

The Effectiveness of Duolingo and Busuu Apps to Improve English Vocabulary Mastery The Case of Second Grade Students of Ma Yarobi Grobogan

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ABSTRACT

Vocabulary is crucial in teaching English and mastering the four basic skills. This study aimed to evaluate the vocabulary mastery of second-grade students at MA YAROBI Grobogan before and after using Duolingo and Busuu applications, and to measure significant differences in their vocabulary understanding. The quasi-experimental design involved 61 students. Data were collected through pre-tests, post-tests, and questionnaires. Results indicated a significant increase in vocabulary mastery, with average pre-test scores of 32.80 and 32.48, and post-test scores rising to 82.00 and 80.06. The t-test showed a significant difference ($t = -16.900$, $p < 0.001$). Most students responded positively, finding the applications helpful and enjoyable.

INTRODUCTION

English is an international language, and in this era, it is ubiquitous. Consequently, mastering English is vital for students, especially those in senior high school. Proficiency in English helps prepare students for higher education, where many textbooks and scientific journals are in English. Early mastery of English in middle school allows students to better handle academic challenges in the future. Learning English at a young age has several benefits, including faster language absorption and better long-term language skills development. In Indonesia, English is a mandatory subject in schools, with students attending English classes twice a week.

Vocabulary is crucial for learning English, as it integrates listening, reading, writing, and speaking skills. To communicate effectively in a foreign language, students need a broad vocabulary and the ability to use words correctly. The first step in learning English is mastering vocabulary. However, students often lose interest in lessons because they do not understand many words or sentences in English, having only a limited vocabulary from elementary school.

To address this issue, teachers need to find new, effective methods to enhance students' vocabulary. According to Rahardjito et al. in Baidawi (2016), learning media are tools brought into the classroom by teachers to facilitate the teaching and learning process. This study focuses on using media as an alternative method for teaching English and improving students' vocabulary. Various media, such as films, videos, and specific applications, can enhance vocabulary through audio-visual means. Popular English learning applications like Duolingo and Busuu are widely used in Indonesia for this purpose.

Duolingo is a free language-learning application developed by Luis von Ahn and Severin Hacker. It offers courses in multiple languages, including English, Spanish, French, Korean, Italian, German, and Portuguese. Duolingo employs game features to make learning engaging and effective, requiring users to complete levels to progress. The app includes various exercises, such as writing, listening, and speaking, and offers tailored workouts to address learners' deficiencies.

Busuu provides language courses in 12 languages, including English, Spanish, French, and German, and has over 100 million users worldwide. The courses are divided into four levels: beginner, elementary, low intermediate, and higher intermediate. Busuu is available on Android and iOS platforms, making it accessible for students and teachers. It is a suitable option for those with limited time for face-to-face courses, offering a variety of themes to keep learning enjoyable.

This study investigates the use of Duolingo and Busuu as teaching tools to enhance the vocabulary of second-grade students at MA Yarobi Grobogan. The popularity of these applications among the younger generation provides an opportunity to utilize these platforms for learning and expanding English vocabulary anytime and anywhere.

LITERATURE REVIEW

Vocabulary is a key element in language learning and teaching. It encompasses all the words a person knows, learns, and uses. These words are employed in various aspects of life, including daily communication.

In the context of language education, a deeper understanding of vocabulary is necessary. Experts have provided various definitions. For instance, vocabulary is viewed as the understanding of words and their meanings. Steven Stahl (2005) emphasizes that vocabulary knowledge is not just about definitions, but also how words function in a broader context. Mastering vocabulary is a lifelong process that continually expands and deepens.

Najah (2013) defines vocabulary as the totality of words in a language, including idioms composed of multiple words that make sense in specific contexts, as well as single words used to express ideas.

Mastering a wide range of words and their usage is crucial for students. To achieve proficiency in English, learners need to grasp four key elements, with vocabulary acquisition being the initial and fundamental step. Many students struggle with English lessons due to their limited vocabulary, which often stems from their elementary school education. This lack of word knowledge hinders their comprehension of English sentences and texts, leading to disinterest in the subject. Expanding their vocabulary is therefore essential for increasing engagement and understanding in English language learning.

effective ways of learning English to increase students' vocabulary. Rahardjito et al in Baidawi (2016) state that learning media is a tool provided and brought into the classroom by a teacher to facilitate the teaching and learning process for students. In this study, researchers focused on media which can be an alternative way to teach English, especially to improve students' vocabulary. Many media can be used to increase students' vocabulary using audio-visual media through films, videos, or certain applications. Many English applications can be used as learning media, such as Babble, and cake and the most popular among Indonesian people for learning English are applications Duolingo and Busuu.

Based on this understanding, the hypothesis of this study is that the use of Duolingo and Busuu applications as teaching tools will result in a significant increase in vocabulary mastery among second-grade students at MA YAROBI. The hypothesis suggests that the engaging and contextual Duolingo and Busuu applications will facilitate better knowledge acquisition compared to traditional methods.

