Using *Duolingo* Application In Learning Vocabulary: A Descriptive Qualitative Study At The Fifth Grade Of An Elementary School In Sumedang

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Abstrak

The use of technology in education, particularly in language learning, has become increasingly prevalent. Among the numerous language learning applications available, *Duolingo* has gained significant popularity. The research titled "Using *Duolingo* Application in Learning Vocabulary" aims to analyze students' perceptions and to investigate the benefits and challenges that students and teachers find using the *Duolingo* application in teaching and learning vocabulary. This research was conducted in the fifth grade of an elementary school in Sumedang and data were obtained from 18 students namely 10 females and 8 males. The research was conducted using a descriptive qualitative method, which used observation, questionnaires, and interviews as instruments. The findings show that students' perceptions of the use of the *Duolingo* application in vocabulary learning received a positive responses. The benefits of *Duolingo* were also identified (1) students can feel that motivation to learn English by using the *Duolingo* application, (2) students can learn new vocabulary after using the *Duolingo* application, (3) students find it easy to memorize and remember new vocabulary, and (4) students can use vocabulary in daily conversations. However, this research also revealed several challenges, such as a mismatch between the material taught at school and that in the *Duolingo* application, as well as limited access to technology such as laptops and speakers when used in class. The implications of this research show that, with appropriate adjustments and support, *Duolingo* can be an effective tool in improving students' English skills, especially vocabulary. Moreover, it demonstrates the need for improved technological infrastructure and alignment of learning materials.

Keywords: *Duolingo; English for Young Learner; Perception; Vocabulary*

Abstract

Penggunaan teknologi di dunia pendidikan, khususnya dalam pembelajaran bahasa, telah menjadi semakin meluas. Di antara aplikasi pembelajaran bahasa yang tersedia, Duolingo telah mendapatkan popularitas yang signifikan. Penelitian berjudul "Penggunaan Aplikasi Duolingo dalam Pembelajaran Kosakata" bertujuan untuk menganalisis persepsi siswa dan untuk mengetahui manfaat dan tantangan yang ditemukan siswa dan guru menggunakan aplikasi Duolingo dalam pengajaran dan pembelajaran kosakata. Penelitian ini dilakukan di kelas lima sekolah dasar di Sumedang dan data diperoleh dari delapan belas siswa. Penelitian ini dilakukan dengan menggunakan metode kualitatif deskriptif, dengan observasi, kuesioner, dan wawancara sebagai instrumen. Hasil penelitian menunjukkan bahwa persepsi siswa terhadap penggunaan aplikasi Duolingo dalam pembelajaran kosakata mendapat respon yang positif. Manfaat dari Duolingo juga diidentifikasi: (1) siswa dapat merasakan bahwa motivasi belajar bahasa Inggris dengan menggunakan aplikasi Duolingo, (2) siswa dapat mempelajari kosa kata baru setelah menggunakan aplikasi Duolingo, (3) siswa merasa mudah menghafal dan mengingat kosakata baru, dan (4) siswa dapat menggunakan kosakata dalam percakapan sehari-har. Namun demikian, penelitian ini juga mengungkap beberapa tantangan, seperti ketidaksesuaian antara materi yang diajarkan di sekolah dengan materi yang ada di aplikasi Duolingo, serta keterbatasan akses terhadap teknologi seperti laptop dan speaker saat digunakan di kelas. Implikasi dari penelitian ini menunjukkan bahwa, dengan penyesuaian dan dukungan yang tepat, Duolingo dapat menjadi alat yang efektif dalam meningkatkan kemampuan bahasa Inggris siswa, terutama kosakata. Selain itu, penelitian ini juga menunjukkan perlunya peningkatan infrastruktur teknologi dan penyelarasan materi pembelajaran.

Kata kunci: Bahasa Inggris untuk Pelajar; Kosakata, Duolingo; Persepsi

INTRODUCTION

Language skills must be possessed by every human for communication. As a dynamic and complex medium of communication, language acts as a bridge between people of different cultural origins, facilitating the sharing of ideas and experiences on global scale. In today's globalized world, the ability to communicate fluently in multiple languages is becoming increasingly valuable, with English emerging as the lingua franca in areas such as education, commerce and technology.

