

*A Case Study on Duolingo Application in  
Vocabulary Learning Strategies Among EFL Students*

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**Abstract**

Vocabulary is an essential part of language proficiency because it provides the framework for how well students are able to speak, listen, read, and write. Language learners no longer have to rely just on classroom instruction; they can now learn independently due to a variety of applications. Thus, language-learning application called as Duolingo offers a variety of English-learning activities for students. Therefore, this study is conducted to analyze further about the students' vocabulary learning strategies and their experiences with the use of the Duolingo application. The data were collected using a selective sampling technique. After being collected, the data were analyzed by using thematic content analysis to identify the patterns of themes in an interview. The results showed the advantages such as increase students' motivation, improve English skills, easily accessible, and many more. There are also disadvantages experienced by students in learning English vocabulary through the application such as less of reading and speaking material and advertisements. Students who engage in independent online learning are more likely to utilize a variety of online resources that encourage and accelerate vocabulary development. The strategies that students used to learn from the application are note taking, practicing and use supporting applications. The results indicate that the Duolingo application includes experiences that contributed to advantages and drawbacks, as well as students' individual strategies for improving their learning vocabulary by using the Duolingo application.

Keywords: Duolingo Application, EFL Students, Strategies, Vocabulary Learning

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## Introduction

Language learners nowadays will not only depend on classroom instructions, but they can also do independent learning because there are many applications available. There are numerous applications available for expanding vocabulary for independent learning, one of them is Duolingo. Duolingo is a free, science-based language-learning platform founded in 2011 by Luis von Ahn and Severin Hacker (Robertson, 2011). Duolingo is a popular language-learning platform that offers a range of features to support independent learning. Statistics from the Duolingo website from 2021 showed that there are over 9.6 million daily active users and more than 500 million registered users, with 37 million active users per month. Duolingo offers 38 languages and user levels ranging from beginner to advanced.

English vocabulary is important for English learners to listen, speak, read, and write. It is a way to connect the four language abilities of listening, speaking, reading, and writing. According to Richards and Renandya (2002), vocabulary is a crucial component of language proficiency because it provides a foundation for how students listen, speak, read, and write well. Moreover, Tunchalearnpanih (2012) stated that students perform better in their language when they have a larger vocabulary. Since there are no specialized subjects about vocabulary taught in universities, students probably forget their vocabulary because they have fewer opportunities to learn vocabulary. As a result, they tend to have a limited vocabulary. According to Ergün Öcel, Gizem (2023), it has been discovered that students studying English as a Foreign Language (EFL) in university are unable to express themselves appropriately in either speaking or writing. It is highly advisable to highlight at a certain point that vocabulary is the foundation of any language.

However, improving fluency in vocabulary is not easy. The teacher must use an effective strategy that can motivate students to expand their vocabulary. According to Larsen and Freeman (2002), if a teacher wants their students to be able to utilize the target language in conversation, they must have a proper teaching strategy, media, and teaching method. The concept of learning in this era has been linked to the quick growth of technology. As technology develops, it is more used in teaching and has a significant impact on education (Jaelani, 2020). Many English teachers create teaching methods utilizing technology and media that are popular in this era, such as the Duolingo application, because Duolingo is one of the media that can be used to learn vocabulary. This is done in an effort to heighten students' interest in learning vocabulary.

Many factors that influence vocabulary learning include linguistic features of vocabulary, mother tongue and second/foreign language interference, the origin of vocabulary development, memory's ability to define, hold, and then recollect acquired or learned vocabulary, and advancement of the second/foreign language mental lexicon and its organization, vocabulary insight, personal characteristics, instructor and teaching strategies, and presentation of vocabulary (Takac, 2008). Students' learning strategies also have an impact on vocabulary acquisition. The usage of vocabulary learning strategies is one key component that impacts the effectiveness of foreign vocabulary acquisition (Yunhao, 2011). Nowadays, learning vocabulary can be done in many ways. In this modern era, students can enhance their vocabulary through various applications, using digital technology for language learning. Students' reactions to using new technology are positive, and they consider technology as a suitably combined and well-designed avenue for learning (Yang & Chen, 2007; Jones & Shao, 2011). Regarding that, Duolingo is one of the applications that can be used to learn vocabulary. The students have a positive perception of the use of Duolingo in

