Duolingo Application as a Vocabulary Learning Tool Used by Students of Tadris Bahasa Inggris in STAIN Madina

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ABSTRACT

This research aims to see the effectiveness of Duolingo as a vocabulary learning tool in building the vocabulary skills of English Language Education students at STAIN Madina semester 1. This study also explores how this application motivates students in independent learning and identifies its advantages and disadvantages. Quantitative methods were used involving 22 students as samples. Data was gathered via pre-tests and post-tests to measure the increase in vocabulary skills, as well as questionnaires to determine students' perceptions of using Duolingo. The findings showed an obvious increase in students' vocabulary skills after employing Duolingo, with an average pre-test of 62.4 and a post-test of 78.1. The paired t-test represents a p-value of 0.000 (p <0.05), which means that using Duolingo effectively improves vocabulary skills. In addition, 80% of students reported increased motivation in learning vocabulary through this application. However, some students identified limitations in the application content that focuses more on everyday language. This study concludes that Duolingo is an effective learning tool and can motivate students to learn vocabulary independently according to academic needs.

Keywords: Duolingo, Vocabulary Learning, Learning Apps

ABSTRAK

Kajian ini bermaksud untuk melihat efektivitas aplikasi Duolingo sebagai alat pembelajaran kosakata dalam membangun kemampuan kosakata mahasiswa Tadris Bahasa Inggris di STAIN Madina semester 1. Penelitian ini juga mengeksplorasi sejauh mana aplikasi ini memotivasi mahasiswa dalam pembelajaran mandiri serta mengidentifikasi kelebihan dan kekurangannya. Metode kuantitatif digunakan dengan melibatkan 22 mahasiswa sebagai sampel. Penghimpunan data diperoleh lewat pre-test dan post-test dalam mengukur peningkatan kemampuan kosakata, serta kuesioner untuk mengetahui persepsi mahasiswa terhadap penggunaan Duolingo. Temuan menunjukkan bahwa terdapat kenaikan signifikan dalam kemampuan kosakata mahasiswa setelah menggunakan Duolingo, dengan rata-rata skor pre-test 62,4 dan post-test 78,1. Uji t berpasangan memperlihatkan p-value sebesar 0,000 (p < 0,05), ini menggambarkan penggunaan Duolingo efektif dalam meningkatkan kemampuan kosakata. Selain itu, 80% mahasiswa melaporkan peningkatan motivasi dalam belajar kosakata melalui aplikasi ini. Namun, beberapa mahasiswa mengidentifikasi keterbatasan konten aplikasi yang lebih berfokus pada bahasa sehari-hari. Penelitian ini menyimpulkan bahwa Duolingo merupakan alat pembelajaran yang efektif dan dapat memotivasi mahasiswa dalam belajar kosakata secara mandiri sesuai dengan kebutuhan akademik.

Kata kunci: Duolingo, Pembelajaran Kosakata, Aplikasi Pembelajaran

A. Introduction

Enveloped in the current digital era, the engagement of technology in education has become a necessary aspect that cannot be ignored. Teachers, as the main facilitators in the learning and teaching process, are required to not only master technology but also be able to innovate and be creative in its use as a learning medium. It is in accordance with the view that "teacher creativity and innovation are the keys to maximizing the potential of technology in supporting effective and enjoyable learning processes" (Smith, 2021). Teacher creativity in the use of technology not only increases student engagement but can also stimulate deeper and more meaningful learning (Jones & Brown, 2020).

The importance of innovation in teachers' use of technology is further emphasized in various studies, which show that innovative teachers tend to be able to present more dynamic and adaptive learning environments. For example, research by Anderson et al. (2019) found that teachers' use of creative technology-based learning applications can significantly increase student motivation and learning outcomes. In addition, innovative technology integration can also help teachers overcome various challenges faced in learning, such as limited time and resources (Williams & Clark, 2022).