Taking up a new language, especially English, is becoming a highly significant skill in achieving academic, professional, and personal success (Crystal, 2003). The process of language acquisition, which is an interesting exploration studied from the perspective of cognitive psychology, reveals the complex mechanisms that govern the mastery of a new language such as English, especially significant in the realm of English as a Young Learner (EYL) education as highlighted by (Brown, 2000). When an individual commences learning English, they will encounter various challenges and possibilities. Vocabulary is one of the most important aspects of language proficiency because it enables learners to properly understand and express themselves (Chen et al., 2019). Vocabulary refers to all of the words that humans use while conveying language, whether in written text or spoken speech, and that have meaning. Furthermore, according to Hatch and Brown (1995:1), the definition of vocabulary, is a list of terms for a particular language, as well as a list or collection of words that may be used by speakers of a particular language. In conclusion, English as a Young Learner (EYL) education is a crucial skill for academic, professional, and personal success. The process of language acquisition involves cognitive psychology and complex mechanisms, with vocabulary being a crucial aspect of proficiency. Vocabulary helps learners understand and express themselves, enabling them to effectively communicate in written and spoken language.

Ellis and Brewster (2014) examined children's natural tendencies in language acquisition, showing that they learn most effectively through interactive and play-based activities that appeal to their interests and creativity. The results of this study show that the EYL (English for Young Learners) program places more emphasis on experiential learning, storytelling, singing, playing, and hands-on activities to engage students and make language learning fun and meaningful. Scot and Yterbeg (2010:18) divide young learners into two groups based on age. Their research results show that children in the 5-7 years age group are in Level One, while children in the 8-10 years age group are in Level Two. This division is important to direct the appropriate language teaching approach for each age group.

Translated with DeepL.com (free version)In the context of English as a Foreign Language (EFL), students often face several obstacles in understanding and memorizing vocabulary. These difficulties are caused by a variety of variables, including lack of exposure to local language use, different language origins, and personal learning styles. This emphasizes the complexity of learning vocabulary in an EFL environment, which requires strategies adapted to the different learners' needs and preferences. Regarding memorizing vocabulary, according to (Chen et al., 2019) the lack of vocabulary happens because the lack of motivation and interest in vocabulary learning can also be the cause of difficulties in remembering and understanding vocabulary. When students do not feel interested or motivated to learn vocabulary, they tend to be less focused and less active in internalizing new vocabulary (Dörnyei & Ushioda, 2013). External factors such as academic pressure, overcrowded curriculum, or lack of support from the learning environment could also affect students' motivation level in vocabulary learning. In this context, it is essential for a teacher to first have a strong command of English vocabulary when teaching young learners. This is crucial for helping them grasp the functions, forms, meanings, and practical applications of vocabulary in daily life as stated by Meidi et al., (2023).Therefore, by understanding these factors, educators can design more effective and responsive learning strategies that can help students overcome difficulties in

remembering and understanding vocabulary in language learning, especially in the context of learning English as a foreign language.

Many ways can be used to achieve learning in the world of education. One of these alternative methods or tools is to keep up with current developments by utilizing digital technologies. Digital technologies have greatly impacted how languages are taught and learned, transforming language education. These technologies, such as software and mobile apps, have brought about a new era of accessibility, interaction, and personalized learning. Scholars like Levy and Hubbard (2005) and Warschauer and Healey (1998) have highlighted the potential of digital technologies to cater to different learning preferences, offering learners a range of tools and resources to enhance their language learning journey. Mobile applications, in particular, have become popular among language learners for their ease of use, portability, and convenience (Stockwell, 2010). An example of a mobile app that is changing the way people learn languages is *Duolingo*. Since its launch in 2011, *Duolingo* has become popular among language learners around the world. *Duolingo* attracts millions of respondents by using creative methods such as games, spaced repetition, and artificial intelligence to make language learning fun and effective. Research studies (Vesselinov & Grego, 2012) have demonstrated *Duolingo*'s effectiveness in helping people learn languages and its ability to reach learners who may not have access to traditional classroom learning. However, there are still issues related to technology use and age. In dealing with the issue of age-restricted technology, such as gadgets, parents are at a crossroads between protecting their children from risks and utilizing technology to support learning (Taufik Fikri et al., 2023). With a balanced approach, parents can utilize technologies such as gadgets as tools for engaging learning media.

