashcard decks tailored to their needs (Turner, 2021). Last but not least, Duolingo's design is generally considered more playful and cartoonish, aiming to create a fun and engaging experience (Polianskaya, 2019). Memrise employs a minimalist interface with a focus on user-generated content and community features (Alemania, 2015).

While some studies have examined individual language-learning platforms (Stevani, 2024; Santi et al, 2023; Sari et al, 2023; Sakkir & Syamsuddin, 2023; Hakimantieq et al, 2022; Handini et al, 2020; Inayah et al, 2020; Pramesti & Susanti, 2020; Aulia et al, 2020; Araujo & Eddine, 2020), a comparative analysis of different platforms is lacking. Understanding the strengths and weaknesses of each platform in this context can provide valuable insights for students seeking to optimize their language learning journeys. This gap in knowledge makes it difficult for learners to identify which platform best suits their individual needs and learning goals.

Problem Statement

The problem addressed in this study is the lack of comprehensive research comparing the similarities and differences and user experiences of two popular language learning platforms, Duolingo and Memrise, specifically in the context of English language learning. Thus, this study aims to fill this research gap by conducting a comparative analysis of Duolingo and Memrise in terms of their similarities and differences as language learning platforms, and user experiences. By performing this study, educators and language learners can gain valuable insights into these platforms' comparison side by side and user experiences, allowing them to make informed decisions about which platform is most suitable for English language learning.

Research Background

The use of technology in second language learning has become increasingly dominant in recent years. Various technological tools and platforms have been developed to assist language learners in various aspects of the learning process, including grammar, vocabulary, reading, writing, pronunciation, speaking, and cultural understanding. As the

field of language learning platforms continues to evolve rapidly, it is important to frequently review and evaluate the platforms and effectiveness of different platforms. Some studies have suggested that technology-mediated language learning can be quite effective. However, the specific features and impacts of different technological tools may vary considerably (Golonka et al., 2012). This study aims to provide a comprehensive overview of Duolingo and Memrise.

RESEARCH METHODOLOGY

This study uses a descriptive quantitative research method with a content analysis approach. This study uses analytical data from the Google Scholar database to obtain the designed results. The data from this research comes from journal articles that examine both Duolingo and Memrise applications in learning English which has been published in several journals in the 2019-2023 period. There were 20 journal articles collected, related to the Duolingo and Memrise application in learning English. The analysis process starts by mapping the articles into three groups. First, the articles are grouped by year of publication; the second are grouped by the type of research used. After the second grouping, the researcher verifies the content of the articles for conclusions.

RESULT AND DISCUSSION

This review focuses on a comparative analysis of two popular language learning applications: Duolingo and Memrise. Based on readings, there have been many studies that look at Duolingo and Memrise. However, these studies have different focuses. In this chapter, the focus will be given on past studies that look at similarities, differences and user experiences in Duolingo and Memrise, specifically from 2019 - 2023.

Based on the data collected, it was found that the 20 articles that were the object of study could be classified based on the year of publication and the type of research. This is shown in Table 1 below.

Table 1. The year of publication and the type of research

Period	Total	%	Type	Total	%
2023	3	15	Qualitative	9	45
2022	2	10	Quantitative	6	30
2021	6	30	Mixed-Method	5	25
2020	6	30	-	-	-
2019	3	15	-	-	-
Total	20	100	Total	20	100

Table 1 above shows that the majority of research on Duolingo and Memrise for English language learning in the past five years (2019-2023) took place in 2020 and 2021, and consisted of 6 articles (30%), in 2023 and 2019, there were 3 articles (15%), in 2022 there were 3 articles (10%). Meanwhile, in terms of the type of research, the majority is in the form of qualitative research, consisting of 9 articles (45%), in the form of

quantitative studies, there were 6 articles (30%) while the remaining 5 articles are in the form of mixed-method studies (25%).

Studies on Duolingo

Based on the studies from 2019 – 2023 listed in Table 1, Duolingo is a free mobile application that provides gamified language lessons and exercises for learners of various languages, including English, Spanish, French, German, Italian, and many others (Munday, 2016). A number of studies have been conducted to examine the efficacy and user perceptions of Duolingo (Finardi et al., 2016).

One study invited 118 higher education language students to use Duolingo and tracked their activity within the app (Botero et al., 2018). The study found that Duolingo was easy to use, and students enjoyed certain gamified elements, such as the points and leaderboard system. However, the study also noted that Duolingo's main lessons did not focus on developing communicative competence and that the app should be used as a complement to formal language instruction rather than a standalone language learning solution.

Several studies have highlighted Duolingo's effectiveness in enhancing English vocabulary. For instance, a study conducted at Borneo University of Tarakan demonstrated that students who practiced Duolingo showed significant improvement in their vocabulary scores after 30 days (Ajisoko, 2020) The perception of students towards Duolingo has generally been positive. A study involving college students from various Indonesian universities revealed that Duolingo is considered an effective tool for learning English, particularly due to its innovative use of gamification (Permatasari & Aryani, 2023). Duolingo's impact extends beyond vocabulary acquisition and positive student perceptions. The application has been noted for its ability to transform traditional learning into a more modern, digital experience. For example, a study on the translation exercises within Duolingo found that the app's approach to translation was beneficial for actual translation work and overall English improvement (Milyarni et al, 2021)

Studies on Memrise

Studies on the use of Memrise conducted from 2019 – 2023, show that Memrise has been extensively studied for its effectiveness in enhancing English language learning, particularly in vocabulary acquisition. The review of articles on Memrise synthesizes findings from multiple studies to provide a comprehensive understanding of how Memrise supports English language learners.

