

Enhancing Vocabulary Using Duolingo through Self-Regulated Learning

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ABSTRACT: This study aims at exploring in more detail the use of Duolingo in improving vocabulary mastery through Self-Regulated Learning. It is also essential to find out the advantages of using Duolingo through Self-Regulated Learning. The data for this research was taken from Udayana University students who are not from the English Literature department. The data was collected through observation, tests, and interviews. Non-participatory observation techniques were used together with the note taking. Structured interview technique was also used in this study. The data were analyzed qualitatively and presented informally and descriptively. The results revealed that duolingo is a mobile assisted language learning that presents lessons across various skills with a series of short instructions that can enhance learners' vocabulary mastery through self-regulated learning.

KEYWORDS – Duolingo, Vocabulary, Self-Regulated Learning

I. INTRODUCTION

Spoken communication has long been recognized as a fundamental language skill, as the primary goal of language learning is to enable learners to effectively convey messages (Gultom et al., 2022). Successful communication involves accurately transmitting the intended meaning without causing misunderstandings. English speaking proficiency is a macro skill that must be cultivated by language instructors. Gultom et al. (2022) asserted that this skill is used to gauge learners' success in foreign language acquisition.

To achieve the aims of language learning, particularly in the domain of speaking, vocabulary is considered the most critical linguistic element. The proper usage of vocabulary prevents confusion during conversations, while inadequate vocabulary can pose a significant barrier to self-expression and communication (Al-Hassan & Abdulaziz, 2019). However, the existing phenomenon in Indonesia suggests that vocabulary mastery necessitates continued practice and improvement.

Many learners have difficulty answering questions related to General English in the English learning process due to a lack of vocabulary. In fact, with limited vocabulary a person also has limited understanding in speaking skills. Therefore, learners need to gain understanding and know learning strategies, goals and how to increase learning motivation for themselves. This is related to learners' strategies in managing their learning abilities independently. Learners' ability to become more independent is known as Self-Regulated Learning (SRL) approach. Through Self-Regulated Learning (SRL) approach, English language learners are able to take responsibility for their own learning process. Apart from that, the independent learning process has a big influence on the learner's attitude in language learning. In contrast to learners who still use conventional approaches, for example, the phenomenon obtained from research survey results shows that most learners only wait for instructions from the teacher. The integration of self-regulated learning with mobile technology creates a learning environment that is dynamic, adaptive, and capable of significantly improving learning outcomes.

One application of mobile device-based technology that is widely used by learners today is Duolingo. Duolingo is a learning platform that can support independent learning needs. Duolingo comes with a different approach, offering an interactive and fun learning experience through a variety of methods, including games, listening exercises, and quizzes. Kusuma (2018) stated, with the various features provided, Duolingo provides opportunities for learners to learn English independently, increase motivation, and build independence in the learning process.

Conducting an issue on this topic means taking the initial step. Based on observations at several institutions or informal English courses, there are several mobile device applications that are used as a medium to improve vocabulary mastery in speaking skills. The initial observation showed that mobile device-based independent learning has been implemented using an application which can be accessed via iPad, laptop and smartphone. Learners can access it anytime and anywhere. The applications on mobile devices used were Whatsapp Group, Youtube, and Zoom. Whatsapp Group is used as a medium for quizzes, while YouTube is used as a learning resource and Zoom is used as a medium for continuity of the learning process in class.

Among the applications that are widely used today, Duolingo is one of the applications that is very popular or is currently reaching peak sales on the market. Everyone can get access to use the Duolingo application. With this phenomenon, researchers believe that vocabulary mastery in speaking skills can be achieved through the use of Duolingo through the Self-Regulated Learning (SRL) approach. The reason is, the millennial generation tends to learn something new with a different style. This research is different from previous research in several aspects, including the subject, research location and language skills. The current research subjects are Udayana University students who are not from the English Literature department. Students at university level are expected to have better independent learning abilities, therefore this research can provide insight into the effective application of mobile device-based independent learning methods. The selection of non-English Literature students can provide a different perspective on improving English vocabulary, revealing unique challenges and strategies for students with non-English backgrounds.