The previous studies investigated the use of the *Duolingo* app for English language learning at different levels of education. In the first study conducted in a junior high school, the results found that students had a positive perception of *Duolingo* for learning English vocabulary. The study highlighted several advantages of using *Duolingo*, including its easy-to-understand materials, its ability to increase excitement and motivation in learning, eliminate boredom, and encourage new ideas (Jaelani & Sutari, 2020). The second study, also involved junior high school students. The findings found that students generally agreed and responded positively to the use of *Duolingo* for English learning, emphasizing its benefits for students and teachers (Fadilah, 2022). The third study, focused on fifth-grade elementary school students, and the aim of the study was to find a positive effect of using *Duolingo* application on students' reading comprehension (Syafrizal et al., 2022a). The fifth study conducted research on university students. The results showed that most students had a positive perception of *Duolingo* as a useful and helpful app for learning English, although there was a discrepancy between perception and actual use due to time constraints (Inayah et al., 2020). The fifth study explored grade XI vocational students' perceptions of *Duolingo*'s role in improving English language skills. The finding is that distinguishing between positive interpretations associated with satisfaction and negative interpretations stemming from dissatisfaction with *Duolingo*'s content and learning experience (Pammu, 2023).

Based on previous research studies, some of them focused on students in middle and high school. The research from (Syafrizal et al., 2022a) focuses on junior high school, however, this research is focused on students who are still from the lower grades, namely grade 4 elementary school. This is the reason why this study was conducted to investigate how students' perceptions of the duoligo application in in teaching and learning vocabulary and what benefits and challenges students and teachers find in using the *Duolingo* application. Through this focused approach, this research can help in designing learning strategies that are more appropriate to the needs of students, as well as enriching existing teaching methods by utilizing available technology. In addition, the results of this study can also serve as a guide for schools that want to integrate similar learning technologies in their curriculum.

METHODS

This research was conducted using a qualitative descriptive approach. Descriptive qualitative research refers to the research methods and processes, which highlights comprehensive knowledge of a specific phenomena or experience. Therefore, this research approach emphasizes on the description and explanation of the meaning of the subject under research without the need to generate or test a particular hypothesis or theory. According to (Creswell, 2020) , "The methodology section of the qualitative descriptive study, which includes a discussion of research design, data collection, and analysis procedures," According to (Grove et al., 2015) defines qualitative descriptive techniques as "providing a detailed description of a situation as it occurs naturally." As such, this approach is characterized by its emphasis on capturing the richness and complexity of the data, often through observation, interviews or detailed text analysis.

The research source for this study is in an elementary school located in Sumedang, with participants consisting of fifth-grade students aged 9 to 12 years old. The research was conducted in a public elementary school in Sumedang with 18 students namely 10 females and 8 males from fifth grade. The English language subject is a compulsory subject in this school, which is conducted for two hours per week. Participants provided a natural and genuine setting to explore the themes of language acquisition using the *Duolingo* app. This study was conducted using purposive sampling, which is the reason for using this school because no one has previously examined the same research in this school and considering that this school has also used and applied technology as a media of learning.

This study used data collection techniques through direct observation, questionnaires, and interviews to provide valuable insights into how respondents use the *Duolingo* app in learning vocabulary. The questionnaire included 15 questions and 5 likert-scale questions, which allowed respondents to express their opinions on a scale from "strongly disagree" to "strongly agree." the topics covered in the ten questionnaire questions are summarized in table 1 below:

Table 1 topics of questionares

Question/statement	Topics
No. 1,2,3	Awareness of using the application *Duolingo* in learning english vocabulary
No. 4, 5, 6, 7	Interest and benefit in using the *Duolingo* application
No. 8, 9, 10, 11	Features of *Duolingo*
No. 12, 13, 14	The challenges of using the *Duolingo* application
No 15	The recommendation the *Duolingo* aplication a for others

This paradigm includes three data analysis activities: data reduction, data display , and drawing conclusion (Sugiyono, 2015). Data analysis began with data reduction, which involved organizing and simplifying the raw data collected through interviews and surveys. Data display techniques are then used to graphically depict the summarized data in a way that is easy to understand and access. Data conclusion involves interpreting findings to generate overarching themes or narratives that capture the essence of participants' experiences (Sandelowski, 2000). Furthermore, the data obtained from the survey is analyzed by using this formula:

$$P = \frac{f}{n} X\ 100\%$$

P = Percentage

f = frequency of respondents

n = number of samples

FINDINGS AND DISCUSSION

In this section, the researcher delves into the research findings and engages in extensive discussion to answer the fundamental research questions posed in the initial chapter. This study revolves around two research questions. The research questions are to analyze students' perceptions in using *Duolingo* app in vocabulary teaching and learning, and to find out the benefits and challenges found by students or teachers in using Duoligo app in vocabulary teaching and learning.