the aspect of usability, context, control, connectivity, mobility, blending, content, technical support, and cost (Pramesti & Susanti, 2020). It is important to discover the students' experiences in using Duolingo as the media to learn vocabulary.

Many students use Duolingo as an addition to their learning in the classroom. Duolingo has an aspect of gamification that is trending and relevant for today's learners. Duolingo courses also contain longer-form, discourse-level material in the form of interactive story activities, which allow students to practice their listening and reading abilities. These exercises explain how language is organized below the sentence level and emphasize more interactive and social features of the intended language. All sorts of lessons provide numerous possibilities for practice and repeated exposure that focus on structures of language. However, investigations into the usefulness of such studies for foreign language learning has been limited, especially with regard to large-scale commercial foreign language learning programs such as Duolingo. Although one authorized research study revealed positive language learning outcomes (Vesselinov & Grego, 2012), little independent research on student experiences, motivation, and program efficacy has been conducted (Lord, 2015; Nielson, 2011). In conclusion, knowing how to communicate in English is crucial, especially when communicating with foreigners. In reality, a lot of university students still have difficulty understanding new words. The acquisition of English vocabulary is crucial for international students since they will determine whether the learning process is effective, it is crucial to pay attention to the independent learning of the students in terms of their strategies for acquiring vocabulary using the Duolingo application. Based on the previously mentioned, this study is currently carried out to more thoroughly investigate vocabulary learning strategies and students' experiences utilizing the Duolingo application.

## **Literature Review**

### ***Vocabulary Learning Strategies***

Strategy is a word with several definitions, all of which are significant and beneficial to those charged with developing corporate, economic, or organizational strategy. A strategy is a set of ideas or decisions taken to assist organizations in achieving their goals (Miller & Dess, 1996). To acquire a lot of vocabulary, the students need to have a proper strategy. Yunhao (2011) suggested seven vocabulary learning techniques such as dictionary use, guessing, perceptions, encoding, activation, management, and sources.

Vocabulary learning strategies can be defined in many ways. Cohen (2014) described language learning strategies as thoughts and behavior, actively chosen and operationalized by language students to support them in carrying out a multiplicity of tasks from the very beginning of learning to the most advanced levels of target language performance. Moreover, Hurd and Lewis (2008) defined the focus on vocabulary learning strategies are identifying the word form, meaning, and usage in many contexts. Students utilize learning strategies to increase the effectiveness, autonomy, and enjoyment of their language study. According to Wen Qiufang (2003), the goal of using strategies, according to the definition, is to increase the effectiveness of learning; strategies are student behaviors or actions, not thoughts. In this context, vocabulary learning strategies can be described as "behaviors or actions that students use to increase the effectiveness of vocabulary learning."

In terms of behaviorism strategies, the lecturer can reinforce desired behavior and quickly remediate negative behaviors through the use of stimulus, response, and reinforcement.

According to Xuelian (2018) students must periodically review their vocabulary if they want to remember it. The advantage, in summary, is that the process is relatively simple. Furthermore, Hatch and Brown (2000) explained five steps to learning new words: encountering the word, identifying the word form, identifying its meaning, associating the word form to its meaning, and using it.

From the description above, it can be inferred to the features of Duolingo that allows us to practice so many learning strategies. In the Duolingo application, there are some features that can be encountered by the students. The stage level on Duolingo helped students to learn the language from Indonesian to English and English to Indonesian.

