

Unlocking Language Proficiency: Exploring Duolingo's Impact on Vocabulary Learning

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Abstract

In the modern educational landscape shaped by the advancements of Industry 4.0, technology has become a cornerstone in facilitating student learning. Among the plethora of educational tools available, those tailored to aid English language acquisition, particularly in expanding vocabulary, show significant promise. This study explores the integration of the Duolingo application as a key tool for enhancing English vocabulary acquisition within the context of the course, designed for junior high school students. The study's objectives were two-fold: first, to integrate Duolingo into course curriculum, and second, to assess student perceptions following engagement with the application. Using a descriptive qualitative research approach, the study involved 10 grade 7 junior high school students as participants. Data collection methods included observation, interviews, and documentation. Findings indicated that all students displayed proficiency in navigating the Duolingo interface, expressing enthusiasm for its use in vocabulary learning. However, two students faced challenges due to intermittent internet connectivity, highlighting the need to address infrastructure limitations. Feedback from students highlighted Duolingo's engaging features and effectiveness in vocabulary practice, yet concerns about intrusive advertisements and internet dependency were noted, suggesting areas for improvement in the user experience. In conclusion, while Duolingo shows promise in enhancing vocabulary acquisition in educational settings, addressing technical challenges and refining user interface elements are crucial for maximizing its usability and efficacy.

Keywords: Vocabulary; Duolingo Application

1. Introduction

Education in Indonesia continues to develop every year, especially in the field of technology. Technological developments in the industrial era 4.0 make it easy for students to carry out learning activities. Education 4.0 is the application of technology in the learning process to fulfill the interests and talents of students. Technology in the learning process is more varied, and it is suggested that it can work to help students, organize, and provide materials, and help student interact with teachers, parents, and anywhere they want. (Bajcsy in Ambara, 2020). The diverse applications of technology in the learning process, as demonstrated by studies on the Duolingo application, showcase its potential to not only assist students in organizing and accessing materials but also to foster interactive engagement with teachers, parents, and the flexibility of learning from any location. However, as people embrace these technological advancements, it is



crucial to strike a balance, considering potential drawbacks and ensuring that technology supplements, rather than replaces, essential elements of a holistic educational experience.

Technology in the world of education is very influential and supports activities in the world of education. The development of technology that is used wisely inside and outside the classroom can help learning activities to be effective, efficient and creative. The development of information and communication technology can be integrated in the learning process to encourage student creativity. Along with the advancement of technology, students in the digital era are maturing and integrating digital and online devices into their lifestyle. All students between the ages of 5 and 24, 77.42 percent use cell phones and 17.30 percent use computer devices (Direktorat Statistik Kesejahteraan Rakyat, 2021). Children aged eight and under use cell phones for an average of 2.5 hours a day and the percentage of that time using mobile devices triples.

Education in Indonesia implements an independent curriculum where English lessons in elementary schools are taught as elective subjects and are not compulsory. This of course makes it difficult for students to enter a higher level, namely junior high school. Yogi Anggraena (in Aida, 2023) said that currently English lessons in the independent curriculum in elementary schools are optional subjects. This makes many elementary schools not implement English subjects. As a result, many students when entering junior high school have difficulty in English lessons because of the students' small vocabulary.

The inability to read, write, speak and listen to English can be hampered by a lack of vocabulary (Sukarya et al., 2022). Therefore, in order for students to learn English well, students must have a wide vocabulary and start mastering word by word to support their vocabulary improvement. This is inseparable in learning a language. If students do not have a large vocabulary, then students will have difficulty speaking, writing and listening, students also have difficulty understanding English texts and answering questions. students do not know the meaning of words in English texts because students' vocabulary knowledge is low. Kolawole (in Kakomole' et al 2022) showed that many people have difficulty learning English due to many obstacles, such as lack of teacher time to teach, ineffective teaching methods, and lack of teaching staff who are experts in their fields. Most Junior High School students have difficulty in mastering English vocabulary, so the right learning methods and media are needed to overcome this.

Based on the above facts, the researcher made an innovation to implement the Duolingo application for junior high school students' English classes. The many features of the Duolingo application allow students to use it for learning. The researchers used Duolingo because it provides many English materials that can help students learn English, especially vocabulary. The Duolingo app is an application used to improve Language. The Duolingo application not only provides English, but there are also German, Turkish, and Arabic. In the Duolingo application, students can get interesting language learning, such as: being able to learn vocabulary through images that can help students visualize the meaning of words and facilitate understanding and memory, learn daily life sentences, and pronounce words in the language they want to learn through mobile or web-based applications. This application uses repetitive exercises to help students remember vocabulary better. Duolingo uses a reward system, such as level points to give feedback to students for completing missions well. If the mission is not successfully passed, then the student cannot continue learning to the next level.