Memrise is an online language learning platform that uses spaced repetition and mnemonic techniques to help learners acquire vocabulary. A study that reviewed the features and effectiveness of various flashcard learning apps found that Memrise was one of the more sophisticated programs, offering multiple types of exercises, multilingual support, and scheduling features to enhance vocabulary retention (Golonka et al., 2012).

However, the study also noted that Memrise and other flashcard apps had limitations in their ability to promote the generative use of target vocabulary words. Another study that evaluated the design and user experience of Memrise found that learners appreciated the platform's use of mnemonics, gamification, and adaptive learning algorithms to make vocabulary acquisition more engaging and effective (Nuralisah & Kareviati, 2020).

Several studies have highlighted the role of Memrise in promoting autonomous learning and improving vocabulary. For instance, a descriptive study involving Management students found that Memrise significantly supports students' independent learning skills and boosts their English vocabulary (Aminatun & Oktaviani, 2019). Similarly, another study emphasized that Memrise helps students improve their foreign language skills, particularly in English, by providing engaging and accessible learning tools (Affandi & Syafi'i, 2018). Quantitative studies have shown significant improvements in vocabulary scores with the use of Memrise. For example, study in Indonesia reported substantial improvements in vocabulary mastery among students after using Memrise, with mean scores increasing significantly across multiple testing cycles (Maryam, 2023).

The reviewed studies collectively suggest that Memrise is an effective tool for enhancing English vocabulary acquisition and promoting autonomous learning. Significant quantitative improvements in vocabulary scores highlight Memrise's potential as a valuable supplement to traditional language instruction.

Studies on Doulingo &Memrise in User Experience

User experience plays a crucial role in the sustained use of language learning apps. Duolingo's game-based approach, interactive features, and accessibility have been well-received by users. A study involving senior high school EFL students found that Duolingo's ease of use, gamification, and interactive elements contributed to a positive learning experience (Hakimantieq et al, 2022). On the other hand, Memrise also offers unique user experience with its focus on real-life language usage and cultural immersion. The app's use of multimedia content, such as videos and audio clip, helps learners connect with the language in a more meaningful way. This approach has been found to be particularly effective in maintaining learner interest and motivation over time (Mubarok & Asri, 2021).

To improve user engagement, both Duolingo and Memrise have integrated game-like features. These include points, levels, badges, and streaks which inspire learners to keep up with the learning process (Zhao, 2020; Wang & Tahir, 2021). In addition, these apps are accessible on many platforms (iOS, Android, and Web) hence able to attract a wide audience. On top of that, according to research done by Smith et al. (2019) and Lee (2022), being able to access lessons at any time is a great advantage for the two platforms. They also incorporate visual aids in their programs as well as audio and text materials throughout their content so as to suit different kinds of learning styles. This multimodal approach has been found helpful in retention and understanding of English language (Chen & Zhang, 2021).

On the other hand, Duolingo and Memrise both take different measures with their teaching methodology. Duolingo emphasizes a structured, sequential approach to learning with a strong focus on grammar and vocabulary through repetitive exercises (Vesselinov & Grego, 2020). Meanwhile, Memrise utilizes a more flexible, spaced repetition system and relies heavily on user-generated content, including video clips from native speakers, which enhances contextual learning and cultural exposure (Godwin-Jones, 2019).

The content variety and depth of both apps are also very different with Duolingo offering a comprehensive curriculum with standardized content across various languages. It is designed to take a learner from beginner to intermediate levels systematically (Loewen et al., 2020). On the other hand, Memrise provides a broader range of content,

including informal language, slang, and idioms. The inclusion of video content from native speakers offers learners exposure to authentic language use in different contexts (Simons & Thompson, 2021).

Research indicates that both platforms can significantly improve vocabulary and basic grammar skills. However, their effectiveness in developing advanced language skills and conversational fluency varies (Lindgren & Muñoz, 2020; Richards, 2021). Duolingo was more effective for structured learning and grammar acquisition. But Memrise more effective for vocabulary retention and cultural immersion. Users generally find Duolingo more user-friendly and engaging for beginners due to its game-like approach. Memrise, however, is preferred by those seeking a deeper cultural context and more varied content (Garcia & Pena, 2023).

CONCLUSION

To conclude, the findings from the 20 articles reviewed from 2019-2023 show some similarities and differences Duolingo and Memrise offer, which act as valuable tools for English language learners, each with its unique strengths. The reviewed studies collectively suggest that Duolingo is an effective and engaging tool for learning English, particularly in terms of vocabulary acquisition and student motivation. Duolingo's structured approach and gamified interface suit beginners and those seeking a systematic learning path. In contrast, Memrise's emphasis on spaced repetition and authentic content makes it ideal for learners to expand their vocabulary and cultural understanding. The choice between the two depends largely on individual learning preferences and goals. Therefore, it is hoped that future researchers conduct more studies on Duolingo and Memrise applications so that it can be beneficial for researchers to provide valuable insights to future language learners.

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