Students' Perception in Using *Duolingo* App

To answer the first research question, a questionnaire adopted from Syafrizal (2022) which focuses on measuring students' perceptions of using the *Duolingo* application in vocabulary learning based on Marr and Bersntein's perception theory, where perception is the process of seeing and understanding sensory information, and is a complex interaction influenced by various factors. Among these factors are top-down and bottom-up processes.

From the results of the questionnaire, several responses can be found, namely strongly aggre, agree, neutral, disagree, and strongly disagree. As explained by Gracia and Smith (2021) in perception, they state that in seeing and understanding there will be responses that have a sense of satisfaction, and dissatisfaction and some are in between. To answer the first question, the results of the perception of the use of the *Duolingo* application are represented in table 2 below.

Table 2 The Students' Perception of Duolingo Application

No.	Statements	5 (%)	4 (%)	3 (%)	2 (%)	1 (%)	Total
Q1	I know about *Duolingo* as a medium for improving English skills.	3	14	0	1	0	18
		16.6%	77.7%	0%	0.55%	0%	100%
Q2	*Duolingo* is an interesting media to learn English vocabulary.	12	5	1	0	0	18
		66.6%	27.7%	0.05%	0%	0%	100%
Q5	*Duolingo* is very easy to use.	9	5	4	0	0	18
		50%	36%	22.2%	0%	0%	100%
Q15	I would recommend it to other people or teachers to use *Duolingo* in teaching English, especially vocabulary learning.	12	2	3	1	0	18
		66.6%	11.1%	16.6%	0.55%	0%	100%

Based on the table above, it can be concluded that the results show that students' perceptions of using the *Duolingo* application in vocabulary learning are in line with expectations, with the highest percentage of positive responses. This indicates that most students are satisfied with their experience using the app. The presence of this large number of positive responses is in line with the expectation that respondentss will find added value in using *Duolingo* as a learning tool**.**

The first questionnaire results show that the majority of students have a high awareness of *Duolingo* as an English learning tool. A total of 77.7% of students agreed with this statement, while 16.6% of students strongly agreed. No students were neutral or strongly disagreed, only 0.55% of students disagreed. This shows that almost all students have a positive view of *Duolingo* as a medium to improve their English skills. This indicates that most students have a fairly high awareness of *Duolingo* and its role in English language learning. This high percentage of agreement can be interpreted as an indication that *Duolingo* is quite popular and widely recognized by students as a language learning platform. As stated by (Loewen et al., 2020) who stated that language learning applications such as *Duolingo* are increasingly popular among students. Moreover, the low percentage in students' perceptions of the *Duolingo* application as a medium means that every student has a strong opinion about *Duolingo*'s role in English language learning. This consistency is in line with what (Godwin-Jones, 2015) mentioned, that is in positive responses may reflect students' direct experience with the application which makes them quite confident in assessing *Duolingo* as a learning medium.

Second, the majority of respondents strongly agreed that *Duolingo* is an interesting medium to learn English vocabulary, with a percentage of strongly agreeing 66.6% and agreeing 27.7% and 0.05% who answered disagree. Although there were respondents who chose neutral with a percentage of 0.05%, this shows that most of respondents find this app effective and interesting for learning new vocabulary. This may be due to the various interactive features offered by *Duolingo*, such as game-based exercises, point system, and repetition of material that encourages long-term retention. A study by Loewen et al., (2020) found that language learning-based apps like *Duolingo* are effective in developing receptive linguistic knowledge and oral communication skills.