Such as the research that focused on vocabulary improvement conducted (Widyastuti & Kusumadewi, 2018). Duolingo application can improve the competence of English language teachers at Omega Sains Institut. Then research Yuwono (2022) also found that the students in the seventh grade can effectively learn vocabulary with the Duolingo application, Mts. Gondang Wonopringgo Pekalongan, in the 2018–2019 academic year. Research conducted Aisyah & Hidayatullah (2023) also found that the Duolingo application can improve students' vocabulary acquisition due to its supporting elements, which include initial ability analysis, involving students' emotions, repetition, and practice questions. The research studies presented offer valuable insights into the advantages and disadvantages of utilizing the Duolingo application for vocabulary improvement. Widyastuti & Kusumadewi's study showcases a positive aspect, emphasizing that the Duolingo app enhances the competence of English language teachers at Omega Sains Institut. This underscores the potential for professional development and skill enhancement through the application. Likewise, Yuwono's research on seventh-grade students at Mts. Gondang Wonopringgo Pekalongan highlights the effectiveness of Duolingo in facilitating vocabulary learning, providing a beneficial tool for educators in enhancing students' language skills. On the other hand, Aisyah & Hidayatullah's study reveals positive outcomes, demonstrating that Duolingo's supporting elements, such as initial ability analysis, emotional involvement, repetition, and practice questions, contribute to improved vocabulary acquisition. However, it's essential to consider potential disadvantages, such as over-reliance on technology and the need for a balanced approach to language learning to ensure comprehensive skill development. In this case, it indicates the importance of exploring how the implementation of Duolingo varies across different language course institutions, taking into account the differences in their respective visions and missions.

The researchers used Duolingo because the platform offers an innovative and widely accessible approach to learning, which fits the trend of technological developments in language learning. The application of Duolingo in language course institutions has been relatively scarce in previous research studies. The presence of an English language course institution as a research partner provides a relevant context and provides a formalized learning method to its students. Tutors in an English course institution often face challenges in finding effective teaching methods and materials to motivate students in vocabulary learning (Martiarini et al., 2020). The use of Duolingo in this course provides an opportunity to observe how the integration of technology in formal learning methods can affect students' learning experiences and

outcomes. In addition, the presence of the course institution as a stakeholder adds a practical dimension and provides a stronger basis for the generalization of the results of this study in the context of formal English language learning.

Therefore, the purpose of this research is to implement Duolingo application in English vocabulary learning and to find out student's perception towards Duolingo application. The researchers chose STAR course as the research location because of the relevance of the research theme to the focus of the institution. In English language teaching, course has a mission to improve students' vocabulary to support their speaking, listening, reading, and writing skills. course can be considered as a representation of the English learning context in a language course where the use of Duolingo becomes relevant. The selection of a course institution that fits the research theme ensures that the research results can provide insights related to the experience of using Duolingo in the context of English language learning.

Vocabulary

Vocabulary is the basis of the language that we speak every day if there is no vocabulary, then communication will not occur. According to Thornbury (in Kakomole¹ et al., 2022) No information can be conveyed orally or in writing without grammar or vocabulary. Learning a language must be accompanied by learning and mastering vocabulary. Mastering vocabulary is as important as mastering other language skills and components. Research results Susanto (2017) in his research entitled "The Teaching of Vocabulary: A Perspective" which states that the importance of vocabulary in language learning. In order for learners to understand the language, mastery of vocabulary is very important.

Hatch and Brown (in Susanto 2017) mentions two kinds of vocabulary, namely receptive vocabulary and productive vocabulary. Receptive vocabulary includes all the words that one recognizes and understands when hearing or reading them. Productive vocabulary, on the other hand, includes all the words that a person can create (write and speak). Productive vocabulary is arguably an active process, as learners can generate words to express their thoughts to others (Stuart in Susanto, 2017). Understanding the dual facets of vocabulary, involving both receptive and productive dimensions, sheds light on their active and indispensable role in the process of language acquisition.

Vocabulary Learning

Learning foreign language vocabulary is very important to understand its meaning. If students do not know the meaning and meaning of a vocabulary, then students will have difficulty in learning a language. Siriwan (in Tiana, 2021) argues that to know a word, one must at least understand its basic meaning, its form, and the way it is used effectively and receptively. This includes an understanding of the word form, which includes its spelling, tone, and parts.