### ***Duolingo Application***

According to the 2016 guidebook *Duolingo for School*, the most popular online language learning tool is a simple tool called Duolingo. Students can learn English using a variety of activities on the language-learning application Duolingo, including translation, matching, dictation, fill-in-the-blank, speaking, listening, multiple choice, and competition. It is totally free and employs science and adaptive learning methods to make learning languages more enjoyable and successful.

Duolingo is a self-described completely free, science-based language learning platform founded in 2011 by Luis von Ahn and Severin Hacker (Robertson, 2011). Duolingo also includes instructors from whom users are able to exchange fewer lesson ideas and experiences, such as teachers or students, to make them more accessible in learning so it can measure students' achievement and dedication in flawless methods. It displays information such as the number of points earned, the overview tree, the streak, and the amount of time spent.

The lessons introduce students to vocabulary and grammar in sentences in the intended language, allowing them to progressively determine linguistic regularities through repeated exposure to and interaction with meaningful material. Moreover, detailed feedback and explanations supplement more implicitly, comprehension-based learning in Duolingo lessons. Explicit explanations can provide an alternative to more efficient learning for some topics. This is particularly relevant for the language's intended traits that may be challenging to discover based just on input (DeKeyser, 2003; Ellis, 2015).

Duolingo supports its effectiveness as its main selling point (a claim supported by founder Luis von Ahn and Duolingo's promotional video). Although von Ahn currently stated that Duolingo operates most effectively as a supplement to in-person formal instruction, Duolingo's website continues to make strong arguments about its effectiveness (and even superiority) as a stand-alone language learning experience (Duolingo, n.d.). Duolingo is a really simple, free, and basic educational mobile application with motivational DGBL (Digital Game-Based Learning] features that provide enough of an attractive aspect to maintain many learners engaged. The Common European Framework of Reference (CEFR), an international standard for language proficiency (Council of Europe, 2001), is employed to guide Duolingo lessons.

## **Method**

### ***Research Design***

This study used a qualitative case study. According to Creswell (2012), qualitative research is an approach of examining and understanding the significance that individuals or groups attach to a social or human context. This research process included creating a procedure, gathering data in the participants' environment, analyzing the data, moving from specifics to broad themes, and producing interpretations of the data's meaning. The final written report was written in a flexible manner. It aims to describe the experiences of Duolingo application users in learning vocabulary.

Moreover, Putra (2012) stated that the researcher serves as the main tool in qualitative research since it is an inductive method of identifying the research problems. In order to fully understand the issue, qualitative researchers must engage with the participants or subjects. Because qualitative research is dynamic, the researcher must pay attention to any interactions or conversations that arise during an interview.

Based on the statement above, the researcher analyzed the data based on the interview with the Duolingo application users about the strategies and experiences in using Duolingo to learn vocabulary. This research used a qualitative method, which entailed gathering data to answer the research questions formulated in the problem statement.

### ***Data Collection and Participants***

The researcher used an interview to collect the data. In addition, the semi-structured interview is used to create a discussion in order to dig more information from the participants. The information collected through the interview about the strategies and experiences in using Duolingo to learn vocabulary by Duolingo application users were the types of data required in this study.

The participants of this study were five university students that chosen based on their independent learning to learn vocabulary by using Duolingo. They are already using Duolingo independently or voluntarily because it is part of their independent learning. The selective sampling technique is used by the researcher to collect the data. Marguerite (2006) defined a selective sampling method as a common technique used in qualitative research that identifies key informants or individuals with specific knowledge of the subject that is studied.

### ***Data Analysis***

This study's data will be analyzed using qualitative data analysis. All data will be classified and analyzed in accordance with the research questions. This research including data analysis and interpretation by using Miles & Huberman's (2014) model; data collection, data reduction, data display, and drawing conclusions. The Miles & Huberman (2014) model is a systematic approach to qualitative data analysis that consists of four major stages: data gathering, data reduction, data display, and making conclusions. In this strategy, researchers collect relevant data using a variety of methods before condensing and organizing it to show patterns and themes. Researchers then illustrate the data to make it easier to analyze and generate insights. Finally, researchers make conclusions from the synthesis findings, providing insights and implications for theory, practice, and future research. According to the

statement above, qualitative research is a current finding, which means that the findings are still ambiguous or confusing. Here, the researcher tries to make it clear by utilizing a successful theory, and then the researcher analyzes the new findings to make them clear by using data analysis components.