Departing from this phenomenon, there were two research questions discussed; (1) How do learners use Duolingo to increase vocabulary mastery through Self-Regulated Learning?, and (2) What are the advantages of using Duolingo in increasing vocabulary mastery through Self-Regulated Learning?

II. METHOD AND THEORY

2.1 Research Method

This study adopted a qualitative method, employing a case study as the research design. Moleong (2016) defined a case study as a research approach used to generate an in-depth and diverse understanding of a complex problem or issue in its natural context. The methods used to gather data in this study include tests, questionnaires, and interviews, while the technique used is note-taking. Hence, research instruments were used to obtain analyzed data and find complete information about a phenomenon. This research used instruments in the form of pre-test questions, post-test questions, observation sheets, questionnaires and interviews. The data were analyzed qualitatively and presented informally and descriptively.

The findings of this research came from the observation, tests, and interview by note-taking. In the beginning, the researcher examined how the learners enhance the vocabulary using Duolingo through the Self-Regulated Learning approach by giving the tests. The pre-test was carried out before students started using the Duolingo application. The purpose of the pretest was to obtain an initial learner's vocabulary abilities. The main purpose of the pretest is to measure learners' mastery of basic vocabulary. The results of this pre-test would be compared with the post-test results to assess the increase in vocabulary mastery after using Duolingo. After administering the pretest, the treatments which were conducted by the learners themselves in using Duolingo application. As

regards the Self- Regulated Learning approach, the researcher tends to let the learners use the application based on their availability every day with the duration for 1- 1.30 hours.

2.2 Theoretical Framework

2.2.1 Social Cognitive Theory

Bandura's (1977) social cognitive theory consists of three interconnected factors: personal, behavior, and environment, collectively known as Reciprocal Determinism. The theory emphasizes self-regulation, where learners control their learning activities and manage their environment and behavior. Understanding behavior requires analyzing interactions with the environment, such as family and peers. Effective adaptation to the environment can lead to better academic performance. By understanding the reciprocal relationship between the individual, their behavior, and the environment, educators and policymakers can develop more effective strategies to foster an educational climate that enables students to thrive and reach their academic goals.

Behavior is shaped by the interaction between personal, environmental, and behavioral factors, with learning occurring through imitation. Evaluating learning outcomes involves both cognitive and behavioral changes. Self-efficacy, or belief in one's ability to achieve goals, is essential in this theory. To assess learning outcomes effectively, one must consider both cognitive and behavioral changes. Cognitive changes involve shifts in knowledge, understanding, and mental processes, while behavioral changes encompass alterations in actions and habits. Evaluating these aspects together provides a comprehensive view of the learning process and its impact.

Social learning occurs through observing and imitating others, with information internalized through cognitive processes. In the context of using Duolingo, this theory shows that mobile technology can effectively enhance vocabulary learning and improve self-regulated learning and self-efficacy. Duolingo's platform allows users to engage in language learning through gamified exercises, which supports the process of imitation and observational learning. This interactive experience not only makes the learning process more engaging but also helps users to internalize new vocabulary effectively. By offering immediate feedback and adapting to individual learning needs, Duolingo fosters self-regulation by allowing learners to monitor their progress, set personal goals, and adjust their study habits accordingly. Through this approach, learners can enhance their vocabulary and language skills in an engaging, self-directed, and confidence-building manner.

2.2.2 Vocabulary Mastery

A language skill cannot be separated from vocabulary, as the core of a language is the word. Vocabulary refers to the wealth of words in a particular language. According to Tarigan (2011) vocabulary can be interpreted as: (1) all the words contained in a language; (2) the wealth of words possessed by a speaker or writer; (3) words used in a field of knowledge; and (4) a list of words arranged like a dictionary accompanied by brief and practical explanations. Vocabulary is not merely a collection of words but a dynamic and integral component of language skills. It spans from the total lexicon of a language to the specialized terms within various fields, and includes personal vocabulary development. By understanding and expanding the vocabulary, learners can improve their ability to communicate effectively, grasp complex concepts, and engage with diverse linguistic contexts. Thus, an extensive vocabulary is essential for achieving proficiency and fluency in any language.