Using pictures, real objects and synonyms, imitating, defining, modeling, and translating are eight common approaches to teaching vocabulary. According to Lewis and Hill (in Farjami & Aidinlou, 2013) Even if students master all the grammatical aspects of the language, they cannot communicate when they do not know the word they need. Communication comes to a halt and cannot continue.

The use of digital technology media is an alternative to how to provide vocabulary learning to students. According to the previous research Pradini & Adnyayanti (2022), their research investigated students' vocabulary using Wordwall. The aim of the study was to improve young learners in SDN 1 Mambang in their vocabulary using Wordwall. This study has shown the results of the students' average score in the pre-test 53.33, increased to 73.33 in the post test. With this result, it shows that Wordwall can be a media to improve students' vocabulary. Ajisoko (2020) also conducted quantitative research on improving English vocabulary which focused on how students at the University of Borneo Tarakan used the Duolingo application to improve student vocabulary at the University of Borneo Tarakan. From this study, it was also found that there was an increase in scores from the pre-test average score of 44.75 to reach the post-test average score of 59.75, which indicated that the use of the Duolingo application could improve vocabulary skills. From these two studies, it provides an explanation that the use of digital technology media in learning can have a significant effect in improving students' vocabulary skills.

Duolingo Application

Duolingo application is a mobile or web-based foreign language learning application. Duolingo is available in two versions, namely for students and for teachers. For students duolingo provides several exercises and quizzes, grammar and vocabulary grouped by level. While for teachers Duolingo provides student management and English curriculum management, assignment preparation, monitoring class activities and providing tests, online feedback and assessments. These features have many benefits for teachers (Zamzami, 2019). This application is designed for beginner learners to learners who are already proficient in foreign languages. This application is designed for various groups from early childhood to old age. The Duolingo application provides features such as vocabulary exercises, listening exercises, and reading exercises. To help users expand their vocabulary in the chosen language, the application provides various reading, listening, and vocabulary exercises. In addition, the application has features that allow measurement of user progress and feedback that helps improve students' language skills.

According to Anisa Dwi Tiara, M. Arinal Rahman (2021), students can use technology apps like Duolingo to play and learn English. Duolingo is a free language learning platform developed by Luis Von Ahn and Severin Hacker in 2012. Duolingo offers a fun and non-boring way to learn languages. There are many features of Duolingo that can help students learn languages quickly, such as creating word lists every day, talking with other users to share, and getting more experience

for advanced learners. Therefore, it highlights Duolingo's value as an engaging language-learning platform, offering various features that enhance the effectiveness of English learning through enjoyable interactions.

2. Method

This study employed a descriptive qualitative research design, aligning with Sugiyono's characterization of qualitative research as a naturalistic inquiry conducted in authentic settings. The research focused on gathering insights from 10 seventh-grade students enrolled at a junior high school. Data collection methods included observation, interviews, and documentation. Observations were documented through field notes, capturing the implementation of Duolingo in English learning. Structured interviews were conducted, guided by predetermined questions aimed at systematically exploring students' experiences before and after engaging with Duolingo. The selection of interviewees followed a purposive sampling approach, considering factors such as students' activity levels, learning progress, and perceived benefits from using Duolingo. Additionally, documentation was utilized to supplement insights into students' experiences with Duolingo implementation. Following data collection, the researchers organized and synthesized the data. This involved identifying key patterns and themes emerging from observations and interviews. The data were then categorized, allowing for a systematic analysis of each theme's implications for Duolingo's implementation and students' perceptions. A descriptive analysis was conducted to delve into the nuances of Duolingo's integration into English vocabulary learning and students' corresponding perceptions. Triangulation of data involved comparing findings from observations and interviews to ensure comprehensive understanding and validity. Ultimately, the researchers compiled their findings into a comprehensive report, offering a detailed examination of Duolingo's implementation and its impact on students' learning experiences. This systematic approach provided rich insights into the effectiveness and challenges of using Duolingo as an English vocabulary learning platform within the STAR Course context.

3. Findings and Discussion

The Implementation of Duolingo as English vocabulary learning tools

In this research, the researchers identified how the implementation and what are the perceptions of students in using Duolingo as their platform in learning English vocabulary. Researchers have observed 10 students in grade 7 while learning vocabulary in STAR course to find out about the implementation and experience of using Duolingo as a vocabulary learning tool.