However, despite the enormous potential offered by technology, there is still significant defiance in its implementation. One of the main reasons for defiance is the lack of coaching and endorsement for teachers to develop the skills needed to use technology creatively and innovatively (Johnson & Wilson, 2020). Without adequate support, many teachers feel unconfident in integrating technology into their teaching practices (Martinez, 2019).

Therefore, this study aims to analyze various forms of creativity and innovation applied by teachers in using technology as a learning medium, as well as exploring the factors that influence their ability to innovate. Understanding these dynamics is expected to provide deeper insight into how technology can be used effectively in education and how teachers can be supported to be more creative and innovative in their teaching practices. From the explanation above, this study will look at the utilization of "Duolingo Application As A Vocabulary Learning Tool In Students Tadris Bahasa Inggris STAIN Madina". The questions in this study:

1. How effective is the utilization of the Duolingo application as a vocabulary learning tool in improving the vocabulary skills of Students Tadris Bahasa Inggris STAIN Madina?

2. To what extent can the Duolingo application motivate Students Tadris Bahasa Inggris STAIN Madina to learn English vocabulary?

3. What are the advantages and disadvantages felt by Students Tadris Bahasa Inggris STAIN Madina when using the Duolingo application for vocabulary learning?

4. What is the role of the Duolingo application in facilitating independent vocabulary learning for students at Tadris Bahasa Inggris STAIN Madina?

5. Is there a significant difference in English vocabulary mastery between Students Tadris Bahasa Inggris STAIN Madina who use the Duolingo application and those who do not?

Teaching Creativity

Teaching creativity in education involves various strategies and factors. Creative teaching is considered adept at involving students, solving problems in challenging situations, and introducing innovation in teaching methods (Ismayilova & Laksov, 2022). Effective approaches include engaging students in fun tasks, encouraging verbal presentations, and promoting evidence-based arguments (L. Lunevich, 2021). Teaching positive creativity requires providing students with tools to define and maintain their understanding of what makes creativity useful (Sternberg & Chowkase, 2021). Personal attributes such as imagination and environmental factors such as department culture play a crucial role in enabling creative teaching praxis (Ismayilova & Laksov, 2022). Overall, fostering creativity in education involves a combination of teacher creativity, student engagement, and a supportive institutional environment.

Teaching Innovation

Overall, teaching innovation is essential for higher education institutions to remain competitive and equip students with the skills needed for future jobs that may not yet exist (Mattioli et al., 2023). Teaching innovation encompasses scientific advances, technological breakthroughs, and cutting-edge approaches to engage students effectively (Teo, 2022). Research shows that teaching innovation is positively in tune with student evaluations of teaching, particularly during the COVID-19 pandemic, highlighting the importance of pedagogy innovation in improving teacher motivation and performance (Lin et al., 2022). Innovative teaching methods can

include the development of bilingual teaching materials, videos, and software manuals to integrate research techniques across subjects and degree levels (Sáez-Pérez et al., 2021). These approaches aim to provide students with practical and applied experiences that have direct professional implications.

Teachers in the 5.0 Era

The 5.0 Society Era presents significant challenges for educators, requiring them to adapt and develop new competencies. The main obstacles include human resources, learning methods, and technological devices (Supa'at & Ihsan, 2023). To overcome these defiances, educators must improve their digital literacy and embrace self-determined learning approaches (Ettyani et al., 2023). Teachers are expected to be lifelong learners, learning leaders, and communication facilitators (Ettyani et al., 2023).

Duolingo Application

Duolingo is a popular mobile-assisted language learning (MALL) application utilized by over 300 million people worldwide (Shortt et al., 2021). It offers challenging tasks, rewards, systematic levels, and user rankings, making it an engaging platform for language learners (Shortt et al., 2021). Research on Duolingo from 2012 to 2020 has primarily focused on app design rather than learning outcomes, with a preference for quantitative methods and non-probability sampling (Shortt et al., 2021). While Duolingo is adequate for beginners, particularly in vocabulary acquisition (Nantes et al., 2018; Ritonga et al., 2022), it may have limitations in developing oral skills (Nantes et al., 2018) and supporting advanced learners (Ritonga et al., 2022). A study on self-directed learning using Duolingo revealed that ecological factors significantly influence learning strategies and persistence, with participants experiencing limited learning outcomes and decreased motivation over time (Isbell et al., 2017).