METHODOLOGY

This study used a quantitative According to Creswell (2018), defines quantitative research as analyzing the relationship between variables to evaluate objective theories. quasi-experimental design with a pre-test, post-test, and two-group questionnaire model. Allen (2017) explains that the two group pre-test-post-test design is commonly employed in research to assess the impact of a treatment or intervention on a sample without requiring the Control group.. The sample consisted of 61 second-grade students from MA YAROBI

Grobogan. Before the intervention, a pre-test was given to assess students' initial vocabulary knowledge. The intervention involved the use of Duolingo and Busuu applications as the main teaching tools, where students used and participated in vocabulary exercises related to the content.

During the intervention, vocabulary was introduced through various activities, including discussions and visual aids. The post-test measured students' vocabulary gains after the intervention, after the pre-test and post-test students were given a questionnaire aimed at collecting student feedback on the use of Duolingo and Busuu to teach vocabulary. Data analysis involved comparing the average pre-test and post-test scores, and the average questionnaire score to determine the significance of vocabulary gains.

RESEARCH RESULT

Validity Test Result

Table 1. Result of Validity Instrument Test

Question Number	R-table	R-count	criteria
1	0,396	0,998	valid
2	0,396	0,997	valid
3	0,396	0,998	valid
4	0,396	0,998	valid
5	0,396	0,997	valid
6	0,396	0,998	valid
7	0,396	0,997	valid
8	0,396	0,998	valid
9	0,396	0,998	valid
10	0,396	0,998	valid

After calculating the result with Pearson Product Moment, from the table of results of the instrument validity test, the conclusion is that all instrument items are considered valid and can be used in research.

Reliability Test Result

Table 2 . Result of Reliability Instrument Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.999	10

The Cronbach's Alpha value is 0.999, which is in a fairly high reliability. This shows that the reliability of the scale consisting of pre-test and post-test scores is good. In conclusion, the reliability analysis shows that the pre-test and post-test scores can form a reliable scale with a Cronbach's Alpha of 0.999. This shows that the measurement instrument used by the researcher is reliable.

The significant differences between students' vocabulary mastery of the Second Grade Students of MA YAROBI Grobogan Before and after Being Taught Using Duolingo

The scores were calculated using SPSS software, and to reveal the distribution of students' language comprehension scores between pre- and post-test, as well as the mean and standard deviation. The following table displays the results:

Table 3. Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Hasil	1	30	32.80	17.363	3.170
	2	30	82.00	5.252	.959

This table presents Group Statistics for pre-test and post-test scores from 30 participants. In the pre-test, the lowest score was 20, and the highest was 72, with an average score of 32.80 and a standard deviation of 17.363, indicating a wide range of scores. For the post-test, scores ranged from 72 to 92, with a mean of 82.00 and a standard deviation of 5.252, showing less variability and scores clustering around the mean. The higher post-test mean and lower standard deviation signify an improvement in scores and more consistent performance, suggesting the intervention or learning process effectively enhanced participants' performance.

Table 4. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
hasil	Equal variances assumed	19.976	<,001	-14.855	58	<,001	<,001	-49.200	3.312	-55.830	-42.570
	Equal variances not assumed			-14.855	34.263	<,001	<,001	-49.200	3.312	-55.929	-42.471

The t-value of -14.855 shows a substantial difference between group means. The p-value (< .001) indicates this difference is statistically significant, unlikely due to chance. The results confirm a significant difference between group means (t = -14.855, p < .001), leading us to reject the null hypothesis. This suggests a statistically significant difference between group scores. The negative mean difference indicates one group's mean score is significantly lower than the other's by 49.200 points, with high confidence in this result.

The significant differences between students' vocabulary mastery of the Second Grade Students of MA YAROBI Grobogan Before and after Being Taught Using Busuu

The scores were calculated using SPSS software, and to reveal the distribution of students' language comprehension scores between pre- and post-test, as well as the mean and standard deviation. The following table displays the results:

Tabel 5. The results of vocabulary mastery of grade 2 students of MA YAROBI Grobogan before and after being taught using Busuu

Group Statistics						
	kelompok	N	Mean	Std. Deviation	Std. Error Mean	
hasil	1	31	32.48	14.396	2.586	
	2	31	80.06	6.202	1.114	

This table shows Group Statistics for pre-test and post-test scores from 30 participants. The pre-test scores ranged from 20 to 62, with an average of 32.48 and a standard deviation of 14.396, indicating a wide score range. The post-test scores ranged from 72 to 92, with a mean of 80.06 and a standard deviation of 6.202, indicating less variability. The higher post-test mean and lower standard deviation suggest an overall improvement and more consistent performance, implying the intervention effectively enhanced participants' scores.