Tabel 1. Observation of Implementation Duolingo

Indicators	Percentages
Students can understand a brief explanation of the implementation of the Duolingo application.	100%
Students can operate each feature of Duolingo well and easily.	80%
Students feel happy learning English vocabulary using Duolingo.	100%

The observation results indicate that all students can comprehend a brief explanation of the implementation of the Duolingo application (100%). About 80% of the students are proficient in operating each feature of Duolingo effectively and easily. It is noteworthy that during the use of the Duolingo application, 2 students faced challenges related to internet connectivity. Additionally, all students express happiness in learning English vocabulary using Duolingo (100%). Nevertheless, the overall observation outcomes demonstrate a positive reception regarding students' understanding, operational skills, and satisfaction in using the Duolingo application for English vocabulary learning. Figure 1 below showed students successfully answering correctly the questions given through picture illustrations. Students were happy because they initially did not know the vocabulary but through the picture, they could guess it easily. In picture 2, students successfully matched the vocabulary pairs correctly.



Figure 1: Picture guessing exercise



Figure 2: Vocabulary Pair-Matching Exercise

Student's perceptions using Duolingo

After the researchers implemented Duolingo application, a student was interviewed by the researchers about their experience in learning English vocabulary and their perception about the application of Duolingo application for learning English vocabulary.

The interview questions were as follows:

1. Do you like English? Why?
2. How do you learn and improve your English vocabulary?
3. Do you have any obstacles in learning English?
4. Are there any obstacles in learning English vocabulary?
5. Have you ever learned vocabulary using other application besides Duolingo?
6. Have you ever used Duolingo before?
7. Did you find any problems when using Duolingo application?
8. What do you like about the Duolingo application?
9. Does Duolingo help in learning English words?
10. Are there the disadvantages of Duolingo? Mention!

In questions 1 to 4, the researcher explored how students' perceptions recognize their previous experience of learning English vocabulary. In response to the first question, student answered that they like English because it is an international language and that when one can speak English, student can interact with foreigners. Student also said that learning English is fun. However, it is sometimes difficult to understand, people can travel around the world and travel abroad if people can speak English fluently, and being able to speak English can help people relate to each other between each other.

In question 2, the researchers inquired about the methods employed by students to enhance their English vocabulary skills. The responses revealed that students employ English-Indonesian translation dictionaries as a tool for improving vocabulary, and some students also utilize YouTube videos as a resource for learning English vocabulary. The findings highlight the diverse strategies students employ, ranging from traditional tools like translation dictionaries to modern resources like online videos, emphasizing the multifaceted nature of language acquisition approaches among students.

In question 3, the researchers explored the obstacles students encounter in learning English. According to the responses, student expressed a lack of confidence arising from limited vocabulary knowledge, and some also faced difficulties attributed to an insufficiently supportive learning environment. This interview outcomes underscore the importance of addressing not only linguistic hurdles but also psychological and environmental factors influencing students' English language learning, emphasizing the need for comprehensive support mechanisms.

In question 4, the researchers inquired about any obstacles hindering students from learning English vocabulary. Student responded that a significant challenge in learning English, particularly vocabulary, is the tendency to forget new words soon after encountering them. So that, the feedback highlights a common difficulty faced by students in retaining newly learned vocabulary, suggesting a potential area for targeted interventions and memory-enhancing strategies in English language education.

In questions 5 to 10, the researchers sought to explore student's experiences regarding the use of Duolingo as a platform for learning English vocabulary. In question 5, the researchers inquired whether students had utilized any vocabulary

learning applications other than Duolingo. The student reported using the Hello English application, while others occasionally abstained from employing mobile applications entirely in their English learning endeavors. The diverse responses regarding the utilization of alternative vocabulary learning applications underscore the varied preferences and practices among students, emphasizing the need for a nuanced understanding of their individual learning approaches and choices in language acquisition.

In question 6, the researchers inquired whether students had previously utilized Duolingo. The student responded affirmatively, stating that they had never used the Duolingo application. The findings indicate a lack of prior engagement with the Duolingo application among the student surveyed, suggesting a potential opportunity for introducing and exploring the benefits of this language learning platform in the context of their vocabulary acquisition endeavors.

In question 7, the researchers inquired whether students encountered any issues with the Duolingo application. The students responded that they found no issues or difficulties when using the Duolingo application. The positive feedback regarding the seamless experience with Duolingo suggests a user-friendly interface and smooth functionality, which could contribute to its appeal as a language learning platform among the students surveyed.

