

The Implementation of Duolingo Application in Learning English Vocabulary
تنفيذ تطبيق دولينجو في تعلم مفردات اللغة الانكليزية

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Abstract

This study seeks to establish some reflections about learning English vocabulary with Duolingo application. On desktops, tablets, and smartphones, Duolingo is a free program that may be used to learn a variety of languages, including English, German, and Turkish. This study investigates the implementation of Duolingo application in learning English vocabulary. In order to achieve the aim of this study, the researcher used a null hypothesis, which states that there is no significant difference in vocabulary acquisition between students who use Duolingo application and those who do not. An eight-week experiment using a control group, random assignment, and posttest design was carried out to fulfill the aim of the study.

The t-test for two independent samples has been used and revealed that there is a statistically significant difference in favor of the experimental group, with the calculated t-value of 4.1 being higher than the tabulated value 2 at 0.05. As a result, students' awareness of their subject matter increases, proving that utilizing Duolingo application to acquire vocabulary is more effective than a conventional method. Conclusions, recommendations, and suggestions for further research are presented at the end of the research paper.

Keywords: Duolingo, Vocabulary Learning

المستخلص

تسعى هذه الدراسة إلى تكوين بعض الأفكار حول تعلم مفردات اللغة الإنجليزية من خلال تطبيق Duolingo. يعد هذا التطبيق من التطبيقات المجانية التي يمكن تنزيلها واستخدامها على أجهزة الكمبيوتر المكتبية والأجهزة اللوحية والهواتف الذكية ويضم مجموعة متنوعة من اللغات ، بما في ذلك الإنجليزية والألمانية والتركية. تهدف هذه الدراسة إلى التحقق من تنفيذ تطبيق Duolingo في تعلم مفردات اللغة الإنجليزية. من أجل تحقيق هدف الدراسة ، استخدم الباحث الفرضية الصفرية ، والتي تنص على أنه لا يوجد فروق ذو دلالة إحصائية في اكتساب وتطوير مفردات اللغة الانكليزية بين الطلاب الذين يستخدمون تطبيق Duolingo وأولئك الذين لا يستخدمونه. أجريت تجربة لمدة ثمانية أسابيع باستخدام مجموعة ضابطة ، واختيار عينة عشوائية ، وتصميم اختبار لاحق لتحقيق هدف الدراسة.

تم استخدام الاختبار التائي لعينتين مستقلتين وأشارت النتيجة الى وجود فروق ذات دلالة إحصائية لصالح المجموعة التجريبية ، حيث كانت القيمة الناتجة المحسوبة والتي تبلغ 4.1 أعلى من القيمة المجدولة 2 عند 0.05 مستوى دلالة . نتيجة لذلك يزداد وعي الطلاب بالمادة الدراسية ، مما يثبت أن استخدام تطبيق Duolingo لاكتساب المفردات هو أكثر فعالية من الطريقة التقليدية. في نهاية البحث تم تقديم الاستنتاجات والتوصيات والاقتراحات للبحوث القادمة .
الكلمات المفتاحية: تطبيق دولينجو، تعلم المفردات.

Introduction

1.1. The Problem of the Study and its Significance

English as a second and foreign language is spoken by practically the most of the population. This makes it simpler for the user to interact with the outside world in terms of education, employment, and other key aspects that advance knowledge and technology.

As there are many parts that are more understood and comprehensible by learners, foreign languages require much work to learn and master. English requires mastery of the four language skills: speaking, writing, reading, and listening.

Along with language skills, there are fundamentals that are crucial to promote language proficiency. These fundamentals include vocabulary, pronunciation, and grammar, all of which must be taught.

Learning vocabulary is a crucial and integral element of learning a language. It is necessary for the learners who wish to become fluent in English. Studying a language, especially a foreign language like English, vocabulary must be understood and learned. Learning a new language presents challenges for language learners who want to grasp the content. The difficulty in learning vocabulary in a foreign language is that it is used less frequently in daily activities than in native tongues. Besides, having memorized words from articles or books that they read, students find it difficult to expand their vocabulary because they forget it before being employed in conversation. The learners might be unwilling to open their book or article out of boredom or laziness in order to review the same vocabulary. It causes learners to lack vocabulary, have trouble understanding texts, or have trouble expressing themselves verbally.

There are various applications that may be used for vocabulary learning and that offer entertaining elements so that responding to the same issue is not monotonous. One of the well-known applications for learning English is Duolingo, which has been downloaded by more than 300 million people worldwide (Karisma & Ulfi, 2019:2).