## **Findings**

In this study, the data showed the advantages and disadvantages experienced by students in learning vocabulary through Duolingo and students' strategies through the use of the Duolingo application in vocabulary learning.

### **1. Students' Experiences**

Students experience some benefits and drawbacks while they are learning vocabulary in terms of their independent learning. The benefits are helpful for some students in vocabulary learning, and the drawbacks may have little impact on certain students' ability to learn vocabulary. Some students said that their motivation in learning English vocabulary is increased because of Duolingo. Students use the Duolingo application to increase their motivation in learning vocabulary. Before learning English vocabulary, students must be motivated and actively engage in the language. The student was able to communicate effectively in this way. They were more motivated to improve their performance if they misunderstood an exercise. Thus, students must continually expand their vocabulary. They became aware of the fact that they still lacked vocabulary and needed to learn it intensively as a result.

*“Duolingo application is very easy to access and we can download the application and it is very easy, also we can monitor our learning progress, so we know our progress.”*

To learn English vocabulary more successfully, the application that students use must have an easy way to access it. The easy access could be beneficial for some students who learn English vocabulary by mobile phone, they admit that it is really helpful because it is compact and easy to access. Due to the widespread popularity of the Duolingo mobile application, some students feel a greater need to learn and use it. As a result, they are more likely to be motivated to acquire knowledge with Duolingo. Moreover, learning English vocabulary through the Duolingo application can improve their English skills. As stated by the students,

*“Duolingo helps me to improve some skills, especially my speaking skill and pronunciation, and also I gain some new vocabularies, or some vocabularies that I may forget from Duolingo.”*

*“Duolingo helps me to improve my speaking and pronunciation because there are some sections that allow us to speak and they will correct it, and I think it is really cool because they know if we just pronounce word incorrectly, like even just a little mistake, they will know and tell us it is incorrect, so it helps me a lot in speaking and to improved my pronunciation as well, not only memorization.”*

Some students acknowledge that their English skills such as listening, speaking, reading, and writing are improved by doing some tasks in Duolingo. They are felt to be more able to speak in English than before. Also, some students feel they have more sensitive ears in terms of

listening skills. Duolingo application serves as a story feature that allows us to practice English skills through conversation. This can help students to engage more vocabulary in terms of speaking to other people. Some students felt they enjoyed having a conversation because of Duolingo.

*“I developed a new English learning habit after using the Duolingo application, for example when I have learned the Duolingo application, I can speak English with new words, and also I can understand what others said, and I can easily understand the conversations.”*

The independent learning of the students creates new learning habits for some students. They have made some positive habits in terms of maximizing their vocabulary learning by using Duolingo. Some students do more practice and also learn new vocabulary almost every day. Duolingo application is the application to learn languages that are more interesting and serve a variety of characters. The character on Duolingo attempts to give more playful learning to make the user feel more engaged and increase their motivation in learning vocabulary. As the students said they felt the character on Duolingo was fun and varied.

*“I feel like it is good for me because I like the characters of Duolingo, there are a lot of characters on the Duolingo application and it is quite fun for me.”*

*“The features of the application vary and it is also helpful for the beginner who wants to learn English or another language from the basic.”*

The unique features of Duolingo help students acquire vocabulary more quickly. On Duolingo, there are plenty of features, such as level chapters on the journey, corrections to review our learning, stories with conversation, listening and speaking skills, and more. Some students believed that the range of features truly supported their learning of vocabulary. The materials on Duolingo are helpful for students in improving vocabulary learning. Some students said they felt the material on Duolingo is suitable for their level and increased their vocabulary knowledge.