Third, regarding students' perceptions of *Duolingo* being very easy to use, the majority of respondents strongly agreed with a percentage of 50% and agreed with a percentage of 36% that. This shows that respondents feel that the interface and respondents experience of *Duolingo* is very intuitive and respondents-friendly. Research by Vesselinov and Grego (2012) mentioned that one of the main advantages of *Duolingo* is its respondents-friendly design, which facilitates the language learning process. In addition, ease of use is an important factor in the success of language learning applications. Although no one answered disagree, the results show a total of 22.2% in neutral respondents. This suggests that they may find *Duolingo* neither easier nor more difficult to use. It is concluded that there are no significant problems that hinder the use of *Duolingo*, which confirms that the app is generally well received by its respondentss.

Lastly, stating that they would recommend *Duolingo* to others or teachers for use in teaching English, the majority of respondents 66.6% strongly agreed, there were 11.1% agreed, 16.6% neutral, and 0% who answered disagreed, and strong disagreed.This shows that most respondentss feel that *Duolingo* is an effective and useful tool that is worth recommending. In line with what said that *Duolingo* respondentss often experience significant improvements in their language skills, which supports their desire to recommend this application to others.

Based on above, the students' perceptions of using the *Duolingo* app showed the highest positive responses. The perceived ease of use and perceived usefulness are the main factors that influence technology adoption. *Duolingo*, as a popular app, is widely recognized by many people including young learners. In addition to being a suitable media tool for learning vocabulary and easy to use, it is also widely recommended for English learning media in schools by teachers. This creates high awareness and interest among students, which in turn increases the positive response to the app.

Benefit of Using *Duolingo* in Vocabulary Learning

To describe the results of the second research question, namely the benefits and challenges of using the *Duolingo* application in learning English vocabulary. The results were found in questionnaires to students and interviews with students and teachers.

The first section explains the benefits of using the *Duolingo* application in learning English vocabulary. Based on the existing data, there are several benefits gained by some students and also teachers as an educator. These benefits include the *Duolingo* application being useful as a media tool to help students add vocabulary, remember vocabulary, practice vocabulary to daily conversations, and also motivate students to want to continue learning English through vocabulary acquisition assisted by the *Duolingo* application. The results of the questionnaire for each benefit of using the *Duolingo* application in vocabulary learning are included in table 3 below.

Table 3 Benefit of Using Duolingo in Vocabulary Learning

No.	Statements	5 (%)	4 (%)	3 (%)	2 (%)	1 (%)	Total
Q3	Using *Duolingo* enhances my motivation in learning English	5 27.7%	12 66.6%	1 0.05%	0 0%	0 0%	18 100%
Q4	My vocabulary enriched after learning with *Duolingo*	7 38.8%	7 38.8%	1 0.05%	3 16.6%	0 0%	18 100%
Q7	*Duolingo* helps me remember and use new vocabulary in everyday conversation	4 22.2%	8 44.4%	4 22.2%	1 0.05%	1 0.05%	18 100%
Q8	The daily goal feature on *Duolingo* motivates me to consistently practice vocabulary	7 38.8%	6 33.3%	5 27.7%	0 0%	0 0%	18 100%
Q9	*Duolingo*'s flashcards feature helps me memorize vocabulary effectively	7 38.8%	5 27.7%	5 27.7%	0 0%	1 0,05%	18 100%
Q10	*Duolingo*'s "Review" feature helps me review vocabulary effectively	3 16.6%	8 44.4%	2 11.1%	4 22.2%	1 0.05%	18 100%

According to the table above, the data shows that almost all respondents answered with a positive response. The majority of the students found *Duolingo* useful in improving their vocabulary. Thus, the results of this survey have shown the expected satisfaction that *Duolingo* has benefits to help young learners acquire vocabulary and improve their vocabulary.

As can be seen from the table above, the first questionnaire question regarding the benefits of *Duolingo* which is useful for increasing students' learning motivation in learning English received a positive response. A total of 27.7% of students strongly agreed that using *Duolingo* increased their motivation in learning English, while 66.6% agreed with this statement. This high percentage of

agreement shows that most students feel an increased motivation in learning English when using *Duolingo*. The gamification features and interactive approach implemented by the app can make learning more interesting and challenging, which in turn can increase learning motivation (Godwin-Jones, 2015). This is in line with the results of interviews that say things like the following

Excerpt 1

*"Yes, because there are levels that must be completed **so I am motivated** and want to try new words"* (student 4).

Excerpt 2
*"Yes, because there are levels and challenges that **make me curious** and **want to keep playing**."* (Student 7).