The goals of the designers of Duolingo are to make learning enjoyable, accessible to all users, and free. Duolingo is a language learning tool that simulates a game and has been shown via research to be successful. It is created to make learning a language entertaining and simple.

1.2. Aim of the Study

This study aims to empirically examine the implementation of Duolingo application in learning English vocabulary.

1.3. Hypothesis of the Study

The following null hypothesis, which states that there is no statistically significant difference between students' vocabulary who practice Duolingo application and those who do not, will be investigated.

1.4. Limits of the Study

The present study is limited to first year students/morning class at the Department of Hotels Management/ College of Tourism Sciences during the academic year (2021-2022).

1.5. Definitions of Basic Terms

1.5.1. Duolingo

Duolingo is a free language learning application which is designed to support the field of education without language barriers. Users of Duolingo benefit from its appealing and simple features, which make learning new words enjoyable, interesting, and simple to recall (Jaskova, 2014:26).

1.5.2. Vocabulary

Vocabulary is a crucial part of language ability since it forms a large part of how well speakers, listeners, readers, and writers communicate. It is a list of terms in the target language or a list of words that a speaker might use (Richards and Renandya, 2002: 81).

Section Two Theoretical Background

2.1. Vocabulary Learning

When it comes to the methodology of teaching foreign languages, vocabulary is a language object. One language component that is essential for mastering language is vocabulary. The ninth edition of Webster's New Collegiate Dictionary (Webster, 1987) defines vocabulary as a list or collection of terms or codes that are available for usage. The most crucial part of learning a language is developing one's vocabulary. Students must grasp this fundamental subskill before moving on to learning additional language skills including speaking, listening, writing, and reading. Despite the fact that vocabulary serves as the foundation for language's parts and characteristics, acquiring vocabulary in the classroom can be challenging (Nunan, 1991:36). Students who are learning vocabulary may not find it easier to comprehend language-related information. An English text will be challenging for students to read and comprehend, making it challenging for them to work on text-related assignments. Additionally, since they don't understand the meaning of the words they need to communicate, learners will find it difficult to speak or understand what a native speaker is saying in a foreign language. As vocabulary is the foundation of the language itself, acquiring vocabulary is crucial for everyone who intends to become fluent in a foreign language.

2.2. Duolingo

According to the experts in educational technology, the major purpose of technology in educational is to increase the overall effectiveness of the teaching and learning process. The use of educational technology in the classroom improves efficiency, effectiveness, and adds value to the educational process. This includes both teaching and learning. The effectiveness and efficient indicates that educational efforts are made to attain the defined goals with the least amount of money, time, and effort (Stanley, 2013:47).

English learning may now be done through new media such as using the applications that can be downloaded and set up on smartphones such as Duolingo. Google Play store offers this language-learning application freely. Duolingo "builds a world with free education and no language barriers," as it is described on their website. Users can translate while also learning languages simultaneously (Jašková, 2014:150). Duolingo provides a number of features to help users learn new language points, particularly vocabulary. It helps users to feel joyful, intrigued, and find words simple to comprehend and remember. Duolingo offers features that are appealing and simple to use.

2.2. The Structure of Duolingo

The duolingo application can help learners in the same way as studying writing, speaking, and listening have. Duolingo tests learners on every level when they attempt to advance and respond to any questions they may have. Beginning with the sentence translation, they can then create the sentence (as grammar), type the sentence they hear, respond to it, repeat the conversation they hear, and even search for similarities or opposition. Yet more is included, Duolingo is prepared to benefit users and serve as a daily reminder to maintain positive habits. The lessons in each unit are organized in a linear way and consist of a series of chronologically arranged tasks that are supported in simple language.

The software must be downloaded and installed on the learners' Android or IOS devices before they may use it. Comparing to competing applications like Babbel and Busuu, Duolingo offers a very wide variety of languages that is still expanding, largely because of its distinctive and sizable community of learners and the platform it offers for them .

The software prompts users to "choose a daily objective" from a list that appears once they have chosen which language they want to study. Daily targets vary from casual to regular to serious, which correspond to 5, 10, 15, and 20 minutes of practice per day, respectively. The program then asks the users whether they have any prior knowledge of the language, and if they do, they are then given a placement test.

2.3. Improvement of Vocabulary Using Duolingo

Modern technology has advanced so quickly that it is no longer a challenge to make learning more enjoyable. The use of technology has been suggested by specialists in education as a way to help organize and offer material for students, facilitate student and teacher interaction, and make the learning experience more varied.