Despite of the benefits in using Duolingo for learning English vocabulary, there are some drawbacks that students experienced. Therefore, the drawbacks do not reduce the use of Duolingo in their independent learning. Duolingo provides speaking material on a stage level that students can pass with their pronunciation. There are also corrector pronunciation features on Duolingo that are really helpful for students. However, some students need to improve their speaking skills through conversation and more about speaking skill material. The stage level on Duolingo asks students to complete or pass all of the levels before going to the next level. Duolingo is equal to all language proficiency levels, starting from the beginning to advanced. That is why some students feel this really hinders them from learning with their proficiency level, they have to repeat from the beginning, and makes them feel bored.

*“Sometimes I think I have enough on this level, I need to jump on the higher level but I cannot skip the levels, so I hope I can skip the level.”*

The material on Duolingo that serves new vocabulary words might be beneficial for students, but there are also some words that are repeated. The repetition of the words makes students

feel they are not enlarging the vocabulary words and feel it is the same as the previous stage or level that they are already encountered.

*“Duolingo application often repeats the words that they have shown us in the previous level, and then they showed us again in the next level.”*

*“I feel like I am not too focused on the question and the material that I found on my smartphone because of the advertisement.”*

The advertisement on the Duolingo application makes some students feel bothered because they cannot learn vocabulary peacefully. Also, students have to pause their learning because they need to watch a few seconds of the advertisement for a while before skipping the advertisement. They need to upgrade their account to a premium Duolingo if they want to be free from the advertisement. The internet connection is the main aspect of running online independent learning, which is Duolingo. It is used for connecting students to the material of vocabulary. There are some students who had some difficulty in internet connection caused by several aspects. Because Duolingo cannot run while offline, some students felt it was a disadvantage because they cannot learn vocabulary more while they have no internet connection.

## **2. Students’ Strategies**

There are some strategies that are used by the students through the use of the Duolingo application for vocabulary learning. The students found several ways to overcome the new vocabulary. Note-taking is the most used strategy in learning vocabulary, and also to maximize the vocabulary learning by Duolingo.

*“When I get new vocabulary, I usually note the words and also find the synonym that I can found. So, when I find another sentence or topic, I can get the meaning also the synonym of the words, so it is easier for me when I have to note and also know the synonym of the words.”*

Some students need to take their notes after receiving new vocabulary words and make some sentences to enlarge their understanding. It was very useful and improved their vocabulary because while taking a note, they also memorized the vocabulary and remembered the use of the vocabulary in the sentences. The strategies of practicing students’ vocabulary are very helpful for some students who practice their vocabulary through communication, practice, and being consistent. Building the language’s vocabulary is an important component of language learning, and one of the main points that will assure that students are successful in this area is consistency. Learning new words and phrases is essential for acquiring fluency in a foreign language, and constancy in practice helps in this process of learning. This will allow students to strengthen their memory and gain confidence in utilizing these words.

The use of context is an essential approach for helping students improve their vocabulary. This means using the clues or suggestions offered in the text that surround an unfamiliar phrase to help students guess the meaning without reading a dictionary. Utilizing context to guess the meaning of new words also means utilizing a dictionary less. Words, phrases, or sentences that appear before, after, or close to the term are included in terms of the use of the context. Many students find it challenging to use context. This method takes time to learn, but students will benefit from detailed instruction and guided practice.



For remembering the material that students have learned in previous studies, they need to do a review of the material after the learning process. This method can be done by writing in a note or studying new sentences. Students like to review all the vocabulary that they got from previous activities and then read it based on its vocabulary context, so they can test themselves to know how far they can understand based on her vocabulary size. Students need to memorize their vocabulary in order to keep their learning and memorize some words that they have learned. There are many ways to memorize vocabulary, such as repeating a word, writing in a note, or studying sentences.