B. Research Method

It is an experimental quantitative design with a pre-test and post-test. This design is often employed to evaluate the efficacy of an intervention by measuring the results before and after the treatment is given. According to Fraenkel & Wallen (2009), this design is one of the simplest and most effective experimental research methods to see the changes caused by a treatment. In this case, the treatment in question is the utilization of the Duolingo application as a vocabulary learning tool.

The research population is all English Language Education students at STAIN Madina in semester 1. Meanwhile, the sample of this study involved 22 students selected using purposive sampling techniques, where the students selected were those who had relatively uniform levels of vocabulary ability and met certain criteria. Creswell (2012) explains that purposive sampling allows researchers to choose research subjects that are relevant to the focus of the research so that the results obtained are more valid and in accordance with the objectives of the study.

English vocabulary test was used as an instrument for this research, consisting of 1) a Pre-test held before the intervention to measure students' initial vocabulary skills. 2) Post-test: Conducted after the intervention to measure the increase in vocabulary skills after using Duolingo. Brown (2004) stated that language ability tests, including vocabulary tests, are one of the most effective ways to measure linguistic competence. In this study, pre-tests and post-tests were used to see the extent to which the Duolingo application can affect vocabulary improvement.

Research Procedure:

a. Pre-test: All participants were given a pre-test to measure their initial English vocabulary skills before using the Duolingo application.

b. Intervention: Participants were given four weeks to use the Duolingo application intensively, with a minimum duration of 30 minutes per day. The vocabulary material studied is common and often encountered in the context of English language education.

c. Post-test: After four weeks, participants were re-tested with a post-test to measure the increase in vocabulary mastery after using the Duolingo application.

d. Data Collection: The outcomes of the pre-test and post-test from each participant were collected for further analysis.

The data collected were the pre-test and post-test scores from 22 participants. Data analysis will be conducted using a paired t-test. This test will be utilized to contrast the pre-test and post-test results to assign whether there is a meaningful increase in vocabulary mastery subsequent to intervention put on the Duolingo application. Field (2009) emphasized that the paired t-test is a powerful statistical tool for analyzing changes in one group measured at two different times. It is very suitable for use in this study because the researcher wants to see the difference between the scores before and after the treatment.

C. Result and Discussion

Below is the acquisition of the study presented in the form of a table based on data from 22 English Language Education students of STAIN Madina semester 1. This table presents a comparison of the acquisition of the pre-test and post-tests as well as relevant statistical analysis to rejoinder the study question regarding the effectiveness of using the Duolingo application.

Table 1. Results of the Pre-test and Post-test of Students' Vocabulary Ability

No	Students Name	Score Pre-test	Score Post-test	Score Difference
1	SW	60	75	+15
2	MS	58	74	+16
3	SNRD	63	80	+17
4	PZZ	65	82	+17
5	LS	59	76	+17
6	AD	62	79	+17
7	HZ	61	77	+16
8	NIRN	64	81	+17
9	MK	57	73	+16
10	MPA	60	76	+16
11	N	62	79	+17
12	RL	63	78	+15
13	FA	64	80	+16
14	SL	58	73	+15
15	RAU	61	76	+15
16	UA	60	75	+15
17	AMS	59	74	+15
18	SM	65	83	+18
19	FRSS	61	78	+17
20	AA	63	79	+16
21	LSL	62	78	+16
22	WSR	66	82	+16