The way that Duolingo is utilized to improve vocabulary is that it inspires students to learn more about vocabulary, one of which uses the application's gaming element which is done by using the application's game feature, which makes learning fun and introduces students to new vocabulary that they may not be familiar with. The Duolingo application's features encourage learners to explore new things, including those that let them learn while having fun. Additionally, the "duolingo friend" feature in this application allows users to converse in other languages, particularly English, honing their capacity to learn new words.

Section Three

Methodology and Procedures

3.1. The experimental Design

The experimental design is defined as a work program through which the procedures for implementing the experiment are carried out and the circumstances and factors surrounding the experiment are planned so that the researcher observes them and tests the differences in order to reach accurate results about the relationship between the independent and dependent variables. The experimental design is shown in table (1) below.

Table (1).

The Experimental Design

Group	Independent variable	Dependent variable	Tool
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experimental	Duolingo Application	Vocabulary Learning	Post-test
Control			

Using this design, the researcher used two groups, one of which was experimental that are exposed to the independent variable, and the other was a control group whose members are not exposed to the effect of the independent variable, but are taught in a traditional way, and then the difference between the students' scores of the experimental and control groups is calculated in the post-test.

3.2. Population and Sample

Determining the original population is necessary for selecting the sample that represents it as a real representation. The population of the present study consists of (95) EFL collage students from Department of Hotels mangement, College of Tourism Sciences, University of Mustansiriyah, in the academic year (2021-2022). The sample has been randomly selected from the aforementioned population. Section (A) is chosen as the experimental group, and another group was chosen as a control group (namely section B). There are 48 students in Section A and 47 in Section B. After excluding those who are selected randomly for the pilot study and failing students from both groups, there are (60) students in the sample overall, with (30) students in each group.

The reason for excluding the failing students is that they have previous experience in the subjects that are taught during the experiment and may affect the dependent variable and the accuracy of the results. In order to preserve the educational system, the researcher omitted the results of failing students from the statistical equivalence and final results only, and they continued inside the classroom during the experiment.

3.3. Equivalence of the Sample

The factors that might have affected the experiment are under the researcher's control. The variables are age and parents' educational level. Using the t-test for two independent samples and chi-square formula, the differences are evaluated at the (0.05) level of significance. Since there are no statistically significant differences between the experimental group and control group, it is determined that the subjects in both groups are comparable on the aforementioned factors. The outcomes of the statistical analysis of the sample equivalency are presented in Tables 2, 3, and 4 below.

Table 2
Statistics of T-Test for Age Variable

Variable	Group	Number	df	Computed t-value	Tabulated t-value
Age	A	30	28	0.169	2.02
	B	30			

Table 3
Statistics of Chi-square for Fathers' Education Variable

Variable	Group	Number	Primary	Intermediate	Secondary	Deplo ma	BA	M A	PH D	df	Computed Chi-Square	Tabulated Value
Fathers' Education	A	30	2	7	4	3	12	-	2	28	2.3	19.42
	B	30	3	5	6	1	15	-	-			
	Total	60	5	12	10	4	27	-	2			

Table 4
Statistics of Chi-square for Fathers' Education Variable

Variable	Group	Number	House Wives	Primary	Intermediate	Secondary	Deplo ma	B A	M A	PH D	df	Computed Chi-Square	Tabulated Value
mothers' Education	A	30	8	3	6	3	1	9	-	-	28	2.5	21.33
	B	30	11	3	5	6	-	5	-	-			
	Total	60	19	6	11	9	0	14	-	-			

3.4. Instrument

The researcher has constructed a multiple choice questions test that consists of twenty five items. Each item of this test consists of four alternatives.1 score is given for each item.

3.5. Validity

The degree to which a test reflects the aim of the test is known as its validity (Downie, 1967:92). The test items are exposed to a jury committee of linguistics and methodology experts to determine whether or not they are appropriate for the stated purpose in order to ensure face validity. The jury is then asked to read the test and make any necessary additions, deletions, or changes. Their responses are the test is valid and ready to be applied.

3.6. Pilot Administration

The test is administered in a pilot setting on December 3, 2021. A sample of 20 first-year students from the same Department/College of Tourism Sciences are chosen at random to participate in an experimental trial of the test. This pilot study has the following objectives:

- 1- Estimate the time required to complete the test.
2. Provide details about the test's simplicity of administration.
3. Verify the instructions' clarity.
4. Assess the effectiveness of test items in terms of their level of difficulty and discrimination power.
5. Calculate the test's reliability coefficient.