*“I also learned from another website called “Future Learn”, but I think the Duolingo application is like the first thing I look for when I need to learn something.”*

Students who engage in online independent learning are more likely to use a variety of online resources to help them learn language more efficiently and simply. They might be able to increase their vocabulary and level by using these strategies. Some students claimed that in order to make the greatest use of Duolingo, they also needed a second accompanying application to provide the language they were learning more significance. Combining or making a connection between words is an effective method in learning vocabulary because the vocabulary that students use is linked to each other and it makes them memorize a large amount of vocabulary. Some students stated they liked to learn English vocabulary by combining or connecting words that related to each other. If they found the word and looked up the definition, they would link it to another word with the same or similar definition with that word.

## **Discussions**

Based on the description above, it can be seen that the advantages and disadvantages in learning vocabulary through the Duolingo application come from many factors. The advantages that come by using Duolingo applications are increasing motivation, ease to access, popular applications, improving English skills, practice conversation, new learning habits, variety of characters, variety of features, and serving good material. The students have a positive perception of the use of Duolingo as same as the aspect of usability, context, control, connectivity, mobility, blending, content, technical support, and cost (Pramessti & Susanti, 2020). Due to the variety of characters and features, students stated that Duolingo has greatly inspired them to learn English. It is also supported by other studies from Boudadi and Gutiérrez-Colón (2020) a wide range of studies has shown that gamification in education increases student interest, decreases anxiety, improves motivation, and improves learning performance. This keeps the learning process interesting and fun. This study is in line with (Ahmed et. al., 2022) that gamification enhances effective and efficient learning by utilizing game components and game-based thinking. As a result, it has become useful for teaching and studying topics that students find “boring”. Because Duolingo is a learning platform that only requires a mobile phone to be on hand, it makes it more ease and convenient for users to acquire vocabulary in every situation. Due to its popularity and accessibility, Duolingo has an excellent track record among students. The learning method also teaches students new study habits and enhances their English proficiency; some students report feeling more at ease and enjoying learning vocabulary and speaking in English with other students. These findings are also in line with Jones and Shao (2011) as they stated, that learners’ reactions to using new technology are positive, and they consider technology as a suitably combined and well-designed avenue for learning.

Although using Duolingo has several advantages, there are disadvantages to consider as well. Less reading material, less speaking material, lack of features to pass the level, repetition of the words, internet connection, and advertisement are some of the disadvantages that students have expressed when using the Duolingo application. Even though there are numerous benefits to learning new words, certain students have specific requirements that must be met. Because some students find the stage level is too low or high for them, the lesson material on Duolingo also has to be adaptable for students' proficiency levels. Additionally, the repetition of the words at the stage level needs to be decreased for the variety of new vocabulary terms. Additionally, some students find that learning vocabulary in offline mode is more stimulating since there is less distraction and application advertisement, which is Duolingo has yet to provide an offline mode for vocabulary learning.

On the other hand, students have their own methods for maximizing the effectiveness of the Duolingo application for learning vocabulary, including taking notes, looking at the context, being consistent, reviewing previous work, combining words, and using supplementary applications. The strategies to learn vocabulary also in line with vocabulary learning strategies based on Ming Wei's (2007), her classification of strategies: guessing the meaning, perceptions, encoding, activation, management, and sources. After learning new words in Duolingo, students prefer to add notes and build a sentence in order to assist them in understanding the vocabulary better. A study on Hurd and Lewis (2008) that focuses on identifying the word form, meaning, and usage in many contexts it connected with this study because of students' using the word in many contexts to understand the language better. Additionally, if they are unsure of a word's definition, they prefer to consider its context, draw connections from the sentences, and combine words in as many ways as they are capable. They use applications to enhance their vocabulary acquisition in addition to Duolingo exercises, such as the u-dictionary, the Indonesian-English dictionary, and the IELTS collocation. Furthermore, students must be consistent in their vocabulary learning if they want to memorize it effectively. This consistency also helps students use their language in everyday conversations and build confidence. Moreover, students also do a review on their past work to keep on their minds about the vocabulary that they are encountered in their independent learning using the Duolingo application. It is also in line with the study of Xuelian (2018) that students must periodically review their vocabulary if they want to remember it. As a result, students perform better in their vocabulary learning because of reviewing the vocabulary periodically.

