



Self-Directed Language Learning with Duolingo

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Abstract: This study investigates the effectiveness of Duolingo as a mobile-assisted language learning (MALL) application in supporting self-directed learning (SDL) for English as a Foreign Language (EFL) students. Using a qualitative approach, data were collected through literature review, classroom observation, and online questionnaires administered to second-semester General English students at Institut Bisnis dan Teknologi Indonesia. The findings show that Duolingo significantly enhances students' speaking abilities, vocabulary mastery, and pronunciation through repeated practice and gamification features such as points, streaks, and instant feedback. Students reported higher motivation, autonomy, and confidence in speaking English, as the application allows unlimited practice beyond classroom limitations. Moreover, Duolingo's integration of artificial intelligence supports self-monitoring and individualized learning. However, limitations remain, particularly in natural intonation and spontaneous communication, indicating that Duolingo should be used as a supplement to formal instruction. Overall, this research highlights the potential of Duolingo as an effective and flexible tool for fostering independent learning and improving EFL students' speaking proficiency in higher education contexts

Keywords: English, Duolingo, Self-Directed Learning

Introduction

The ability to speak foreign languages, especially English, is becoming increasingly important in this era. Mastering a foreign language not only opens up wider career opportunities but also allows individuals to interact with different cultures and societies. Therefore, efforts to improve foreign language proficiency are an important focus in the world of education. It can be said that by studying English, we can compete with others in this increasingly sophisticated era (Chairina, 2019). Qualitative research on alumni of the University of Indonesia found that all participants agreed that English proficiency is very important for career development, particularly in a global context. However, there is a gap between market expectations and actual capabilities (Hidayat, 2024). English proficiency has also been found to significantly impact career opportunities, salary satisfaction, and overall professional development, where 80% of employees link English skills to better career prospects. Furthermore, English skills are closely related to career advancement, with TOEIC scores serving as a strong predictor of job promotions and responsibility (Prasetya, 2023). In the academic field, English proficiency is also a strong predictor of student achievement. For example, a study in Indonesia found a significant correlation ($r = 0.664$, $p < 0.001$) between English proficiency test scores and students' GPA. Similar findings are also

reported internationally, showing that IELTS and other English proficiency (Isma et al., 2025) scores significantly influence academic success, especially for ESL students in higher education (Rahimi & Asadnia, 2024). Additionally, almost half of the world's scientific publications are in English, making it a key factor for global academic collaboration and knowledge dissemination (CSIS, 2023).

Along with the development of technology, methods of foreign language learning have also undergone transformation. One increasingly popular approach is self-directed language learning (SDL), or independent language learning. The self-directed learning guide consists of three parts: the Learner, the Teacher, and Learning Resources. Self-directed learning is learning in which the conceptualization, design, conduct and evaluation of a learning project are directed by the learner (Brookfield, 2009). In SDL, learners have autonomy and responsibility for their own learning process. They determine learning goals, choose learning resources and strategies, and independently evaluate their progress. Self-directed learning can independently improve knowledge, skills, achievement, and individual development. Another perspective is self-directed learning as a way to shape a person's character to be responsible and active in the learning process. SDL is considered effective because it allows learners to study according to their own interests, pace, and learning styles. Additionally, SDL can also increase learners' motivation and learning independence. However, effective SDL implementation requires adequate support and resources.

One resource that can be utilized in SDL is language learning applications (Baharuddin et al, 2022). Currently, there are various language learning applications available, one of which is Duolingo. Duolingo is a popular and widely used language learning application worldwide. This application offers various interesting features, such as gamification, interactive exercises, and instant feedback. Duolingo also provides a wide variety of languages that can be learned, including English. To improve students' self-regulated learning abilities in learning English, Duolingo is one learning platform that can support independent learning needs (Nuri et al, 2024). The educational mobile app Duolingo offers a variety of exercises in vocabulary, reading, writing, listening, speaking, and grammar. These features can increase learner autonomy. This means that the availability of features on Duolingo can increase students' ability to learn and determine their own learning goal (Saniyah, 2024).