It can be seen from the results of the interview above, this shows that the use of *Duolingo* application media in learning English especially for vocabulary learning has significant benefits. They feel the benefits of being motivated in learning English after using the application. In the *Duolingo* application there is a challenge in that want to continue to get good results, so this is what motivates them to want to continue learning.

In addition, a high percentage of 38.8% of students strongly agreed that their vocabulary increased after learning with *Duolingo*, and the same percentage (38.8%) also agreed with this statement. This shows that the majority of students felt an increase in their English vocabulary after using *Duolingo*. The use of repetition and various practice methods in *Duolingo* can help to reinforce the memory of new vocabulary, thus helping students to enrich their vocabulary (Godwin-Jones, 2015) As can be seen from the following interview results

Excerpt 3

*"Yes, I really see a **significant improvement** for the students. They seem to be able to **collect new vocabulary** that has previously been mentioned in Duolingo and then they remember it and write it down on paper, therefore I can try to draw a conclusion **that Duolingo application can improve students' vocabulary**."* (Teacher)

Excerpt 4

*"**We know a lot of English words** (vocabulary), so we also **know their meaning in Indonesian**. I also know how to write the English words.". (student 2)*

Excerpt 5

*"When reading questions that use English, as well as if you see the same thing in the Duolingo application and then with friends like to guess what this English is so **we feel that our English words are added**."* (student 3)

The results above from several interviews conducted mention that adding new vocabulary after using the *Duolingo* application is a significant benefit. They feel directly the difference from before and after using the *Duolingo* application.

However, a low percentage of only 0.05% of students were neutral, and 16.6% of students disagreed that their vocabulary increased after using *Duolingo* Although this percentage is smaller compared to those who agree, it indicates that some respondents may not feel the same benefits. This

could be due to differences in individual learning styles or their level of engagement with the app (Krashen, 1982).

In terms of vocabulary memorization, which is another benefit of using vocabulary, 22.2% of students strongly agree that *Duolingo* helps them remember and use new vocabulary in daily conversation, and 44.4% of students agree with this statement. This shows that the majority of students feel *Duolingo* is effective in helping them integrate new vocabulary into daily use. *Duolingo*'s teaching method that focuses on repetition and contextual application of vocabulary may be a factor supporting this effectiveness (Crowther et al., 2017) This can be seen below

Excerpt 6

"*Provide opportunities for students to learn new vocabulary in a more **interactive and repetitive way** because these ways make students to learn to **remember new vocabulary** words mentioned in the application.*" (teacher)

Excerpt 7

"*And it turned out to be fun for me, I got to know more English words. So it makes it very easy, which was previously lazy to remember English words, because this application **wants to be remembered** because I want to keep adding scores..*" (Student 2)

The results of the interview also mentioned that the benefits of this *Duolingo* application are to train students to continue to remember their new vocabulary, supported by the repetition feature which makes it easy for them to remember the English vocabulary. This supported by the result of this interview

Although most students had a positive view, some respondents did not experience the same benefits in terms of remembering and using the new vocabulary in daily conversation.

Excerpt 8

"*Duolingo questions are different, so this makes it **difficult for me to remember the vocabulary**. I also struggle when it comes to making sentences properly, and I'm not able to understand and grasp the vocabulary mentioned in the voice.*" (student 8).

Based on the results above, respondents said that they could not feel any benefit in remembering vocabulary well. This difference could be due to individual variations in learning styles and frequency of application use (Al-Jarf, 2020).

Regarding the daily goal feature on *Duolingo* is very effective in motivating students to consistently practice vocabulary. A total of 38.8% of students strongly agreed and 33.3% of students agreed that this feature motivates them, while 27.7% of students were neutral and no one disagreed or strongly disagreed. The daily goals feature provides clear and achievable daily targets, which helps students form regular study habits. The reminders and small rewards provided by the app when achieving the daily goals also contribute to increased learning motivation. This is consistent with research showing that specific goals and positive feedback can increase motivation and consistency in learning (Crowther et al., 2017)

Another benefit regarding the flashcards feature on *Duolingo* is that it helps students memorize vocabulary effectively. A total of 38.8% students strongly agreed and 27.7% students agreed with this statement, while 27.7% students were neutral, and only 0.05% disagreed. This highlights that the

flashcards feature allows students to repeat and recall vocabulary through an interactive and repetitive method, which is known to be effective in the memorization process.