A person can be said to understand vocabulary if they understand vocabulary in both spoken and written language, and are able to pronounce it correctly and understand when to use the word, understand the meaning and function of the word itself. Proficiency in vocabulary encompasses the ability to recognize and interpret words in various contexts. In spoken language, this involves listening skills to accurately comprehend and integrate words during conversations or audio inputs. In written language, it requires the capacity to read, interpret, and extract meaning from words within texts, enabling one to understand them in diverse written formats such as books, articles, or digital content.

Tarigan (2011) emphasizes that the quality of an individual's language skills is heavily dependent on both the quantity and quality of their vocabulary. An extensive and diverse vocabulary enhances one's ability to express thoughts clearly, engage in complex discussions, and understand nuanced meanings in different contexts. It is not merely about knowing many words, but about understanding their correct usage, connotations, and the subtleties they bring to communication.

An extensive vocabulary allows for precision in expression. It enables learners to choose the exact word that conveys their intended meaning, reducing ambiguity and enhancing the clarity of their message. For example, the difference between "happy," "elated," and "content" lies in the nuances each word brings, allowing a speaker or writer to convey a specific degree of happiness. This precision is crucial in formal settings such as academic writing, professional communication, and public speaking, where clarity and specificity are paramount. The quality and quantity of one's vocabulary directly influence their ability to communicate effectively, making it a critical component of language mastery.

III. RESULT AND DISCUSSION

This chapter addresses the data analysis findings; the data was examined. To answer the first question on how learners use Duolingo to increase vocabulary mastery through Self-Regulated Learning, the pre-test, treatment, post test, and interview were completed.

3.1 Enhancing Vocabulary Mastery using Duolingo through Self-Regulated Learning

The researcher found that there was a difference of learners' vocabulary achievement after using through the Duolingo application was significant. In other words, Duolingo application can be used to increase the learners' vocabulary achievement. It can be concluded that there was a significant increase in learners' vocabulary achievement after being taught Duolingo application.

Table 1.1
The result of pretest and posttest

learners' Initial	Score of Pretest	Score of Posttest
AB	75	85
JA	55	75
AH	55	65
KN	80	90
DN	65	80

The scores of post-tests of the students were measured using learners' scoring system, which are excellent, very good, good, fair, poor, and very poor. The classification of the students score is shown below:

Table 2. Learners' Posttest Score Classification

Classification	Score	Frequency of PreTest Score	Frequency of Post Test Score	Percentage
Excellent	94-100	0	0	0%
Very Good	87-93	0	2	40%
Good	80-86	1	2	40%
Fair	63-79	2	1	20%
Poor	56-62	2	0	0%
Very Poor	< 55	0	0	0%

Looking at the result, all students experienced an increasing score. It can be seen in the table 2 above, after giving a treatment, there was a significant difference in learners' vocabulary mastery skill. It shows that there were 2 learners who were categorized as very good in which in the pretest there were no learners who got the score of 87- 93. Besides, there was also 40% increase of the score 80- 86. There was only one learner who got fair, however, the student experienced an improvement with the score of 63- 79.

The results of this study support Bandura's (1977) theory that mobile assisted language learning in the form of mobile application as an environmental factor, as provided in Duolingo features for language learning, particularly vocabulary, has an advantageous benefit. The application's settings can stimulate and maintain learner motivation to achieve positive learning outcomes. Furthermore, learning language through the application has advantages in terms of straightforward, demanding objectives, curiosity development, enjoyment, and sensory stimulation. This can be seen when the searcher applied the Duolingo treatment to the learners as they agreed that the interleaving approach in Duolingo material helps the learners memorize the English words easily as the words repeatedly appear in the exercise section whether in the form of listening, speaking, and writing exercises. Also, most of the learners feel comfortable with the app as they can practice

Citrayasa (2019) found that learning a language through mobile platforms can help students become independent learners and have self- regulated learning by allowing them to manage their own learning time, making it more valuable and enjoyable. It can be seen that during the treatment, all of the students focused on their language learning process by submitting their tree chart progress and Duolingo every weekend, even when the teachers were not present to instruct them to learn with Duolingo on a regular basis. Furthermore, the study participants reported that their experience of language learning using Duolingo was considerably more pleasurable and entertaining compared to traditional, non-digital instructional approaches. This finding appears to be associated with the app's implementation of a virtual currency ("lingots") system, which incentivized students to actively work on improving their English proficiency in order to earn rewards and customize their in-app avatars. The motivational affordances and gamified design elements embedded within the Duolingo platform seem to have fostered a more intrinsically rewarding and enjoyable language learning experience for the students.