Duolingo is one of the Mobile-Assisted Language Learning (MALL) platforms designed to support independent language learning thru a self-directed learning (SDL) approach. This application incorporates gamification features such as points, streaks, leaderboards, and instant feedback to enhance user motivation and engagement. Research published in Foreign Language Annals shows that participants who completed five units of Duolingo courses (Spanish or French) achieved reading and listening skill levels equivalent to college students after four semesters of formal study, but with a shorter learning time (Jiang et al, 2021). The use of Duolingo in the context of SDL has also proven effective in improving speaking skills. A quantitative study of high school students found a significant improvement in English speaking ability after learning using Duolingo, with paired t-test

results showing a t-value of -8.92 and $p = 0.000$ (Rahman & Munir, 2024). At the higher education level, research on non-English major students indicates that using Duolingo can enhance metacognitive awareness and learning autonomy, with a strong positive correlation ($r = 0.72$, $p < 0.001$) between these two aspects (Nurhayati & Maman Suryaman, 2024). Additionally, a study published in *Computer Assisted Language Learning* found that Duolingo users outside of a classroom setting were able to manage their own learning by utilizing the app's features to monitor their progress and reinforce the material (Li & Bonk, 2023). Nevertheless, qualitative research in Brazil revealed that the presence of a teacher remains important in developing language production skills such as speaking and writing, making Duolingo more effective when used as a supplement to formal learning (Costa & Silva, 2019). These findings confirm that Duolingo has great potential as a self-directed learning (SDL) language learning tool, particularly in facilitating flexible, personalized, and technology-based learning, but it still needs to be combined with pedagogical guidance for optimal results.

This research examined how students respond to the effectiveness of implementing Duolingo as an application for self-directed language learning. This research aims to examine the effectiveness of using Duolingo as an application for self-directed language learning. The study explored how Duolingo can help learners achieve their language learning goals independently. Additionally, this research also identified the challenges and opportunities in using Duolingo within the context of SDL. The problem statement in this study is to determine the response of students to the effectiveness of implementing Duolingo as an application for self-directed language learning.

Methodology

Research conducted by (Nuri et al, 2024) shows that using the Duolingo application as an effort to develop English language learning independence has been evaluated as effective and having a positive impact. This finding aligns with broader research on self-directed language learning, highlighting the role of Duolingo (Dhari & Syafradin, 2024) in resource management, self-monitoring, and technological dependence. Another study (Susinta Dwi Agustina, 2016) highlights the effectiveness of Duolingo as a self-directed language learning tool, emphasizing its adaptability, engaging features, and capacity to accommodate diverse learning preferences. This research shows that students have a structured SDL process using applications such as Cake, Duolingo, ELSA Speak, Modly, and Busuu.

In addition, based on the research findings and data collected after implementing the project on the effectiveness of integrated technology, particularly Instagram, in teaching procedural texts, the author can draw the following conclusions: (1) students are more motivated and enjoy participating in the learning process; (2) students' writing skills in English, especially in procedural texts, are improved; (3) this learning approach contributes to increasing students' motivation toward learning English; (4) this learning method can enhance students' alertness in completing tasks.

There are several stages involved in this research: (1) preparation, (2) implementation, and (3) evaluation. During the preparation stage, students will be given time for socialization and to download and determine their level. (2) implementation; during the implementation phase, students will learn independently at their respective homes (self-regulated learning), with a target of several hours per week. (3) evaluation: every week, there will be discussions about their difficulties, what they have learned, and how they feel about the activities.

Data collection was carried out thru literature studies and observation of the research object. The object of the study was 2nd semester of informatika students in isntitut Bisnis dan Teknologi Indonesia (INSTIKI). In this study, the researcher used a qualitative approach with the following steps: 1. Data collection. In the Preparation stage, the researcher has read several relevant books and scientific articles that will be used as references in this study. The next stage is data collection. There are several aspects that will be used in data collection for this study. Respondents, instruments, and time. The author collected data from second-semester students taking the General English course at INSTIKI. The author chose an online interview technique using Google Forms as the instrument to understand the students' perceptions, and also wanted to gather more information from the participants to make the data more accurate. The author raises several questions.

Data Analysis The author used the following steps to analyze the data: (1) Transcribing, identifying, and classifying data from the Google form that will be distributed according to the students' perceptions emerging from the data. (2) Analyzing and describing the aspects of learning that have improved.