## **Conclusion**

Based on the findings and discussion that are explained, the experiences of the students in using Duolingo come from the advantages and disadvantages of the application, such as easy to access, popularity, improving English skills, practicing conversation, new learning habits, variety of character and features, good material, and corrector pronunciation. For the disadvantages are lack of features to pass the level, repetition of the words, distraction, internet connection, and advertisement. Also, some students felt the devices that they used were not supported well in learning vocabulary. Sometimes, students also had difficulties with the speaker because of lack of exposure, different accents, and the speaker's pronunciation. Moreover, there are some errors in their devices and the applications that used to learn vocabulary. It made them need to repeat their task to learn vocabulary.

The student has strategies for maximizing the use of the Duolingo application in learning vocabulary. The research found that using note-taking was the best method for students to

learn vocabulary. Although utilizing the Duolingo application proved challenging, it also helped students in their vocabulary learning. Additionally, the student prefers to add more strategies to have a better experience in learning vocabulary. To improve their vocabulary level, some students also do note taking, have consistent learning habits, look at the context of the text, review the past work, guessing the meaning, combining words, incidental memorization, and use supporting applications.

Overall, the findings indicate that, while Duolingo provides excellent opportunities for vocabulary learning, there is an opportunity for improvement in usability, functionality, and pedagogical support. By addressing these issues, educators and developers can improve the effectiveness and accessibility of language learning tools, allowing students to achieve their language learning objectives more efficiently and effectively.

## References

- Al-Nasser, A. S. (2015). Problems of English Language Acquisition in Saudi Arabia: An Exploratory-cum-remedial Study. *Theory and Practice in Language Studies*.
- Azzouz, Nadia & Gutierrez-Colon Plana, Mar. (2020). Effect of Gamification on students' motivation and learning achievement in Second Language Acquisition within higher education: a literature review 2011-2019. *The Euro CALL Review*. 28. 40. 10.4995/eurocall.2020.12974.
- Braun, V., & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2)., 77-101.
- Cohen, A. D. (2014). *Strategies in Learning and Using a Second Language* (2nd ed.). London and New York: Routledge-Taylor & Francis Group.
- Cohen, L., Manion, L. and Morrison, K. (2000). *Research Methods in Education*. 5th Edition, Routledge Falmer, London. <http://dx.doi.org/10.4324/9780203224342>
- Council of Europe. (2001). *Common European Framework of Reference for Languages: Learning, teaching, assessment*. Cambridge University Press.
- Danesi, M. (2009). *Dictionary of Media and Communications*. New York: M.E. Sharpe.
- DeKeyser, R. (2003). Implicit and explicit learning. In C. Doughty, & M. Long (Eds.), *Handbook of second language acquisition* (pp. 313–348). Blackwell.
- Ellis, N. C. (2015). Implicit AND explicit language learning: Their dynamic interface and complexity. In P. Rebuschat (Ed.), *Implicit and explicit learning of languages*. Benjamins.
- Ergün Öcel, Gizem. (2023). The Impact of Speaking Activities on Writing Skills in English as a Foreign Language (EFL). 1. 14-24.
- Harmer, J. (2007). *The Practice of English Language Teaching*. Harlow: Longman.
- Hatch, E. & Brown, C. (2000). *Vocabulary, Semantics, and Language Education* (3rd ed.). Cambridge: Cambridge University Press.
- Hurd, S. & Lewis, T. (2008). *Language Learning Strategies in Independent Settings*. Bristol, UK: Multilingual Matters.
- Jaelani, Alan. (2020). The Use of Socratic in English Language Teaching Classroom: Students' Perspectives. *Proceeding - iTELL (Indonesia Technology Enhanced Language Learning) 2020*, 19-24.
- Jones, Chris & Shao, Binhui. (2011). *The Net Generation and Digital Natives: Implications for Higher Education*.