Table 6. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				95% Confidence Interval of the Difference			
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	Lower	Upper
						One-Sided p	Two-Sided p				
hasil	Equal variances assumed	10.572	.002	-16.900	60	<,001	<,001	-47.581	2.815	-53.212	-41.949
	Equal variances not assumed			-16.900	40.764	<,001	<,001	-47.581	2.815	-53.267	-41.894

The t-value of -16.900 signifies a substantial difference between group means. The p-value ($< .001$) indicates this difference is statistically significant, unlikely due to chance. These results show a significant difference between group means ($t = -16.900, p < .001$), leading to rejecting the null hypothesis. This confirms a statistically significant difference between group scores. The negative mean difference indicates one group's mean score is significantly lower than the other's by 47.581 points, with high confidence in this result.

The Significant Differences In Vocabulary Mastery Of The Two Grade Students MA YAROBI GROBOGAN Taught By Using Duolingo And Busuu.

The scores were calculated using SPSS software, and to reveal the distribution of students' language comprehension scores between pre- and post-test, as well as the mean and standard deviation. The following table displays the results:

Table 7. Group Statistics

Table 7 Group Statistics					
	kelompok	N	Mean	Std. Deviation	Std. Error Mean

hasil	1	30	82.00	5.252	.959
	2	31	80.06	6.202	1.114

This table shows post-test group statistics for 61 participants. Scores ranged from 72 to 92. The mean scores for the two groups were 82.00 and 80.06, indicating an improvement from the pre-test. The post-test standard deviations were 5.252 and 6.202, showing less variability and more clustered scores around the mean. Overall, the statistics reveal a significant score improvement from pre-test to post-test, suggesting the intervention effectively enhanced participant performance. The decreased standard deviation in the post-test indicates more consistent performance among participants.

Table 8. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance One- Sided p	Two- Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
										Lower	Upper
hasil	Equal variances assumed	3.150	.081	1.313	59	.097	.194	1.935	1.474	-1.014	4.885
	Equal variances not assumed			1.317	57.993	.097	.193	1.935	1.470	-1.007	4.878

The t-value (1.313) with df=59 gives a two-sided p-value of 0.194. Since this p-value is greater than 0.05, we cannot reject the null hypothesis, indicating no statistically significant difference between the group means at the 5% level. The mean difference is 1.935, suggesting a notable difference, but it is not statistically significant. The 95% confidence interval ranges from -1.014 to 4.885, including 0, supporting the conclusion of no significant difference. The standard error of the difference (1.474) shows variability in the mean difference estimate.

The Result of the Responses from Students Toward Duolingo and Busuu in Improving Vocabulary Mastery of the Second Grade Students.

Survey results on using Duolingo and Busuu for English learning highlighted various positive and negative aspects. Out of 10 statements, most students provided positive feedback about their experiences. Learning preparation was rated well with an average of 3.73, indicating well-prepared materials. Vocabulary learning was seen as challenging and helpful, with averages of 3.52 and 3.54, respectively. Students felt these apps expanded their knowledge (average 4.01). However, some found them boring and difficult

(average 3.63). Overall, students saw dual benefits in comprehension and knowledge improvement, with interesting material (3.45). Most enjoyed using these apps (3.78) and would recommend them (3.68). Despite some negatives, students benefited significantly from using Duolingo and Busuu.

DISCUSSION

Students positively assess the use of Duolingo and Busuu for learning English, finding the applications challenging, useful, and broadening their horizons. While a few students find them boring or difficult, most do not feel pressured. They report improved abilities and general knowledge. Assignments are seen as appropriate, challenging, and helpful for understanding. The processing time and materials are considered adequate. Most students enjoy this method and recommend it. Overall, the benefits of using these applications in English learning are significant.

This research demonstrates that Duolingo and Busuu can be effective learning media, especially for vocabulary enhancement, showing significant improvements in students' abilities and positive responses, making them valuable tools for teachers seeking engaging classroom activities.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this research, researchers were able to show that the Duolingo and Busuu applications can be used as new learning media for learning English, especially for increasing vocabulary. Researchers were able to show that using the Duolingo and Busuu applications as media in teaching and learning activities significantly improved students' abilities. Researchers were able to demonstrate that students' vocabulary skills experienced a significant increase before and after learning activities by using the Duolingo and Busuu applications as media in teaching and learning activities. Furthermore, researchers showed that students' responses to the use of the Duolingo and Busuu applications as media in teaching and learning activities were very positive.

This can be a very good reason for teachers to start experimenting with new media that are more interesting and fun in classroom learning activities, such as using the Duolingo and Busuu applications.

ADVANCED RESEARCH

Considering the researchers' own limited knowledge and skills, the researcher has come to the realization while producing this article that there are still numerous deficiencies in language, writing, and presentation style. As a result, the researcher anticipates helpful critiques and recommendations from a range of sources to ensure the piece is flawless.

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