This aligns with the principles of self-regulated learning theory, which emphasizes the critical importance of maintaining learner engagement, motivation, and a sense of personal agency in the learning process. By

incorporating game-like elements such as the lingots system and avatar customization, Duolingo was able to cultivate a more intrinsically motivating and pleasurable language learning environment for the participants.

In summary, the current research provides further empirical corroboration for the utility of Duolingo, in nurturing learner autonomy, self-regulatory behaviors, and intrinsic motivation - all of which are recognized as vital prerequisites for successful language acquisition. These insights hold significant implications for the design and implementation of technology-enhanced language learning environments.

3.2 The Advantages of Using Duolingo in Enhancing Vocabulary Mastery through Self-Regulated Learning

From the result of this research, students who studied English using the Duolingo application performed better in terms of vocabulary acquisition. According to the research, Duolingo can increase student engagement and motivation in the learning process. It is supported by Clark (2013), who claimed that technology can improve the effectiveness of vocabulary mastery. They also agreed that technology can be an effective, demanding, and innovative tool and resource in and around the classroom.

Second, the research showed that Duolingo could develop activities to make students forget that they are outside of the class. Moreover, it also provides a variety of interesting activities in which the students may explore many enjoyable aspects of learning. Duolingo helps the students keep on concentrating on what has been discussed during the hours. This was strengthened by Wright (2006:1), who claimed that duolingo assists and encourages learners to maintain their attention and effort. Learners learn the vocabulary through game-related activities in the application. This strategy will teach pupils vocabulary without them recognizing it.

In addition to improving learners' English vocabulary, other Duolingo features, such as speaking and pronunciation practice, enable learners to apply their English proficiency in real-world settings. The learners perceived Duolingo as an engaging medium for language learning, as evidenced by the positive feedback they provided during the interview process.

In shorts, there are some advantages of Duolingo application, including 1) Students can learn English progressively starting with the fundamentals like object recognition and attributes, 2) Each work comprises multiple simple activities; students can complete these tasks and will be directed until they are successful, therefore we will be given the correct answer, 3) On the Duolingo App, a task will be assigned each day, and students can choose how long they want to study, starting at five minutes, depending on their readiness and the available time (can be arranged). 4) Duolingo will demonstrate to you how to construct the most pertinent sentence within the context of English. 5) The Duolingo program will teach you how to pronounce words and sentences in English until you are completely fluent. 6) The learning process in Duolingo is similar to that of having an English teacher because it begins at the beginning and continues until the end

IV. CONCLUSION

The majority of learners agree that Duolingo is highly user-friendly, allows them to learn at any time and place, and the gamification features incorporated by Duolingo make the learning process enjoyable, leading to increased motivation and enthusiasm among the learners. Even though Duolingo has some drawbacks, such as limited internet access and repetitive gamification elements, this does not negate the fact that all learners still consider Duolingo to be an effective tool for language learning, particularly vocabulary acquisition. This is because Duolingo provides users with the opportunity to learn new vocabulary related to their surroundings in each unit.

Furthermore, the researchers hope that this study will inspire teachers to develop more innovative and engaging educational activities in the classroom by incorporating technology-based tools. Utilizing various games and questions in Duolingo as a warm-up before learning or as a form of assessment after learning to evaluate

learners' comprehension of the material and proficiency in new vocabulary are some of the activities that researchers suggest when employing Duolingo as an educational resource in the classroom. Additionally, for future research, the researchers aim for this study to provide deeper insights into the use of Duolingo for vocabulary mastery. Future researchers can also investigate the effectiveness of Duolingo in developing other language skills.

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