Question number 8, the researchers inquired about the aspects of the Duolingo application that students appreciate. The student answered that the Duolingo application is fun because there are funny characters and short challenges. Duolingo also has diamond rewards that are given to student if they successfully complete the mission. Student also answered that using Duolingo does not feel like learning because it looks like a game. The Duolingo application also has many learning materials that are easy and simple to use.

In question 9, the researchers inquired whether Duolingo was effective in aiding English vocabulary learning. The students affirmed this, citing successful completion of practice questions and challenges as evidence of the platform's efficacy. The positive responses regarding Duolingo's contribution to English vocabulary learning, as demonstrated by successful engagement with practice questions and challenges, underscore its potential as a beneficial tool for students seeking to enhance their language skills.

In question 10, the researchers inquired about the drawbacks of using Duolingo. The student pointed out that an inconvenience arises when an advertisement unexpectedly appears during their sessions, causing a disruption in concentration. Additionally, the student noted that Duolingo is dependent on an internet connection for optimal functionality. While Duolingo proves to be a valuable language learning tool, the mentioned issues such as interruptions from advertisements and reliance on internet connectivity highlight potential drawbacks that need consideration for a more seamless and user-friendly experience.

The findings from both the pre- and post-experience interview in the STAR course, along with the use of the Duolingo application, offer comprehensive insights into students' perceptions, learning strategies, and experiences in English vocabulary acquisition. The initial set of questions (1-4) delved into students' overall attitudes towards English, revealing a positive sentiment towards its global significance and the enjoyment derived from language learning. The subsequent questions (5-10) focused on the specific use of Duolingo, uncovering students' varied experiences, preferences, and challenges. Notably, students demonstrated a diverse array of strategies for vocabulary enhancement, including traditional tools and modern resources. While Duolingo received positive feedback for its entertaining features, effective vocabulary practice, and user-friendly design, drawbacks such as interruptions from advertisements and internet dependency were also identified. Overall, the study emphasizes the importance of understanding individual learning approaches, addressing obstacles, and maximizing the potential benefits of language learning platforms like Duolingo in an educational context.

Discussions

The observation results depicting high comprehension levels and proficiency among students in utilizing Duolingo for English vocabulary learning reflect a promising picture of the application's effectiveness. The positive reception, coupled with students' expressions of happiness, underscores the potential for Duolingo to enhance language acquisition. However, the noteworthy challenges related to internet connectivity raise concerns about the accessibility and reliability of the platform, which may hinder a seamless learning experience. The comprehensive insights gained from pre- and post-experience interviews within the STAR course further enrich the discussion by revealing the multifaceted nature of students' approaches to English vocabulary acquisition. The positive attitudes towards English, enjoyment in language learning, and diverse strategies employed, as indicated in the initial set of questions, affirm the significance of incorporating varied tools and resources. Despite the commendations for Duolingo's entertaining features and effective vocabulary practice, the identified drawbacks, including interruptions from advertisements and internet dependency, highlight areas for improvement. This prompts a critical reflection on the need for refining the user experience to mitigate potential disruptions, ensuring a more effective and user-friendly language learning environment. In conclusion, while the overall findings suggest a positive impact of Duolingo on English vocabulary acquisition, careful consideration of identified drawbacks is crucial for optimizing its effectiveness in educational settings.

4. Conclusion

The research findings highlight a positive overall reception among students regarding the implementation of the Duolingo application for English vocabulary learning in STAR course. The observation results underscore that all students have a solid understanding of the application's features, with 80% demonstrating proficiency in its operation. It is

noteworthy, however, that challenges related to internet connectivity were identified during the use of the Duolingo application. Despite these challenges, the students express universal satisfaction and happiness in utilizing Duolingo for English vocabulary acquisition. From my perspective, this indicates a promising potential for Duolingo as an effective and enjoyable language learning tool. The pre- and post-experience interviews in the STAR course further enriched our understanding, revealing positive attitudes towards English learning and diverse strategies employed by students. While Duolingo was praised for its entertaining features and effective vocabulary practice, it is essential to address issues such as advertisements and internet dependency for an enhanced user experience. Overall, these findings emphasize the need for a nuanced approach in integrating technology like Duolingo into language education, taking into account both its benefits and potential drawbacks.

Because Duolingo is available via web and mobile application, students can use it anytime and anywhere. The application allows students to learn languages flexibly, both when they have little free time between daily activities and when students have more time to focus on learning. Students can access language courses and exercises whenever they want, according to their schedule and preferences. The researcher can conclude that duolingo application can be applied to STAR Course students and effectively improve students' vocabulary.

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