- Kapp, K. (2012). *The Gamification of Learning and Instruction. Game-Based Methods and Strategies for Training and Education*. Pfeiffer, San Francisco, CA.
- Kétyi, András. (2016). From Mobile Language Learning to Gamification: An Overlook of Research Results with Business Management Students over a Five-Year Period. *Porta Linguarum Revista Interuniversitaria de Didáctica de las Lenguas Extranjeras*.
- Kohnke, L., Zhang, R., & Zou, D. (2019). Using Mobile Vocabulary Learning Apps as Aids to Knowledge Retention: Business Vocabulary Acquisition. *The Journal of ASIA TEFL*, 16(2), 683-690. *Journal of Asia TEFL*. 16. 683-690. 10.18823/asiatefl.2019.16.2.16.683.
- Larsen and Freeman. (2002). *Techniques and Principles in Language Teaching*. Oxford: Oxford University Press.
- Lodico, M.G. (2006). *Methods in educational research: from theory to practice*/Marguerite G. Lodico, Dean T. Spaulding, Katherine H. Voegtle.
- Lord, G. (2015). "I don't know how to use words in Spanish": Rosetta Stone and learner proficiency outcomes. *The Modern Language Journal*, 99(2): 401–405. [https://doi.org/10.1111/modl.12234\\_3](https://doi.org/10.1111/modl.12234_3)
- Miles, M. B., Huberman, M. A., & Saldana, J. (2014). *Qualitative Data Analysis* (3rd ed.). California: SAGE Publication, Inc.
- Miller, A. R., & Dess, G. G. (1996). *Strategic Management*. McGraw-Hill.
- Nielson, K. B. (2011). Self-study with language learning software in the workplace: What happens? *Language Learning and Technology*, 15(3): 110–129.
- Pramesti, & Susanti, A. (2020). Students' Perception of The Use Of Mobile Application Duolingo For Learning English.
- Putra, N. (2012). *Metode Penelitian Kualitatif Pendidikan*. Jakarta: Rajawali Pers, 41.
- Richards, J and Renandya, W. (2002). *Methodology in Language Teaching, An Anthology of Current Practice*. New York: Cambridge University Press.
- Robertson, A. (2011). Duolingo will translate the internet while teaching languages. *The Verge*. <http://www.theverge.com/2011/12/16/2639262/duolingo-translate-internet-teach-languages>
- Susanto, Herri. "A Study on Students' Difficulties In Learning Vocabulary." *Journey*, vol. 4, no. 2, 2021, pp. 46-50, doi:10.33503/journey.v4i2.1413
- Tunchalearnpanih, P. (2012). Using Games on P.6 Students' Vocabulary Learning.
- Vesselinov, R. & Grego, J. (2012) *Duolingo effectiveness study: Final report*. Queens College, City University of New York.

- Wen, Qiufang. (2003). *The Road to Success in English Learning*. Shanghai: Shanghai Foreign language Education Press.
- Wood, R. T. (2015). *Gamification in Education and Bussiness*. New York: Springer. (2016). *Duolingo: Guide for Leaders in Education*.
- Xuelian, W. (2018). Influence of Behaviorism to English Vocabulary Teaching. *International Journal of Liberal Arts and Social Science*.
- Yang, Shu & Chen, Yi-Ju. (2007). Technology-enhanced language learning: A case study. *Computers in Human Behavior*. 23. 860-879. 10.1016/j.chb.2006.02.015.
- Yunhao, Z. (2011). The Use of Vocabulary Learning Strategies by Good and Poor Language Learners: A Case Study of Chinese Non-English Major Sophomores.

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