Excerpt 9

*"I really like the application, it's good for learning English, it really helps because **there are pictures** too so it **makes it easier to understand** the meaning."* (student 5)

The high percentage results are also supported by the results of the interviews above which mention that the images in the *Duolingo* application help them to be responsive in understanding the meaning of English vocabulary. The use of flashcards in *Duolingo* offers a visual and accessible way to remember new words, which supports improved memory and vocabulary acquisition (Schmitt, 2014)

In addition, it shows that the "Review" feature on *Duolingo* helps students to review vocabulary effectively. A total of 16.6% students strongly agreed and 44.4% students agreed with this statement, while 11.1% students were neutral, 22.2% students disagreed, and only 0.05% strongly disagreed. The majority of students found the "Review" feature useful in strengthening their vocabulary recall. This feature allows students to repeat the vocabulary they have learned, reinforcing memory through scheduled and contextualized repetition. This structured method of repetition has been shown to be effective in vocabulary learning, improving retention through periodic revision (Nation, 2013)

Overall, the majority of students felt that *Duolingo* has benefits in vocabulary learning. These include being an effective tool in helping them improve their English vocabulary, motivating them to study consistently, and supporting them in remembering and using new vocabulary in everyday conversation. However, some students felt neutral or disagreed with certain benefits, signaling the need for a more personalized approach to language learning.

The Challenges of Using *Duolingo* Application

In the second part, to answer the research question of how the challenges faced in using the *Duolingo* application, researchers obtained data from the results of quesionnares and interviews with teacher and students. First, the questionnaire results are summarized in table 4 below

Table 4 The Challenges of Using Duolingo Application

NO	Statements	5 (%)	4 (%)	3 (%)	2 (%)	1 (%)	Total
Q7	Vocabulary practice on *Duolingo* take too much time for me	0 0%	2 11.1%	6 33.3%	8 44.4%	2 11.1%	18 100%
Q11	I sometimes find it difficult to navigate through *Duolingo*'s vocabulary lessons.	1 0,05%	4 22.2%	4 22.2%	5 27.7%	4 22.2%	18 100%
Q12	I feel there is no change in my vocabulary after using *Duolingo*	1 0,05%	4 22.2%	5 27.7%	8 44.4%	0 0%	18 100%

Q13	Learning using the *Duolingo* app is boring	0	1	2	6	9	18
		0%	0,05%	11.1%	33.3%	50%	100%
Q15	*Duolingo* makes it difficult for students to understand and practice vocabulary	2	2	2	7	5	18
		11.1%	11.1%	11.1%	38.8%	27.7%	100%

The questionnaire results show that students' challenges of the *Duolingo* app in learning English vocabulary are mixed. Most students felt neutral or somewhat agreed that vocabulary practice in *Duolingo* was time-consuming, with 44.4% feeling somewhat agreed. A total of 27.7% of students found it somewhat difficult to navigate *Duolingo* vocabulary lessons, and 22.2% agreed, while 44.4% felt there was little change in their vocabulary after using *Duolingo*. The majority of students, 50%, felt that learning using the *Duolingo* app was boring, and 33.3% somewhat agreed. Lastly, 38.8% of students felt *Duolingo* made it difficult to understand and practice vocabulary, and 27.7% agreed. Overall, this shows that although some students found *Duolingo* useful, many found the learning method less engaging and did not see significant changes in their vocabulary, suggesting the need for improvement or a more personalized approach.

In addition, the challenges are found in the results of interviews with teacher and students also. The faces include internet access and the devices used, also the mismatch of vocabulary in the application with learning materials,. The results of the interview will be summarized below.

1. Internet access and devices used

One of the significant challenges identified was inconsistency in internet access and the variety of devices students use to access *Duolingo*. Students with limited or unreliable internet connections struggled to use the app effectively, hindering their learning experience. According to Clark, (2019), reliable access to technology is fundamental to the effectiveness of e-learning tools. Gaps in internet access among students can create a digital divide, leading to unequal learning opportunities. This issue is particularly important in the context of applications that require continuous internet connectivity to function fully, including downloading course materials and participating in interactive activities.