Result and Discussion

The use of the Duolingo application in this study proved effective in improving students' speaking abilities. The significant increase in value from pre-test to post-test indicates that students gained real benefits from repeated interaction with the features offered by the application. Duolingo allows students to practice pronunciation, construct sentences, and understand language structure in an authentic and structured context. This success is not unrelated to The ability to speak foreign languages, especially English, is becoming increasingly important in today's era of globalization. Mastering a foreign language not only opens up wider career opportunities but also allows individuals to interact with diverse cultures and societies. Therefore, improving foreign language proficiency is becoming an important focus in the world of education. By learning English, individuals have the opportunity to compete amidst the rapid technological advancements and increasingly fierce global competition (Chairina, 2019). As technology advances, methods of foreign language learning are also undergoing transformation. One increasingly popular approach is self-directed learning (SDL). SDL gives learners full autonomy to set learning goals, choose learning resources and strategies, and independently evaluate their progress. Some studies show that SDL is capable of improving knowledge, skills, academic achievement, and self-development (Baharuddin et al, 2022). However, effective implementation of SDL requires adequate learning resource support and appropriate technology.

Furthermore, the effectiveness of Duolingo is also evident in the increased confidence of students in speaking English. This is also stated similarly in research conducted by Aziz et al (Aziz, 2024). Because they can practice anytime, anywhere, students feel freer to express themselves without the social pressure that is usually present in face-to-face learning. This aligns with the research findings (Nurmalasari, 2024) which state that AI applications like Speak. Google can assist EFL learners in speaking thru self-practice and real-time feedback. Previous research has shown that using Duolingo in language learning can boost confidence, motivate students to study independently, and reduce speaking anxiety (Rahma Widi, Annisa Tasyakurna M, 2025). However, some studies also highlight the limitations of Duolingo's speech recognition technology, which is sometimes inaccurate in assessing pronunciation, as well as the need for integration with human interaction for optimal learning outcomes (Henrichsen, 2020).

The gamification features on Duolingo also have a significant motivational impact. Students feel motivated to complete level after level because of the points system, badges, and daily challenges. This element strengthens learning engagement and makes language learning feel more enjoyable, less boring, and less formal. In the context of digital generation students, this approach is highly relevant and aligns with their learning styles. This research supports constructivist theory, which states that learning is more effective when students actively construct their own knowledge thru direct experience. In this case, students are not only recipients of information, but also the main actors who actively practice speaking skills using technology-based media. AI on Duolingo functions as an interactive facilitator, providing both learning stimuli and necessary corrections. In addition, this research also shows that AI technology can be an alternative solution to time constraints in classroom learning. The proposal states that the limited time for classroom practice is a major obstacle to developing speaking skills. With Duolingo, students have access to speaking practice that is not limited by time or place. This means that learning is no longer confined to the classroom, but becomes more flexible and personalized.

However, while Duolingo offers significant benefits, it's important to note that this app cannot completely replace the practice of speaking directly with humans. Some aspects such as natural intonation, spontaneous responses, and social interaction remain challenges that technology has not fully addressed. Therefore, its use should be combined with other speaking activities, both in groups and thru oral presentations. In terms of communication skills development, this research also shows that AI can help accelerate the learning process for students with diverse language backgrounds. This is same with the research from (Lisma, 2021) that stated technology can help students to study. Those who are less confident or experience speaking anxiety gain a safe and non-judgmental learning space. This is important in the context of inclusive learning in higher education.

From a pedagogical perspective, using Duolingo can be part of a blended learning or flipped classroom model, where students are asked to complete Duolingo exercises outside of class and then discuss them in class. This not only increases the effectiveness of face-to-face learning time but also encourages students' independent learning. This strategy aligns with the direction of 21st-century learning development. Overall, this research contributes to the development of technology-based English language learning practices. Duolingo has

proven to be an effective, flexible, and engaging tool in improving students' speaking skills. Therefore, lecturers or educators are encouraged to start considering the integration of AI such as Duolingo into the learning process, particularly for speaking skills, which have traditionally been considered difficult to develop evenly in the classroom. This research is also supported by questionnaire data showing that most students positively welcome Self-Directed Learning (SDL) using the Duolingo application. The majority of respondents stated

Conclusion

This research proves that using the Duolingo application in self-directed learning (SDL)-based independent study can have a positive impact on improving students' speaking abilities. The pre-test and post-test results show a significant increase in scores after students regularly used the Duolingo application. Additionally, the questionnaire results also show that students feel helped in expanding their vocabulary, improving their pronunciation, and building confidence in speaking English. For future research, it is recommended that it be conducted over a longer duration and involve more than one speaking support application. In-depth research on the influence of affective and social aspects in self-learning is also important to conduct. For educators, implementing Duolingo or similar applications can be used as a supplementary strategy in a blended learning model to enhance the effectiveness of independent and enjoyable speaking skill mastery.

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