According to the pilot study, it took 30 minutes to complete the test. The directions are understandable, in terms of clarity. The test items' discrimination power ranges from 0.1 to 0.8, according to an adaptation of the item discrimination formula. In addition, it is found by using the item difficulty level calculation that it varied

between 0.08 and 0.3. This means that the discrimination power and the item difficulty level are acceptable

3.7. Reliability

The consistency of the test measurement is what is meant by the term reliability (Oller, 1979:4). The split-half method, in which the items are split into two halves, is one approach for determining test reliability (odd and even). Test reliability is calculated using the Pearson correlation formula and is determined to be 0.78. After using the Spearman Brown formula, it was determined that test reliability is 0.850. This proves that the test is reliable.

Section Four

Results, Conclusions, Recommendations and Suggestions for Further Research

4.1. Results

The t-test formula for two independent samples is employed to determine whether there is a statistically significant difference between the two mean scores of the experimental and control groups in the overall score of the post-test. The experimental group's mean score is 78.62, whereas the control group's is 64.32 as it is shown in table 4. It is found through the use of the t-test that the estimated t-value is 4.1, which is more than the tabulated value of 2.000 at 0.05, indicating a statistically significant difference in favor of the experimental group. This shows that learning vocabulary through the Duolingo application is more effective than studying it the traditional way because it increases students' awareness of the importance of learning new words. Therefore, the post-test results indicate that there is a significant difference between the two groups in their vocabulary learning, and the null hypothesis is thus rejected.

Table 4
Statistics of T-test or the two research groups in the post-test

Group	Sample	Mean Scores	Standard Deviation	df	T-value		Level of Significance
					Computed	Tabulated	
Experimental	30	78.62	4.56	58	4.1	2	0.05
Control	30	64.32	4.51				

Based on the post-test analysis, the findings indicate that the experimental group clearly outperformed the control group, and the students of the experimental group acquired significantly more knowledge than those in the control group. According to the results, Duolingo application is effective and useful in learning English vocabulary.

4.2. Conclusions

The most crucial component of learning a language is its vocabulary. To become proficient in speaking, writing, reading, and listening in another language, vocabulary must be grasped. There is a medium that enhances the learning process, and it is called Duolingo. This makes the vocabulary learning process more enjoyable, fun, and interesting. Due to the learning principle of "learning while playing," Duolingo creates a unique environment for vocabulary learning because it offers users a variety of fun features and levels. It can be inferred that using mobile apps for learning (like Duolingo) can make teaching and learning activities more effective. Duolingo provides alternative learning media for a teaching-based mobile application that can be used to improve students' proficiency with English and its vocabulary.

4.3. Recommendations

To make learning process more interesting, teachers should apply an appropriate media. Besides teaching by using textbook teachers can also provide audiovisual media such as Duolingo. it helps students find new vocabulary, helps them understand material, and also help to memorize the vocabulary well.

4.4. Suggestions for Further Research

In light of the results, the researcher suggests the following:

1. Conducting a similar study in other skills of English language (speaking, writing, etc.).
2. Conducting a similar study for EFL students in secondary school.

References

- Downie, N.M. (1967). **Fundamentals for Measurement: Techniques and Practices**. 2nd ed. Oxford: Oxford University Press, Inc.
- Jaskova, V. (2014). **Duolingo as a New Language-Learning Website and its Contribution to E-learning Education**. Brno: Masarykova University.
- Karisma L. S., Ulfi. C, 2019. **The Use of Duolingo to Improve Vocabulary**. Tarbiyah and Teaching Education Faculty, Sayyid Ali Rahmatullah State Islamic University of Tulungagung,
- Munday.J. 2016. **Duolingo as a Bilingual Learning App: a Case Study**. Arab World English Journal, 7(2), 255-267.
- Nunan, D. (1991). **Language Teaching Methodology: A Textbook for Teacher**. Upper Saddle River, NJ: Prentice Hall.
- Oller, J.W. (1979). **Language Testing at School: A Pragmatic Approach**. London: Cambridge University Press.
- Richards, J. C., & Renandya, W. A. (2002). **Methodology in Language Teaching: An Anthology of Current Practice**. Cambridge: Cambridge University Press.
- Stanley, G. (2013). **Language Learning with Technology: Ideas for Integrating Technology in the Classroom**. Cambridge: Cambridge University Press.