In addition, some students indicated that the use of one laptop for one class was not enough, and they wished for additional devices for the class. Reliance on just one device, often a laptop, provides additional challenges. Laptops, while generally more powerful than mobile devices, are not easily portable, which can limit when and where students can engage with *Duolingo*. According to Venkatesh et al. (2003), perceived ease of use and comfort of technology significantly impact respondents acceptance and usage. When students are restricted to using laptops, they may feel uncomfortable to access *Duolingo* regularly, especially if they have to share the device with other friends or use it for other academic purposes. This can be seen from the interview results below

Excerpt 10

"*One of the biggest challenges of using Duolingo app in learning is to ensure that students have **internet access** or **access to the same device** because some students **do not have smartphones**, so it is a bit difficult to ensure that they also study at home.*"
(Teacher)

Excerpt 11

"*There is, **the internet is sometimes problematic**, **the volume of the speakers is not loud enough,** and sometimes there is **a shortage of laptops so scrambling**. Maybe the way to deal with it, if the internet must first make sure the internet is good, if the tool, in my opinion, at least one group is 1 laptop.*" (Student 1)

As seen above, the challenge is that the internet is not always reliable. Sometimes there is no internet access, or a lot of loading when using the application. In addition, the lack of devices owned by schools is one of the challenges for students and teachers because if students have to use smartphones, it is not allowed as they are still elementary students.

It can be concluded that the majority of respondents mentioned limited internet access and lack of devices as one of their challenges in using the *Duolingo* application. However, some of them also enjoy using only one device, so it does not affect the quality of learning in class.

2.   Mismatch of vocabulary in the app with learning materials

Another challenge is the mismatch between the vocabulary provided by *Duolingo* and the vocabulary required by students' official learning materials. This mismatch can cause confusion and hinder the learning process. Supported by Krashen, (1989) emphasizes the importance of materials that are comprehensible and slightly beyond the learner's current level. When the vocabulary in *Duolingo* is not aligned with the classroom material, it can cause cognitive overload and reduce the effectiveness of learning. As can be seen below

Excerpt 12

"*In addition, another difficulty is that the **vocabulary learned is different from the learning that has been determined so that there is a mismatch**.*" **(teacher)**

As can be seen, the English words that appear on the *Duolingo* app are not relevant and aligned with the materials at hand. As a result, students may encounter vocabulary on *Duolingo* that they have not been exposed to in class, or they may miss key vocabulary expected by their teachers.

In conclusion, there are challenges when using the *Duolingo* application, namely the lack of relevance of the vpcabulary in *Duolingo* application and the material in the classroom. As mentioned in the interview results above

CONCLUSION AND SUGGESTION

This research was carried out to answer three research objectives,: (1) To analyze students' perception of using the *Duolingo* application in teaching and learning vocabulary, and (2) To find out

the benefits and challenges that students or teachers find in using the *Duolingo* application in teaching and learning learning vocabulary

Regarding the first research question, researchers found that students' perceptions of the *Duolingo* application showed generally positive responses. Most students realize the potential of *Duolingo* as an effective tool in improving their English skills, especially in terms of vocabulary mastery. From the second objective, this research identifies various benefits and challenges faced in using the *Duolingo* application in the classroom. The main benefit found was increased student motivation to learn English, with many students feeling motivated by features such as daily goals. Apart from that, this application also helps students increase their vocabulary, memorize vocabulary more effectively, and remember and use new vocabulary in daily life. However, this research also found several challenges faced by students in using *Duolingo*. These challenges include a mismatch between the material taught in schools and that on the app, as well as a lack of technological tools such as laptops and speakers needed to maximize the use of the app. These challenges show that while *Duolingo* has many benefits, there is a need for adjustments and improvements to the infrastructure to improve the student learning experience.

According to the results of the research and analysis that has been carried out, several suggestions can be given to English teachers and students to increase the effectiveness of using the *Duolingo* application in learning English. For English teachers, it is recommended to integrate the material in *Duolingo* with the curriculum taught in class, so that students can see a direct connection between lessons in class and exercises in the application, increasing the relevance and effectiveness of learning. Additionally, holding regular evaluation sessions to discuss students' progress using *Duolingo* can help identify areas for improvement. For students, it is recommended that they be consistent in using *Duolingo* every day. Setting daily goals in the app and working towards them can help strengthen study habits and improve English skills gradually.

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