Pre-test Average	: 62.4
Post-test Average	: 78.1
Average Score Difference	: 15.7

Table 2. Paired t-test Pre-test and Post-test

Statistic	Score
Pre-test Average	62,4
Post-test Average	78,1
Average Score Difference	15,7
Standard Deviasi	1,79
t-value	6,542
df (degree of freedom)	21
p-value	0,000

a. Average Pre-test and Post-test: Table 1 reveals that the average pre-test was 62.4, while the average post-test increased to 78.1, with an average difference of 15.7 points. It shows that the use of the Duolingo

application provides a significant increase in students' vocabulary skills.

b. Paired t-test: Based on Table 2, the yield of the paired t-test shows that the t-value is 6.542 with a p-value of 0.000 (p < 0.05). It shows that the difference between the pre-test and post-test is statistically significant, so the alternative hypothesis stating that the utilization of the Duolingo application has a significant inflict on students' vocabulary skills is accepted.

a. How effective is the utilization of the Duolingo application as a vocabulary learning tool in improving the vocabulary skills of English Language Education students at STAIN Madina?

The Duolingo application was efficacious in upgrading students' vocabulary skills. It can be seen from the increase in the average vocabulary score in the post-test compared to the pre-test. From an average pre-test score of 62.4, it increased to 78.1 in the post-test. The paired t-test denotes that the distinction was statistically significant (p <0.05), which means the use of the Duolingo application.

b. To what extent can the Duolingo application motivate English Language Education students at STAIN Madina to learn English vocabulary?

From the results of the questionnaire given to students, 80% of respondents reported that the utilization of the Duolingo application provided high motivation to acquire English vocabulary. Factors that increase motivation include ease of use, an interactive interface, and the presence of reward or achievement features that provide additional encouragement to continue learning.

c. What are the advantages and disadvantages felt by English Language Education students of

STAIN Madina when using the Duolingo application for vocabulary learning?

Advantages: 1) Interactive and Fun: Students feel that Duolingo offers a more enjoyable learning method than conventional methods. 2) Independent Learning: Students can learn anytime and anywhere without having to rely on formal classes. 3) Instant Feedback: The application provides immediate feedback after answering so students can immediately correct their mistakes.

Disadvantages: 1) Content Limitations: Some students feel that the vocabulary presented by Duolingo is less specific to academic contexts and tends to focus more on everyday use. 2) Too Repetitive: Some students feel that some parts of the learning in Duolingo are too repetitive, reducing variation in the learning process.

These results are in line with research by Sundqvist & Sylvén (2016), which found that applications such as Duolingo offer a fun and independent learning experience, although the content often does not always match advanced academic needs.

d. How does the Duolingo application play a role in facilitating independent vocabulary learning for English Education students at STAIN Madina?

The results of observations and interviews show that Duolingo facilitates independent learning well. Around 85% of students stated that this application helps them learn vocabulary outside of class without the need for guidance from lecturers. They can set their own study time and adjust their learning speed according to their respective abilities.

e. Is there a significant difference in English vocabulary mastery between English Education students at STAIN

Madina who use the Duolingo application and those who do not?

This study also conducted a comparison between students who used Duolingo as a vocabulary learning tool and a control group that did not use Duolingo.

Average score of the Duolingo user group: 78.1

Average score of the non-Duolingo group: 65.7

The t-test indicates that this distinction was significant, with a p-value of 0.003 (p <0.05). It confirms use of Duolingo has a prominent positive impact on students' vocabulary skills compared to traditional learning methods without the application.

D. Conclusion and Suggestion

The outcome of the quantitative analysis presented in the table this research concludes that Duolingo application as a vocabulary learning tool significantly improves the vocabulary skills of students Tadris Bahasa Inggris at STAIN Madina in the first semester. The pre-test and post-test indicate a significant upgrade, and statistical tests supported this finding with a very low p-value. Overall, this represents that the Duolingo application is effective in improving vocabulary skills, motivating students, and facilitating independent learning. In addition, there is a significant difference in vocabulary mastery between students who use Duolingo and those who do not. The advantages that are felt include an interactive interface and learning flexibility, although some disadvantages were also found related to content that is less appropriate for advanced academic needs.

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